

# ARMOR

*Mounted Maneuver Journal*  
October-December 2015



## MAINTENANCE AND SUSTAINMENT OF COMBAT POWER



# ARMOR

The Professional Bulletin of the Armor Branch, Headquarters, Department of the Army, PB 17-15-4

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## Features

- 8 **Combined-Arms Gunnery: Restoring the Fundamentals**  
LTG Michael S. Tucker
- 12 **Mount, Saddle, Soldier: Overcoming a Decade of Concierge Maintenance**  
LTC Jeffrey Paine and MAJ Lance Leonard
- 17 **Forward-Support Company Employment in a Decisive-Action Environment**  
LTC C.J. King Jr. and MAJ Chris Dempsey
- 22 **Training to Win in a Complex and Uncertain World**  
BG Joseph M. Martin, COL David S. Cannon and LTC Christopher W. Hartline
- 32 **Unified Land Operations in 2040 – Autonomy-Enabled Platoon-Level Missions**  
Retired COL Michael N. Smith, retired COL R. Craig Effinger III and Dr. Paul D. Rogers
- 43 **Mission Command on the Move**  
MAJ Adam R. Brady, LTC Tommy L. Cardone and CPT Edwin C. den Harder
- 47 **Mission-Command Culture: A Leader-Subordinate Contract**  
LTC Chad R. Foster
- 50 **Mission Command and Mental Block: Why the Army Won't Adopt a True Mission-Command Philosophy**  
MAJ Thomas A. Rebeck
- 55 **Human-Performance Optimization: Social Considerations for Leadership and Team Cohesion**  
MAJ Robert L. Green and Dr. Jessica Gallus
- 59 **Building Effective Leaders in a Complex Era**  
1LT David G. Forney
- 64 **Advanced Situational Awareness**  
Retired MAJ Vern L. Tubbs
- 67 **The Headquarters and Headquarters Troop Commander as Brigade Combat Team Chief of Reconnaissance**  
CPT Michael L. Hefti
- 70 **Scouts In: Reimagining Reconnaissance**  
CPT Eric Glocer
- 74 **Bridging the Gap – Outfitting Standard Scout Platoons with M113A3s**  
SFC David J. Neuzil
- 76 **2016 General Donn A. Starry Writing Competition**  
Staff
- 77 **The Army Reconnaissance Course**  
MSG Jacob Stockdill
- 79 **Experiences in International Competitions and Opportunities That Follow**  
SFC Michael A. Deleon
- 82 **Sullivan Cup 2016**  
Staff
- 83 **U.S. Army Observes 75<sup>th</sup> Anniversary of Armored Force Part II**  
Compiled by Lisa Alley
- 100 **Chief of Armor's Solicitation for Doctrinal Feedback**  
Commandant's Initiatives Group

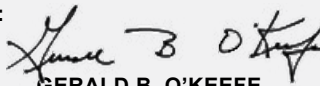
## Departments

- 1 **Contacts**
- 2 **Chief of Armor's Hatch. Draper winners**
- 5 **Gunner's Seat**
- 6 **Armor Branch Update**
- 101 **Reviews**
- 104 **Letter to editor**
- 105 **Featured unit: 68<sup>th</sup> Armor Regiment**



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# CHIEF OF ARMOR'S HATCH

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## Mastering Sustainment Operations

The 2015 Maneuver Warfighter Conference provided a forum for discussion on the future of joint combined-arms maneuver (CAM) and wide-area security. Specifically, the discussion focused on operationalizing the Army Operating Concept and focused on how to prepare formations to continuously develop situational understanding, rapidly task-organize for purpose and synchronize warfighting functions with joint, intergovernmental and multinational partners. The endstate is to present the enemy with multiple dilemmas, across multiple domains, to achieve a position of relative advantage and consolidate gains.

Through the use of both live and virtual communication channels, we learned four main outcomes of this multi-day discussion:

- Interoperability between brigade combat team (BCT) types limits commanders' ability to task organize for purpose from one BCT to another;
- Task organizing for purpose works if units build interoperability at the lowest level through habitual relationships, including National Guard and Reserve units;
- A lack of standardized communications platforms limit mission-command effectiveness; and
- Maintenance readiness continues to detract from operations.

It is this last point I would like to focus

on in this issue.

Feedback from senior leaders and combined training centers have consistently reported that junior leaders lack the knowledge and skills to master the fundamentals of Army maintenance systems and maintenance operations. The trend demonstrates that leaders are challenged in building and sustaining combat power in joint CAM in an expeditionary operating environment as part of a joint task force or BCT. As LTG Michael S. Tucker states in his article in this edition, "Soldiers need confidence in their training." Although he is referring to achieving lethality through precision gunnery, the same concept applies to mastering sustainment operations. This year, the Armor School established the Maneuver Leaders Maintenance Course (MLMC) to fill this critical gap and build a foundation of maintenance knowledge throughout the Armored Force.

### Sustaining distributed operations

Operating in an expeditionary manner and sustaining distributed operations presents significant challenges to the Armored Force. Reduced operational-readiness rates constrains commanders' ability to task-organize for purpose and sustain momentum during operations. Making sustainment operations an integral part of all training events will gain

much-needed repetitions and provide a better understanding of logistical requirements. Gunnery, situational-training exercises, combat training center train-ups and Sergeant's Time training provide many opportunities to create a culture where lethality is complemented by sustainability.

### MLMC

The MLMC fills a capability gap with junior leaders in mastering fundamentals of maintenance systems and operations to build and sustain combat power in an expeditionary operating environment. MLMC instructors train maintenance management at the company and battalion level; manage and implement a command maintenance-discipline program; and enhance knowledge on maintenance information systems and how to conduct tactical field maintenance/tactical planning considerations and operations.

The standard course size is 24 students. The target audience consists of pre/post-Maneuver Captain's Career Course (MCCC) captains, executive officers/pre-MCCC lieutenants and mid-grade noncommissioned officers. These are the leaders who will establish, operationalize and maintain sustainment systems that enable units to achieve overmatch in any environment.

For more information on MLMC,

5988-E Submissions												
Cycles	1			2			3			4		
TDs	0-3			4-6			7-9			10-13		
	Issued	T/I	%	Issued	T/I	%	Issued	T/I	%	Issued	T/I	%
HHC	59	0	0%	59	17	29%	59	43	73%			
SCT												
MTR												
MED												
A	25	13	52%	25	13	52%	25	0	0%			
B	21	12	57%	23	21	91%	23	20	87%			
C	25	19	76%	27			27	0	0%			
D	24	0	0%	30	23	77%	30	19	63%			
FSC	56	15	27%	56			56	11	20%			
CBT PWR	O/H	FMC	%	O/H	FMC	%	O/H	FMC	%	O/H	FMC	%
M1	28	21	75%	28	23	82%	28	26	93%	28	25	89%
M2	31	24	75%	31	26	84%	31	25	81%	31	26	84%
M1064	4	3	75%	4	2	50%	4	2	50%	4	2	50%
M1151	8	7	88%	8	8	100%	8	8	100%	8	8	100%
M978	11	9	82%	11	9	82%	11	9	82%	11	9	82%
M88	7	7	100%	7	6	86%	7	5	71%	7	4	57%

**Figure 1. Units conducting training at the National Training Center routinely struggle with maintaining their equipment and completing reconstitution in a timely manner due to lack of good maintenance standard operating procedures and reporting; lack of proper Preventive Maintenance Checks and Services 5988E flow; and non-aggressive parts tracking, which leads to incorrect and lost Class 9. Battalion-level leaders do not have the skills required to manage or influence sustainment systems in a BCT fight. MLMC educates maneuver leaders to apply maintenance management in garrison and operational environments.**

contact 1-16 Cavalry Squadron's S-3, MAJ Ralph Aaron, at (706) 626-8237.

As we begin 2016, the U.S. Army Armor School and U.S. Cavalry and Armor Association have announced this year's General Donn A. Starry Writing Competition. The competition evaluates and recognizes outstanding writers from across the Army who demonstrate clarity and vision about the future of the mounted force. Articles for 2016 will answer the question: **Given no restraints, what would be the optimal design for an expeditionary and sustainable armored cavalry regiment in Eastern Europe or the Middle East and why?** Participation confirmation is due no later than March 18, 2016, with article submission due no later than April 15, 2016. Recognition of the winning author will occur May 6, 2016, during the Saint George Ball at Fort Benning, GA. He or she will receive a \$1,000 check from the Cavalry and Armor Association, a 1911 commemorative pistol and possible publication in

**ARMOR** magazine. For more information and requirements, see <http://www.benning.army.mil/armor/starry>.

Also, we are excited to announce the 2016 Sullivan Cup "Best Tank Crew Competition" hosted by the Maneuver Center of Excellence, the U.S. Army Armor School and 194<sup>th</sup> Armored Brigade. The competition is set for May 2-6, 2016, at Fort Benning, GA. The competition tests tank-crew maneuver, sustainment and gunnery skills. These competitions foster the competitive spirit of our Armored Force and are included in U.S. Army Forces Command's training guidance. For more information and requirements, see <http://www.benning.army.mil/armor/sullivan>.

I encourage leaders to use Armor School media outlets to present your viewpoints on establishing maintenance systems, unique sustainment training plans or how to best operationalize those systems to the rest of us. How is your organization

preparing sustainment systems for upcoming training events? What are you doing personally? What are your thoughts on MLMC and how it will help shape armored warfare?

Share your leader development and education plan, best practices and lessons-learned on Facebook (<https://www.facebook.com/USAARMS>) and on milSuite ([https://www.milsuite.mil/book/community/spaces/apf/maneuver\\_net/maneuver\\_center\\_of\\_excellence/armored\\_force](https://www.milsuite.mil/book/community/spaces/apf/maneuver_net/maneuver_center_of_excellence/armored_force)). And of course, you may email me directly.

### Acronym Quick-Scan

- BCT** – brigade combat team
- CAM** – combined-arms maneuver
- MCCC** – Maneuver Captain's Career Course
- MLMC** – Maneuver Leader's Maintenance Course

Block 1: maintenance fundamentals and command maintenance program	Block 2: maintenance information systems	Block 3: maintenance assets and tactical maintenance employment
Days 1-4	Days 5-6	Days 7-10
-Command maintenance program -5988-E flow -Standard operating procedures (SOPs) -Army Oil Analysis Program -Small-arms repair parts -Test Measurement and Diagnostic Equipment -Services	-Global Combat Support System-Army -Standard Army Maintenance System Level 1 Enhanced -Fleet Management System Web -Logistics Information Warehouse	-Recovery operations -Planning considerations in offense and defense -Unit maintenance collection point operations -Tactical SOP -Maintenance assets above battalion level -Battalion maintenance meeting -Battle update brief (graded event)

Figure 2. MLMC 10-day course.

# Draper Armor Leadership Award Winners Announced

The Draper Armor Leadership Award Program has proven over the years to be effective in enabling professional development in the leaders and Soldiers of implementing units. Professional organizations maintain a connection to the legacy of those who have gone before them and mentor their members through lessons-learned in past conflicts and world events. Recognition of excellence and positive competition further encourages leaders to develop their respective formations into more effective organizations.

The Draper Armor Leadership Award promotes combat leadership in Armor Branch units. The award is given annually to promote, sustain and recognize excellence in leadership in Armor and Cavalry units, and is presented to a deserving unit selected by the unit's division/regimental commander according to Draper standard operating procedure.

The program was established in 1924 as a means to competitively test the leadership of small Cavalry units.

The 2015 annual unit Draper Armor Leadership Award winners:

- Troop B, 2-14 Cavalry, 2<sup>nd</sup> Stryker Brigade Combat Team (SBCT), 25<sup>th</sup> Infantry Division;
- Troop K, 4-3<sup>rd</sup> Cavalry Regiment;
- Troop A, 2-106 Cavalry, 33<sup>rd</sup> Infantry Brigade Combat Team (IBCT), 35<sup>th</sup> Infantry Division, Illinois Army National Guard;
- Troop D, 1-509<sup>th</sup>, Operations Group, 509<sup>th</sup> Infantry Regiment;
- Troop B, 1-16 Cavalry, 316<sup>th</sup> Cavalry Brigade, U.S. Army Armor School;
- Troop A, 1-105 Cavalry, 32<sup>nd</sup> IBCT, 34<sup>th</sup> Infantry Division, Wisconsin Army National Guard;
- Troop A, 2-183<sup>rd</sup> Cavalry, 116<sup>th</sup> IBCT, 29<sup>th</sup> Infantry Division, Virginia Army National Guard;
- Troop A, 1-32<sup>nd</sup> Cavalry, 1<sup>st</sup> IBCT, 101<sup>st</sup> Airborne;
- Troop C, 6-1 Cavalry, 1<sup>st</sup> SBCT, 1<sup>st</sup> Armored Division;

- Company C, 1-35 Armor, 2<sup>nd</sup> Armored Brigade Combat Team (ABCT), 1<sup>st</sup> Armored Division;
- Company D, 2-7 Cavalry, 3<sup>rd</sup> ABCT, 1<sup>st</sup> Cavalry Division; and
- Troop B, 6-9 Cavalry, 3<sup>rd</sup> ABCT, 1<sup>st</sup> Cavalry Division.

For more information regarding the Draper Armor Leadership Award, contact the Office of the Chief of Armor (OCA) at [usarmy.benning.mcoe.mbx.armor-ocoa@mail.mil](mailto:usarmy.benning.mcoe.mbx.armor-ocoa@mail.mil) or visit the OCA Website at <http://www.benning.army.mil/armor/ocoa>.

## Acronym Quick-Scan

**ABCT** – armored brigade combat team  
**IBCT** – infantry brigade combat team  
**OCA** – Office Chief of Armor  
**SBCT** – Stryker brigade combat team

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



## Make Maintenance Noncommissioned Officer Business Again

This Gunner's Seat will cover several areas. First, I'd like to give our thanks to CSM Michael Clemens, who's faithfully served the Armor community for the past couple of years. CSM Clemens has been instrumental in navigating the Armored Force through some challenging times as we continue to downsize the current force and realign ourselves from full-spectrum combat operations to getting back to the basics of Soldiering – with a focus on doctrine while still maintaining the valuable lessons-learned from overseas. CSM Clemens will continue service as the command sergeant major for Combined Security Transition Command-Afghanistan.

Next, a short introduction of myself. My most recent assignment was as the command sergeant major of 4<sup>th</sup> Infantry Brigade Combat Team out of Fort Stewart, GA. I have served our Army for more than 27 years in every leadership position a 19K tanker can hold – from tank crewman through brigade command sergeant major. I've also gained experience by serving as a senior-enlisted trainer with Operations Group National Training Center (NTC) and as Active Component/Reserve Component division adviser. It is an honor to further serve our cavalry/armored Soldiers. My top priority is aligned with the Army: readiness of our Sol-

diers, families, equipment and training.

Last, I'd like to address something in my first article that I feel is critically important to mission success for our formations, and that's basic vehicle maintenance. Vehicles are the backbone of an army. Operations and logistics depend largely on the reliability and adequacy of vehicles. I'd like to begin by stating the importance the noncommissioned officer (NCO) has regarding vehicle maintenance. Regardless if you're a tank commander charged with the care of and operation of an M1A2 tank or a supply sergeant operating an Light-Medium Tactical Vehicle, you are an integral part of overall mission success.

Historically, mission success has been directly tied to logistics and maintenance. As an NCO, you are the "technical expert" for the vehicle assigned to you, and it's incumbent on you to fully understand the 10-level preventative-maintenance checks and services (PMCS) required for that vehicle, as well as to ensure your crew are assigned the PMCS checks for their respective part of that vehicle – with you as the NCO supervising and spot-checking them as they conduct their PMCS. Always remember that "Soldiers do what leaders check."

Current operational readiness (OR) rates coming from NTC are 83 percent for Stryker brigade combat teams and 81 percent for armored brigade combat teams (ABCTs). Let's break that down into actual numbers of vehicles readily available for operations. For an ABCT, with an OR rate of 81 percent, you are looking at a company-plus of pacing items unavailable for combat operations at any given time. To me, that is shocking and unacceptable. As NCOs, we have to ask ourselves: are we teaching our drivers, gunners and crewmembers how to properly PMCS their vehicles? Are we supervising those PMCSs? Are we assisting our platoon leaders in tracking the 5988-Es daily, weekly and monthly until deficiencies are properly corrected?

We've always stressed that training Soldiers is NCO business, but I challenge you to make maintenance NCO business again. Let's get our Soldiers into the motorpools and train them on how to maintain their vehicles properly.

### Acronym Quick-Scan

**ABCT** – armored brigade combat team  
**NCO** – noncommissioned officer  
**NTC** – National Training Centers  
**OR** – operational readiness  
**PMCS** – preventative-maintenance checks and services

# ARMOR BRANCH UPDATE

## A Look at the Officer Assignment Process

by MAJ Michael R. Berriman

Following is an informative look into how Armor Branch conducts the Human Resources Command (HRC) assignment process within a given distribution cycle (DC).

DCs are the six-month periods when officers are ordered to conduct a permanent change of station (PCS). Cycles are broken into two overall periods, traditionally known as the winter cycle (DC XX-01) and the summer cycle (DC XX-02). Within these cycles, Armor Branch will typically move 25 percent of a given population in the -01 (winter) cycle and 75 percent of a given population in the -02 (summer) cycle. The following information is an attempt to show “how a bill becomes a law” – or better, how an officer who is initially identified to PCS ends with a “request for orders” (RFO) released.

**Step 1. Officer-identified-to-move (OIM) scrub.** Assignment officers (AOs) conduct an initial query of their given population through use of the Total Army Personnel Management Information System (TOPMIS). This system identifies when officers are available to PCS by month and year. The initial scrub looks for officers available to PCS within a given DC: winter (October to March) and summer (April through September). This query produces a list of officers able to PCS in the particular DC and initiates contact from the AO to the identified population.

This notification starts the dialogue among the AO, the officer, his unit and his chain of command. Important to understand: The TOPMIS scrub will generally produce an 85 percent to 90 percent answer for OIMs. We further rely on interaction from units and officers on their availability. The result of this step is a total amount of officers identified to PCS, which drives the dis-

tribution of future billets.

**Step 2. OIM declaration conference.** Within the Operations Division, a conference is held where branches and AOs “declare” the total numbers of officers available to PCS during a given cycle. Once these numbers are identified, the HRC Operations Readiness Division (ORD) assigns a total number of billets to each AO for fill. This number is based on the amount of officers declared.

Important during this step: Once officer numbers are declared, the number of billets is identified for that grade plate. If an officer (or his chain of command) at a later date determines he cannot PCS, this creates a billet that potentially goes unfilled. In the larger picture, this means an organization will not receive an officer it was expecting to receive.

**Step 3. Distribution of billets.** With the conclusion of Step 2, the total amount of billets is identified, and the AO receives a list of potential billets that ORD created. AOs will first be issued an amount of hard-code billets – assignments that only their branch can fill. In some cases, AOs will then be given a number of O2B billets (Infantry Branch/Armor Branch only) to fill. The number of hard-code and O2B billets subtracted from the amount of billets leaves the rest of billets to be O2A and O1A billets (combat-arms immaterial and branch immaterial respectively). As a math problem it might look like this: Total billets – hard-code billets – O2B billets = immaterial billets.

**Step 4. Immaterial draft.** With the number of immaterial billets identified, AOs will then go through an ORD-produced document called the Distribution Requirements List (DRL). The DRL is the list of billets considered for fill during the DC. The DRL provides

geographic location, unit identification, requested report dates and, in some cases, duty descriptions. Requisitions within the DRL are prioritized based on the Active Component Manning Guidance (ACMG) received by the Army Chief of Staff. The ACMG lists which units are priority for fills and the acceptable total percentage of fill for these units.

Within the Operations Division, a second conference is held, sometimes referred to as the “Fantasy Draft.” Similar to a Fantasy Football draft, AOs of each branch within Operations Division (by grade plate) meet in a room and “draft” billets from the DRL to ensure distribution across all branches. The draft order is randomly selected. The result of the draft is a list of all immaterial billets the AO will fill during the DC.

**Step 5. Preference sheet.** AOs create the preference sheet (typically in the form of a Microsoft Excel spreadsheet) for distribution to the OIM population. The preference sheet, at a minimum, has all billets available for consideration. The preference sheet will typically include billet location, duty title, report date (if known) and special considerations for the billet (Joint, dependent-restricted, nominative, etc.).

This is the officer’s formal opportunity to provide feedback to the AO on where he’d like to be assigned during the DC. This is also the opportunity to provide important assignment considerations like Married Army Couple’s Program (MACP), Exceptional Family Member Program (EFMP), availability date or other information.

Important during this step: While this will be the first time an officer sees the preference sheet, it is expected there has been some type of ongoing dialogue for assignment considerations



among the officer, the AO and possibly the chain of command.

**Step 6. Slating.** Once all preference sheets are returned to the AO, slating begins. Considerations for slating include officer performance, chain-of-command communication, dwell time, MACP and EFMP, and officer preference. This process is a multi-week process, as the AO develops slates, communicates with the population and ultimately produces a slate for the Armor Branch chief's review. The AO briefs the Armor Branch chief, and only on his concurrence is the slating complete and approved.

**Step 7. Notification.** With the slate approved by the Armor Branch chief, the AO begins the notification process. Notification typically happens through email or by telephone and is based on the AO's assessment of how best to communicate. Size of the population and amount of time to notify are the key driving factors. In some cases, the AO will get the opportunity to provide notification face-to-face. During notification, the AO and officer discuss/confirm report dates and any other special considerations for release of the RFO.

**Step 8. Release of RFO/assignment instructions.** The RFO's release is the last step of the process and can take anywhere from 10 minutes to three weeks. The amount of time it takes is based on special considerations for each officer. These special considerations can include EFMP, MACP, time-on-station waivers, Army

Educational Requirements System use or Joint considerations. When an officer has these considerations, the RFO goes through an internal HRC voting process, where experts in those fields review the special considerations and the RFO's circumstances, and determine if the billet location is right for the officer. Once approved and voted, the AO can release the RFO.

This process can take up to three weeks because it relies on individual people to review the officer's file and considerations. The voters are looking at the same type of considerations for all officers across all branches at the same time while conducting their normal HRC duties, thereby creating a longer process.

With the release of the RFO, officers then go to their Military Personnel Detachment for generation of orders.

As demonstrated, the assignment process is a multi-month event. Officers are typically identified to PCS about one year out from their actual PCS. The process requires interaction (at a minimum) between the AO and the identified officer. Preferably the chain of command is involved, providing feedback in preparation for the distribution of billets and considerations for assignment slating. The result of the process is an officer with RFO in hand, prepared for his next assignment.

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*executive officer, 2<sup>nd</sup> Cavalry Regiment, Vilseck, Germany; squadron S-3, 4<sup>th</sup> Squadron, 2<sup>nd</sup> Cavalry Regiment, Vilseck; aide-de-camp for the commanding general of U.S. Army Europe, Heidelberg, Germany; and aide-de-camp for the deputy commanding general-initial military training, U.S. Army Training and Doctrine Command, Fort Monroe, VA. His military schooling includes Command and General Staff College (via distance learning), MCCC and Armor Officer Basic Course. MAJ Berriman holds a bachelor's of science degree in psychology from Missouri State University and a master's of arts degree in leadership and management from Webster University.*

## Acronym Quick-Scan

**ACMG** – Active Component Manning Guidance  
**AO** – assignment officer  
**DC** – distribution cycle  
**DRL** – Distribution Requirements List  
**EFMP** – Exceptional Family Member Program  
**HRC** – Human Resources Command  
**MACP** – Married Army Couple's Program  
**OIM** – officer identified to move  
**ORD** – Operations Readiness Division  
**PCS** – permanent change of station  
**RFO** – request for orders  
**TOPMIS** – Total Army Personnel Management Information System

# Combined-Arms Gunnery: Restoring the Fundamentals

by LTG Michael S. Tucker

*LTC Highspeed, battalion commander for 3-99<sup>th</sup> Combined Arms Battalion, was frustrated. Though fairly new to command (approaching 60 days), his unit's execution of qualification gunnery was winding down, but admittedly things were not quite right and his frustration was changing to embarrassment. The level of organization on the ranges was lacking, indicating that key personnel within his organization did not fully understand gunnery planning and execution.*

*As he witnessed several runs from the tower, it was obvious that armament accuracy checks and prep-to-fire checks were not being conducted to standard, with multiple alibis due to faults which would have been caught in these earlier checks. Also, his crews appeared to be slow during engagements, and Table VI qualification scores did not match the success the crews attained on the previous gate tables. Safety was emerging as an issue, which indicated some of the crews were probably lucky on the previous tables and not as skilled as they needed to be for qualification.*

*He noticed that even though his units employed Thru-Site Video (TSV) on preliminary ranges, the vehicle-crew evaluators (VCEs) did not appear to understand or leverage captured video in crew debriefs to enhance self-discovery learning and correct crew error. Disorganized range operations resulted in wasted live-fire time, and the overall lack of efficiency caused his battalion to extend their gunline into his sister battalion's range time. He was not looking forward to explaining this to his brigade commander, COL Hardcore. He promised himself that the next time the unit went to gunnery, it was going to be different!*

This article's purpose is to share more than four decades of experience in both the art and science of planning, preparing and executing tank and various mounted-platform gunnery. To

some, the ideas expressed in this article are not new and reflect how units prepared for gunnery prior to operations Iraqi Freedom (OIF) and Enduring Freedom. In fact, these were practices many units employed prior to operations Desert Shield and Desert Storm and during the early years of OIF, prior to the transition to counterinsurgency (COIN) training. Over time, the know-how and institutional memory for these fundamental practices faded from our noncommissioned officer (NCO) and officer corps through attrition (retirement, end-term-of-service and atrophy). To reverse this trend and improve the rate at which the mounted force resharpens its saber, we must ensure our training is tough, realistic and cost-effective.

Our Army has faced adversity many times during the course of its several-hundred-year history, and today's Army is no different. Traditional gunnery skills eroded as the Army focused on COIN, resulting in generations of officers and NCOs well trained in motorized-infantry tactics at the expense of armor/mechanized-infantry tasks,

which are gradually returning as the gunnery culture is relearned.

## Gunnery top 10

Following are my "top 10"—actions that assisted me during four decades of gunnery training. These observations are based on my own hard-earned experiences when I often failed but learned from each failure. I believe these observations can help you prepare your unit for gunnery, increase your unit's overall gunnery performance and, most importantly, create lethal crews.

1. **A hot or wet range is a precious resource that cannot sit idle.** Once granted permission to fire by Range Control, your crews should be putting rounds downrange. While crews are firing, there must be a supply of crews "waiting on deck" to begin their run as crews complete the course or in the event that a crew is directed to leave the course prior to completion of the table it is executing. As a rule, for every crew negotiating the course, there must be another crew at the



**Figure 1.** An M1A2 Abrams fires a 120mm round at a target during live-fire qualifications at the Udairi Range Complex in Kuwait April 26, 2015. (U.S. Army photo by Capt. Shaun Manley)

ready: prep-to-fire checks complete, boresighted and communications tested, standing by on the ready line.

2. **Maintain situational awareness.** If firing behind another company, coordinate with the unit to have at least a platoon's worth of vehicles arrive at the next range the day prior and offer to repay the favor at a later date. Anticipate success and position your unit to take advantage of time available. The time you gain may be needed to offset range time lost due to range fires, inoperable targetry, weather conditions, etc. Require crews identified to fire later in the firing order to monitor the admin-net (you must run a range admin net) throughput to anticipate opportunities to move forward in the firing order. This is inevitable.
3. **Set conditions for success.** Designate and empower your beachmasters early, and ensure they understand their roles. The beachmaster ensures the range is organized and efficient, and crews are where they need to be. This individual is constantly on the move among the boresight line, ready line, ammo pad, range tower and after-action-review (AAR) shack to ensure tempo is not lost. Units that fail to designate a strong beachmaster will pay a heavy price in disorganization and wasted range time – *your most precious resource*.
4. **Establish “smart” business rules.** At the completion of each crew's firing run, require the vehicle commander to report the number of rounds expended by type to the ammo pad and the tower on the admin net. Why is this important? Range regulations require the unit have accurate inventories of ammo on the ammo pad. Often ranges are shut down until the unit can generate an accurate report. Also, the unit master gunner needs to know how many rounds are available to support the refiring of engagements for unqualified crews. Whomever is designated within the unit to fill out the 2408-4 Weapon Record Data Card will

also need to know the number of rounds fired (by type) to track both gun-tube and breech-block life. The ideal time to collect this information is either when the vehicle is cleared at the completion of a run or when the last firing vehicle returns to the ammo pad when dunnage is turned in.

5. **Video feeds provided by TSV are an invaluable source of information – use it!** Live audio-video provides an inside look at crew interaction during execution of an engagement, which can help the VCE with the AAR process (see Figure 2). VCEs can determine switchology errors by the gunner or vehicle commander (VC), observe safety violations and actually observe the engagement through the gunner's or commander's sight. This provides the VCE an accurate assessment of reticle aim, range to target, ammunition and tracking of targets. More importantly, the collection of video files provides a great library from which commanders and master gunners can leverage examples of what right looks like or common mistakes as part of their VCE training program and for training new tank crews. The Army has invested a significant amount of money on these devices for a reason: they work!
6. **Mission command.** A representative from the chain of command (company commander, battalion commander, battalion command sergeant major or master gunner) should observe every main gun engagement throughout gunnery. This command presence reinforces the emphasis on gunnery to the unit and provides leadership an opportunity to conduct mission command. Should a crew miss two consecutive targets during a precision engagement, the chain of command is in a position to direct the range officer in charge to remove the crew from the range immediately to determine if the problem is mechanical or crew error. Maintenance personnel correct mechanical errors; master gunners and unit leadership correct crew-induced errors.

7. **Records management as it pertains to crews is often overlooked.** Create a folder/file for each crew and place previous gunnery scores and AAR information in the file for review. Include the crew's gunnery-skills testing data and Advanced Gunnery Training System/Bradley Advanced Training System information, as all this information provides critical information to the VCE. This folder supports the identification of trends, positive and negative, for the crew and/or the unit that can be addressed by unit master gunners and chain of command.
8. **Battlefield presence.** Similar to mission command, the battalion commander or command sergeant major should be present in the tower during crew qualification. Again, if the crews see that qualification is important to the battalion commander/command sergeant major, this reinforces the gunnery culture within the unit. Master gunners should be present in the tower to interface with VCEs and ensure they are maintaining gunnery standards. Consider recognition of crews who qualify on the first qualification run with a steak dinner from the dining facility or some other meal in their honor. Honoring a crew for a successful qualification run encourages crews to train harder, as no crew wants to fail to qualify. Crews who do not qualify on their first run will remember this and will train harder for the next qualification gunnery so they can get recognition in front of their peers. Leader vehicles (commander, executive officer, S-3, company commander, platoon leader and platoon sergeant) are always expected to qualify the first time and lead from the front by being the first crew downrange at echelon.
9. **Failing to plan is a plan to fail.** Units cannot have the attitude that all they need to do is simply show up on the range and qualify with little to no preparation time invested. Gunnery is what crews live for. If there are crews in your organization who are not excited about

gunnery and are unwilling to invest in the time required to make themselves better, maybe those personnel should consider a different military occupation specialty. Think of the training gates for gunnery as playoff games that lead to the Super Bowl of qualification gunnery. Consider awarding a trophy and/or streamers that are displayed on the unit guidon for the company and platoon who earns the highest average scores on Table VI. A company or platoon that has an unqualified crew after a Table VI qualification gunnery should be ineligible for a trophy or streamer, thus reinforcing the importance that every crew must qualify Table VI on its first attempt. Remind crews that if they are good enough, they may earn the right to represent their unit in a “best of the best” competition against other units across the Army for the title of best crew (i.e., Sullivan Cup for Abrams crews).

10. **Have fun!** Gunnery should be a positive, morale-building

endeavor your unit should enjoy because the ability to fire live ammunition is typically limited to one or two opportunities per year. Generations of crews have spent countless hours in garrison and in the field retelling gunnery “war stories,” so help your crews continue this time-honored tradition and train them well.

## Conclusion

The importance of preparing our crews for gunnery cannot be underestimated. It is those skills each crew employs during gunnery that carry over into combat. If we as leaders fail to develop lethal crews during peacetime training, we are doing a great disservice to those Soldiers, their families and the nation. When training is complete, our Soldiers need confidence in their training, confidence in their equipment and confidence in their leaders. Finally, remember that gunnery is about putting “steel on target,” and that is what the mounted force brings to the combined-arms fight. Developing lethal crews and restoring the required rigor

in our gunnery culture will ensure our formations are ready when the nation calls.

*LTG Michael Tucker commands First Army. He entered the U.S. Army as a private in 1972 and has served in a variety of leadership positions, completing his enlisted career as a drill sergeant in 3<sup>rd</sup> Basic Combat Training Brigade at Fort Leonard Wood, MO. He was then commissioned as an Armor lieutenant through Officer Candidate School. Previous assignments include commanding general, 2<sup>nd</sup> Infantry Division, and commander, 1<sup>st</sup> Brigade, 1<sup>st</sup> Armored Division, which included a deployment in support of OIF. During his 44-year career, he has commanded at platoon through division level, including tank-platoon leader; tank-company executive officer; battalion motor officer; battalion adjutant; battalion operations officer; U.S. Military Academy professor of military science; division G-3; executive officer to the commanding general of U.S. Army Europe; assistant division commander for both maneuver and*

**When evaluating using TSV, are the crews checking the following?**

<p style="text-align: center;"><b><u>Switchology</u></b></p> <ul style="list-style-type: none"> <li>√ Selected proper firing control mode?</li> <li>√ Selected proper ammo select?</li> <li>√ Gun select switch position to “safe” between engagements?</li> <li>√ Selected proper gun select switch for engagements?</li> <li>√ LRF in proper position (last or first return)?</li> </ul>	<p style="text-align: center;"><b><u>Proper engagement technique</u></b></p> <ul style="list-style-type: none"> <li>√ Scanning in 3X, 6X or 13X?</li> <li>√ Engaging in 13X?</li> <li>√ Switch back to 3X or 6X to locate other targets?</li> <li>√ Proper reticle aim (center of visible mass)?</li> <li>√ Proper tracking of moving target?</li> <li>√ Lasing to targets?</li> <li>√ Inducing proper manual lead when required?</li> <li>√ Did gunner choke target for engagement and announce range?</li> <li>√ VC using Commander’s Independent Thermal Viewer for identifying/designating targets?</li> <li>√ VC verifying proper range to target and ready-to-fire box appears before giving command of fire?</li> <li>√ Loader placing arming handle in “safe” position after misfire procedure is complete and in between engagements when VC announces ceasefire?</li> <li>√ Gunner uses TIS or BIOC sight?</li> <li>√ During machinegun engagements, did gunner conduct proper engagement technique (Z pattern)?</li> <li>√ Sensing each round?</li> </ul>
<p style="text-align: center;"><b><u>Setting conditions</u></b></p> <ul style="list-style-type: none"> <li>√ Using thermal imaging sight (TIS)/biocular (BIOC) as primary sight?</li> <li>√ Selected proper polarity (white or black)?</li> <li>√ Set battlesight range prior to engagement?</li> <li>√ Proper adjustment of reticle intensity?</li> <li>√ Proper adjustment of symbology intensity?</li> <li>√ Checking for drift?</li> <li>√ Conducting muzzle reference sensor (MRS) update as last step to preparing for next engagement?</li> <li>√ Placing M240 on mechanical “fire” and back to “safe” upon completion?</li> </ul>	<p style="text-align: center;"><b><u>Between engagements</u></b></p> <ul style="list-style-type: none"> <li>√ Crew going over next engagement?</li> <li>√ Setting conditions for next engagement?</li> </ul>

Figure 2. VCE checklist (M1A2) when using TSV.

*support; deputy commanding general of the U.S. Armor School; deputy commanding general of Walter Reed Army Medical Center; assistant surgeon general for Warrior Care Transition in the Office of the Surgeon General, Washington, DC; deputy chief of staff, operations, for the International Security Assistance Force; and assistant deputy chief of staff, G-3/5/7, Headquarters Department of the Army. Tucker's 25 years of overseas assignments and deployments include multiple tours to Germany, the Republic of Korea and operational deployments to operations Desert Shield/Desert*

*Storm, Iraqi Freedom and Enduring Freedom. His military schooling includes Armor Officer Basic and Advanced Course, Canadian Land Forces Command and Staff College, U.S. Army Command and General Staff College and U.S. Army War College. His civilian education includes a bachelor's of science degree in psychology from the University of Maryland, a master's degree in military arts and sciences from U.S. Army Command and General Staff College and a master's degree in public administration from Shippensburg University.*

## Acronym Quick-Scan

**AAR** – after-action review  
**BIOC** – biocular  
**COIN** – counterinsurgency  
**NCO** – noncommissioned officer  
**OIF** – Operation Iraqi Freedom  
**TIS** – thermal imaging sight  
**TSV** – Thru-Site Video  
**VC** – vehicle commander  
**VCE** – vehicle-crew evaluator

# Mount, Saddle, Soldier: Overcoming a Decade of Concierge Maintenance

*"First the horse, then the saddle, then the man." -old cavalryman's creed*

**by LTC Jeffrey Paine and MAJ Lance Leonard**

*It is late afternoon in March 2011 when a platoon returns to Forward Operating Base (FOB) Frontenac from a day-long security patrol throughout Shah-Wal-e-Kot in southern Afghanistan. Three of the four mine-resistant ambush-protected (MRAP) all-terrain vehicles (MATVs) move under their own power, while the second vehicle in the column uses a heavy tow bar to pull another vehicle. There is no obvious battle damage to the towed vehicle, but dark oil stains coat the exterior of the transfer case underneath the armored truck.*

*The platoon goes through the rote movements of clearing personal and crew-served weapons and moves along the graveled road to the FOB maintenance area, where the squad leader and platoon sergeant meet the battalion maintenance technician (BMT). The crews drag the powerless MATV to the maintenance shelter and detach the tow bar while the squad leader describes to the BMT what happened. The maintenance platoon takes the MATV so the platoon can complete its post-patrol operations, cleaning weapons and equipment before the Soldiers head to the dining facility for dinner. They have patrolled daily for the last 47 days and will patrol again tomorrow with the same three MATVs, plus one additional from the six assigned to the platoon to meet the four-vehicle requirement. The squad leader would prefer to have "his" MATV and offers a momentary gripe to his lieutenant over chow but shrugs it off as "just the way it is." His squad works into the night preparing the loaner truck for patrol and then beds down for the night.*

Over the past nearly decade and a half

of war, this scenario is increasingly common among our maneuver battalions<sup>1</sup> in brigade combat teams (BCTs). The operations tempo, frequency of deployments and the Army Force Generation cycle's "train/ready" phases have created very tactically sound and savvy junior leaders who develop creative solutions to problems they encounter in their deployed areas of operation. However, the optempo has also driven organizations to streamline and "outsource" maintenance operations away from maneuver platoons to maintenance platoons in the forward-support companies (FSC) augmented by contractors. Army senior leaders deliberately decided to implement this concept of support to maximize end-strength in combat forces in Iraq and Afghanistan.

The result is that junior leaders in companies have become accustomed to dropping off deadlined vehicles and equipment for routine maintenance, which often includes operator-level tasks. This "concierge maintenance" mentality – exacerbated by the availability of excess theater property and equipment, especially vehicles – allows platoons and companies greater flexibility to execute the requisite number of patrols while maintainers repair vehicles. Unfortunately, maintenance urgency only comes when a platoon is in danger of not meeting the ubiquitous four-vehicle patrol requirement.

Due to this method of maintenance, a significant portion of company-grade officers, junior field-grade officers and noncommissioned officers (NCOs) who serve as squad leaders and platoon sergeants do not understand the basic tenets of Army maintenance systems:

- Preventive-maintenance checks and services (PMCS);
- 5988-E flow;
- Command maintenance programs;

- Vehicle services; and
- Flow of repair parts.

Mechanics have occupied guard towers and entry-control points when deployed, while battalions of contractors troubleshoot and repair deadlined equipment. Therefore, Army maintenance at the company and battalion levels has become a mysterious "black box" in which broken equipment goes in and, at some indeterminate point in the future, comes out the other side fully mission capable. This is the problem. When units must maintain their own equipment without contractors, have no excess equipment and perform maintenance in a tactical assembly area (TAA) and not in an FOB, they struggle with the basics. Moreover, as units return to operating and training solely with their modified table of organization and equipment (TO&E) assets, they have exactly the amount of equipment they need. This requires a fundamental shift in thinking and operating for our junior leaders.

Recent rotations at the combat training centers (CTC) confirm this observation about maintenance systems. As the Army moved from mission-rehearsal exercises to training rotations based on the decisive-action training environment, units had to operate continuously from TAAs and battle positions, away from secure bases and fixed maintenance facilities. Platoons and companies failed to complete basic daily PMCS as evident by the number of Department of the Army Forms 5988-E turned in to the FSCs. This resulted in few Class IX parts ordered for repairs, which caused minor deficiencies to become major deadline issues as the rotation progressed.

The U.S. Army Training and Doctrine Command (TRADOC) Capability Manager-Armored Brigade Combat Team (ABCT) observed that in most cases,

5988-E Submissions												
Cycles	1			2			3			4		
TDs	0-3			4-6			7-9			10-13		
	Issued	T/I	%	Issued	T/I	%	Issued	T/I	%	Issued	T/I	%
HHC	59	0	0%	59	17	29%	59	43	73%			
SCT												
MTR												
MED												
A	25	13	52%	25	13	52%	25	0	0%			
B	21	12	57%	23	21	91%	23	20	87%			
C	25	19	76%	27			27	0	0%			
D	24	0	0%	30	23	77%	30	19	63%			
FSC	56	15	27%	56			56	11	20%			
CBT PWR	O/H	FMC	%	O/H	FMC	%	O/H	FMC	%	O/H	FMC	%
M1	28	21	75%	28	23	82%	28	26	93%	28	25	89%
M2	31	24	75%	31	26	84%	31	25	81%	31	26	84%
M1064	4	3	75%	4	2	50%	4	2	50%	4	2	50%
M1151	8	7	88%	8	8	100%	8	8	100%	8	8	100%
M978	11	9	82%	11	9	82%	11	9	82%	11	9	82%
M88	7	7	100%	7	6	86%	7	5	71%	7	4	57%

Figure 1. Turn-in rate of 5988-Es from units during a typical National Training Center (NTC) rotation and the correlation with combat power.

5988Es return to the unit-maintenance point without National Stock Numbers identified for the proper repair parts. Leaders exacerbate the problem by improperly allocating maintenance assets without enough mechanics forward to validate faults and identify repair parts.<sup>2</sup> Analysis of unit-maintenance data also reveals units are routinely unable to maintain a 90-percent operational-readiness (OR) rate, which is the Army standard. In some cases, the OR rate slipped to as low as 70 percent for the rotation.<sup>3</sup>

Commanders of brigades and battalions interviewed during their rotations at CTCs regularly discuss the difficulty in maintenance operations and its impact on maintaining combat power. Reporting from battalion commanders indicates maintenance programs suffer from poor services; overreliance on field-service representatives and logistics-assistance representatives; and an inability to comply with Army mandate programs such as the test, measurement and diagnostic equipment program. Unfortunately, the Army has few BCT sustainment systems published and enforced that incorporate now-critical procedures:

- 5988-E flow;
- Dispatching;
- “Circle X” approval;
- Controlled exchange; and
- Class IX tracking.<sup>4</sup>

After 14 years operating from FOBs in Iraq and Afghanistan, the Army now must return to expeditionary and joint operations in austere and immature theaters of operation. This makes the ability to generate and sustain combat power for high-intensity operations supremely important. The Army Operating Concept<sup>5</sup> describes an expeditionary Army capable of rapid deployment that is task-organized into a tailored combined-arms force capable of defeating threats to U.S. interests.<sup>6</sup> With that in mind, Army forces (as part of the joint force) must be able to execute across the range of military operations in austere environments.

Fully developed sustainment assets are not present in such environments. “Decentralized operations in complex environments” will be the norm.<sup>7</sup> As joint forces seize the initiative in contested regions, whether in joint forcible-entry operations or more traditional ground invasions, maneuver units will have to

operate supported by immature theater-sustainment systems. Maneuver units, down to and including platoons, will operate far away from the sustainment bases and FOBs to which we have become accustomed, living solely out of rucksacks and bustle racks. The ability of junior leaders to plan, execute and supervise operator-level maintenance and then request appropriate assets and supplies to sustain combat power is critical during high-tempo and mobile operations.

## Potential solutions

The Army should adopt solutions at several levels to address the lack of maintenance knowledge and experience in maneuver formations. In effect, we are talking about changing our organizational culture, a culture embedded and reinforced during the last 14 years of deployments and combat operations – a time when organizations and their cultures adapted to the demands placed on them and took advantage of available efficiencies, specifically surplus equipment and additional assets to maintain combat equipment and vehicles. This mindset now must change to develop and



**Figure 2. OR rates brigades maintained over the duration of their NTC rotation, Fiscal Year (FY) 2014. No unit was able to maintain a 90-percent OR rate for more than one day. In a BCT, this prevents employment of two companies' worth of firepower and reduces tactical options.**

reinforce a culture in which equipment maintenance is once again central to preparation for combat. We must implement structural changes at the organizational level, inculcate them at the institutional level through leader functional training and professional military education (PME), and reinforce them with unit-level leader-development programs. By doing this, we can prepare and develop innovative leaders to operate in conditions of uncertainty.

Changing the organizational structure of maneuver battalions would greatly improve leaders' understanding and ownership of maintenance systems and begin to affect the cultural change. As an example, the current TO&E for combined-arms battalions and cavalry squadrons assigns an Ordnance Corps lieutenant as the battalion maintenance-control officer (MCO) in the FSC. This officer, teamed with the maintenance technician and maintenance sergeant, is supposed to be the subject-matter expert on maintenance systems and procedures. Generally an ordnance lieutenant does not have adequate experience in managing maintenance systems or combined-arms maneuver to supervise a battalion

maintenance program or provide quality advice to the commander, so creating a position on the battalion staff (vice the FSC) for a maneuver-branch battalion maintenance officer (captain) could bridge this experience gap. Ideally, the officer would be a captain's-career-course graduate in the queue for company command, who is trained in staff processes and has served as a lieutenant in a maneuver platoon and company.

Working in conjunction with the

existing MCO and maintenance-tech warrant officer, this organizational solution could be a powerful catalyst for invigorating battalion-level maintenance systems as well as leader-development opportunities.

## MLMC

Merely adding an additional staff officer to the battalion staff will not reduce the knowledge gap. TRADOC should implement institutional education and training to increase leader knowledge of maintenance operations and systems. Unfortunately, this is often a slow process; Army centers of excellence can provide a more rapid solution to the problem using internal resources. Leaders throughout the Maneuver Center of Excellence (MCoE) recognize that maneuver leaders now struggle with maintenance competence at battalion level and below. That is why MCoE closely coordinated with the Ordnance School (the Army's proponent for maintenance) to address this shortfall through development of the Maneuver Leader's Maintenance Course (MLMC).

This course focuses on maintenance at battalion level and below, using hands-on and how-to methodology. By

focusing on maneuver leaders, MCoE demonstrates maintenance is not just the job of the mechanic/maintainer; the leader who owns the equipment is ultimately responsible. Competent maneuver leaders who understand and can supervise field maintenance in their formations will provide units capable of employing their combat systems, which gives their brigade and/or battalion commander increased tactical flexibility.

MLMC develops the maintenance and logistics competencies of maneuver leaders by focusing on three areas: maintenance fundamentals, maintenance information systems and tactical maintenance planning.

The maintenance-fundamentals section of the course teaches maneuver leaders how to manage maintenance systems within the battalion. Leaders learn such topics as:

- Effective command maintenance;
- Managing programs such as the Army Oil Analysis Program;
- Implementing standard operating procedures; and
- Multiple approaches to conducting maintenance services.

Leaders then move on to maintenance information systems. This block of instruction gives leaders the tools and skills to take full advantage of information systems to maintain combat systems. This section covers the use of Global Combat Support System-Army, the Non-Mission-Capable Report (O26) and compliance with Army-level maintenance messages.

The final block of instruction provides a structured approach to incorporating maintenance operations into tactical planning. This section covers echeloning maintenance assets and planning considerations in offensive and defensive operations.

At the course's conclusion, leaders will have the knowledge to properly train Soldiers on crew and operator field-level maintenance tasks and effectively maintain combat-power-projection platforms to sustain land-warfare dominance capability.

Maneuver leaders should also receive training on maintenance fundamentals through PME. Newly commissioned



lieutenants need to learn the basics of how best to supervise their NCOs and Soldiers in conducting PMCS and operator-level maintenance and repairs. NCOs who attend the Advanced Leader's Course and Senior Leader's Course should receive similar training.

Captains attending the Maneuver Captain's Career Course should gain a broader understanding of maintenance management as a company commander and as a battalion staff officer, with some familiarization in maintenance information systems. They should also be able to apply basic tactical-planning considerations through the military decision-making process in planning battalion and brigade operations. Field-grade officers and sergeants major should be offered (and strongly encouraged to accept) electives that provide them battalion-level-and-above understanding of maintenance systems. This should happen at the

Command and General Staff Officer's Course and the U.S. Army Sergeants Major Academy as they prepare for duty as battalion operations/executive officers and command sergeants major, respectively. Finally, battalion and brigade commanders should integrate maintenance-leader training into their unit leader-development programs to sustain and reinforce the education received through MLMC and PME.

## Summary

Fourteen years of constant combat and contingency operations have eroded our Army's ability to maintain our own equipment and generate combat power in our companies and battalions. Our senior leaders prioritized resources to maximize combat forces while fighting in two theaters of operation. They made the best use of contracted support to do it. As the Army transitions away from static, fixed-base

deployments and prepares to fight as an expeditionary ground component of the joint force, we must now ensure our leaders are capable of maintaining their equipment with their organic assets to generate combat power. Through re-examining and changing our battalion structures, training leaders in functional courses like MLMC and PME, while reinforcing these skills through solid leader-development programs, the maneuver force will be better able to fight and win in a complex world.

*LTC Jeff Paine commands 1<sup>st</sup> Squadron, 16<sup>th</sup> Cavalry, Fort Benning, GA. Previous assignments include division chief of operations, 4<sup>th</sup> Infantry Division, Fort Carson, CO; battalion executive officer, 2-8 Infantry, 2<sup>nd</sup> ABCT, 4<sup>th</sup> Infantry Division, Fort Carson and Kandahar, Afghanistan; battalion S-3, 2-8 Infantry, 2<sup>nd</sup> ABCT, 4<sup>th</sup> Infantry Division, Fort Carson; tactical officer, U.S. Military Academy (USMA), West Point, NY; and cavalry troop and headquarters troop commander, 1<sup>st</sup> Squadron, 4<sup>th</sup> Cavalry, 1<sup>st</sup> Infantry Division, Schweinfurt, Germany, and Ad Duluiyah, Iraq. His deployments include Bosnia-Herzegovina (February-September 1999), Operation Iraqi Freedom (OIF) II (February 2004 through February 2005) and Operation Enduring Freedom 11-12 (May 2011-May 2012). LTC Paine's military schooling includes Command and General Staff College, Armor Captain's Career Course, Cavalry Leader's Course and Armor Officer Basic Course. He holds a bachelor's of science degree in aerospace engineering from USMA and a master's of arts degree in organizational psychology and leader development from Columbia University.*

*MAJ Lance Leonard is the brigade operations officer, 316<sup>th</sup> Cavalry Brigade, U.S. Army Armor School, MCoE, Fort Benning. Previous assignments include operations officer, 1<sup>st</sup> Squadron, 16<sup>th</sup> Cavalry Regiment, Fort Benning; executive officer, 4<sup>th</sup> Squadron, 7<sup>th</sup> Cavalry Regiment, 1<sup>st</sup> ABCT, 2<sup>nd</sup> Infantry Division, Camp Hovey, Republic of Korea; operations officer, 4<sup>th</sup> Squadron, 7<sup>th</sup> Cavalry Regiment, 1<sup>st</sup> ABCT, 2<sup>nd</sup> Infantry Division, Camp Hovey; division maneuver planner, 2<sup>nd</sup> Infantry Division, Camp Red Cloud, Republic of Korea;*

## MLMC timeline

The 2016 and 2017 schedule for MLMC:

- Dec. 7-18, 2015
- Feb. 22-March 4, 2016
- May 2-13, 2016
- June 13-24, 2016
- Aug. 15-26, 2016
- Oct. 3-14, 2016
- Dec. 5-16, 2016
- Feb. 6-17, 2017
- May 1-12, 2017
- June 19-30, 2017
- Aug. 14-25, 2017
- Oct. 9-20, 2017
- Dec. 4-15, 2017

**Note:** All dates are pending due to scheduled training holidays and can be moved to the left or right.

MLMC was developed to address the knowledge and skill gaps of junior leaders in the fundamentals of Army maintenance systems and maintenance programs. Without the skills addressed in the course, leaders have difficulty building and sustaining combat power in combined-arms maneuver in an expeditionary operating environment as part of a brigade combat team.

MLMC is intended to develop senior lieutenants and captains for the battalion maintenance officer position reflected on the current K-series tables of organization and equipment. MLMC further prepares junior officers for positions of increased responsibility and benefits the maneuver force and Army as a whole.

MLMC is not in the official Army Training Requirements and Resources System reservation program at this time. Interested officers should coordinate directly with 316<sup>th</sup> Cavalry Brigade.

and Interagency Fellow at the National Geospatial Intelligence Agency, Springfield, VA. He deployed multiple times to Iraq for OIF I (2003-2004), OIF III (2006-2006) and OIF V (2007-2008). His military schooling includes the Command and General Staff College, Armor Maneuver Captain's Career Course, Scout Platoon Leader's Course and the Air Assault Course. He holds a bachelor's of science in degree in Economics from USMA and a master's of arts degree in business administration-entrepreneurship and innovation management from Portland State University.

## Notes

<sup>1</sup> This phenomenon is not limited solely to maneuver battalions but is common throughout all types of formations. The authors are writing from their own experiences in maneuver battalions.

<sup>2</sup> TRADOC Capability Manager-ABCT and Reconnaissance semi-annual report, September 2014.

<sup>3</sup> Personal correspondence with CPT Christina Shelton, Goldminer battle-staff analyst, NTC Logistics Group, Jan. 22, 2015.

<sup>4</sup> Ibid.

<sup>5</sup> TRADOC Pamphlet 525-3-1, *The U.S. Army Operating Concept: Win in a Complex World*.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

## Acronym Quick-Scan

**ABCT** – armored brigade combat team

**BCT** – brigade combat team

**BMT** – battalion maintenance technician

**CTC** – combat training center

**DA** – decisive action

**FOB** – forward operating base

**FSC** – forward-support company

**FY** – fiscal year

**MATV** – MRAP all-terrain vehicle

**MCoE** – Maneuver Center of Excellence

**MCO** – maintenance-control officer

**MLMC** – Maneuver Leader's Maintenance Course

**MRAP** – mine-resistant ambush-protected

**NCO** – noncommissioned officer

**NTC** – National Training Center

**OIF** – Operation Iraqi Freedom

**OR** – operational readiness

**PMCS** – preventive-maintenance checks and services

**PME** – professional military education

**SBCT** – Stryker brigade combat team

**TAA** – tactical assembly area

**TD** – training day

**TO&E** – table of organization and equipment

**TRADOC** – (U.S. Army) Training and Doctrine Command

**USMA** – U.S. Military Academy

# Forward-Support Company Employment in a Decisive-Action Environment

by LTC C.J. King Jr. and  
MAJ Chris Dempsey

Forward-support company (FSC) employment is a topic that emerges frequently, particularly as brigades approach combat training center (CTC) rotations and begin to examine how freedom of maneuver and momentum can best be maintained over ground lines of communication (LOC). The 2<sup>nd</sup> Armored Brigade Combat Team's (ABCT) most recent National Training Center (NTC) rotation made one thing crystal clear to both maneuver and logistics commanders: in most environments, under most conditions, support efficiency is maximized when most of the FSC's distribution assets along with a mission-command node (essentially the battalion trains, which many still refer to as the field-trains command post (FTCP)) are co-located in the brigade-support area (BSA) with the brigade-support battalion (BSB).

## Problem

While Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion*, states FSCs are assigned to the BSB and may be attached to or placed under operational control of maneuver units for short durations, many brigade combat teams (BCTs) arrive at NTC with FSCs already attached to or already under opcon of maneuver units well before the rotation. Given this relationship, the BSBs sometimes struggle to communicate with FSCs; are not fully aware of FSC personnel strengths and weaknesses; do not fully understand FSC voice and digital communication challenges; and lack clarity on FSC training proficiency or the FSC's ability to manage maintenance for its supported unit.

Perhaps most importantly, supported units sometimes view FSCs as subordinate units and dictate the FSC's employment, preventing FSC representation in the BSA, regardless of the BSB's

concept of support. As a result, communication challenges, situational understanding and support inefficiency often emerge when exposed to the slightest friction. Simple functions such as logistics-status (LOGSTAT) submission and logistics-synchronization (LOGSYNCH) meetings are often seemingly impossible endeavors; management of liquid logistics (fuel and water) across the BCT suffers gaps; and brigades often culminate very early in the fight due to sustainment shortfalls rather than due to gaps in intelligence, communication, fires or any of the other warfighting functions (WfF). In short, brigades are often unable to maximize training on other WfFs simply due to poor logistics planning and the BSB's inability to effectively integrate FSCs into the concept of support.

To be clear, the purpose of this article is not to advocate for a specific command or support relationship between FSCs and maneuver battalions, as ATP 4-90 and Field Manual 6-0, *Commander and Staff Organization and Operations*, already provide doctrinal guidance to commanders regarding options on this subject. However, regardless of the command or support relationship employed, taking deliberate steps to improve communication and reinforce relationships between the BSB and the FSCs while in garrison is absolutely a prudent and necessary measure that will lead to efficiencies during a CTC rotation or a deployment.

While FSCs were attached to supported battalions in our own brigade well prior to NTC, as our rotation approached, maneuver and logistics commanders and planners analyzed how we could best support a brigade movement-to-contact over extended LOCs. Given that the BSB's distribution company was not robust enough to execute daily tactical convoy operations in support of six independent battalions, it became clear the best way to support

most of our battalions would be to retain a portion of each unit's trains in the BSA and push the combat-trains command post (CTCP) along with each battalion's unit maintenance-collection point (UMCP) forward. By doing so, the BSB could employ its distribution company primarily for supply-point distribution, which maximized its capability to receive, store and issue one day's worth of commodities for the BCT. This model provided the BSB with flexibility to conduct up to two independent resupply operations forward daily, either in the form of a standard or emergency-resupply logistics package (LOGPAC) when needed, or in the form of a forward logistics element (FLE).

We saw a marked improvement in direct communication among the FSC commanders, our S-3, support-operations (SPO) officer and the BSB commander as our NTC rotation approached. FSC commanders became increasingly aware a portion of their trains would be co-located with the BSB. As such, the BSB became much more aware of FSC personnel and equipment limitations; far more informed and able to provide effective advice on logistics matters unique to each supported battalion; and better armed to immediately address leadership and equipment capability gaps within each organization. As a result, our brigade overcame many issues before our NTC rotation. For issues not fully addressed prior to our rotation, we determined exactly where we could assume risk and where we needed to surge logistics effort to ensure the BCT's momentum and its commander's freedom of maneuver during movement-to-contact.

We would be remiss if we did not point out that two battalions retained control of their entire FSC throughout our decisive-action rotation; in one case, a unit reverted to dated doctrine and employed a combined-arms BSA

concept with the FTCP, CTCP and UMCP co-located far forward. The other unit simply pulled its trains out of the BSA, pushed them a few kilometers forward on the battlefield and pushed supplies from its trains to its CTCP and companies forward.

While our brigade was ultimately very successful from a logistics perspective, tailoring support to those two units reinforced that the BSB would be extremely challenged to support more than two complete FSCs forward at any given time, given the limitations of its distribution company. Simply put, without control over disposition and employment of the FSCs, the BSB and its distribution company is not designed, manned or equipped to push a brigade's worth of requirements forward of the BSA on a daily basis, particularly when the BCT has enablers (additional consumers) attached. Unfortunately, that is exactly how many units attempt to support brigade requirements. Contrary to popular belief, the BSB does not exist simply to resupply the FSCs; instead, the FSCs and their distribution assets exist to enable the BSB to extend operational reach to support and resupply the brigade.

To be completely transparent, the method our brigade used very successfully during Rotation 15-06 requires FSCs to co-locate a portion of their trains along with a mission-command node at the BSA; draw commodities from the BSA; push supplies forward to logistics release points (LRPs); resupply platforms at the company trains; and return to the BSA to synchronize logistics and set conditions for future requirements. This technique works exceptionally well when the brigade is in defense or operating over short- to medium-range LOCs of 25 kilometers or less. However, it cannot be sustained for long durations over extended LOCs (greater than 25 kilometers). To do so requires the BSA to either jump forward – thereby reducing the ground LOC to something more manageable for the FSC to negotiate – or risk overextension and set conditions for massive echelons-above-brigade (EAB) backhaul by pushing multiple (more than two) convoys from the BSB's distribution company daily.

## A way

While we do not have all the answers

– and what worked for our brigade may not work in all situations – what follows is our honest assessment of how the BSB's core companies and FSCs might be employed to maximize the sustainment WFF within most BCTs in most situations.

First, the BSB should have a formal, established relationship with the FSCs, regardless if FSCs are attached to maneuver units for short or longer durations. At the command level, this means FSC commanders clearly understand their logistics professional development and guidance for employment comes from the BSB commander, thereby preventing them from seeing their companies as subordinate to the maneuver battalions they support. At the staff level, this means FSCs communicate frequently with the BSB's SPO and actively participate in key planning and coordination meetings, including LOGSYNCH and the brigade maintenance meeting.

Second, in nearly every instance, maneuver units should co-locate a portion of their battalion trains (with a competent leader and most of the FSC's distribution assets) inside the BSA while co-locating their CTCP, UMCP and battalion aid station (BAS) forward in their unit area. Doing so ensures the supported unit has a strong, credible proponent in the BSA who presumably will stop at nothing to make sure his/her unit's needs are met.

This also has the following benefits:

- It eliminates the voice and digital communication issues often present between BSBs and FSCs;
- It enables a true and far more accurate and robust logistics common operating picture;
- It ensures some logistics capability and most of its maintenance and medical assets are located as far forward as possible;
- It ensures the BSB has organic distribution-company assets on hand to receive and temporarily store commodities as EAB LOGPACs arrive at the BSA;
- It increases security and force protection for the FSC; and
- It enables the BSB's distribution company to provide up to two well-planned, well-resourced, independent LOGPACs daily if required. These two elements could be standard LOGPACs to units unable to co-locate their trains in the BSA, emergency resupply operations, FLEs or any combination.

Third, each brigade should plan and execute a logistics leader-development program, followed by a logistics exercise (LOGEX) – ideally conducted on terrain that enables doctrinal distances between support areas – to build foundational logistics competence within the BCT. The former creates shared understanding and expectations on how BCT logistics and medical support will be executed. The latter



**Figure 1. 299<sup>th</sup> BSB's BSA setup during NTC Rotation 15-06 at Fort Irwin, CA. Depicted in the photo are elements from all four core companies and four of the six FSCs supporting 2<sup>nd</sup> ABCT, 1<sup>st</sup> Infantry Division. (Photo by Eagle (Aviation) Team pilot, NTC Operations Group)**



**Figure 2. LTC C.J. King, 299<sup>th</sup> BSB’s commander, explains LRP operations to logistics and maintenance representatives from units across Fort Riley. Before its NTC rotation, 2<sup>nd</sup> ABCT, 1<sup>st</sup> Infantry Division, executed a robust LOGEX demonstration for leaders, emphasizing the functions, placement and capabilities of critical logistics nodes across the BCT footprint. (Photo by COL Robert A. Law)**

provides a visual and mental frame of reference for each logistics leader, maintenance manager and medical representative when considering how best and where to best employ LRPs, ambulance exchange points, trains, UMCPs, BASs, the BSA and the like.

In 1<sup>st</sup> Infantry Division at Fort Riley, our former commanding general, MG Paul Funk, provided guidance, time and space for both events prior to our NTC rotation, and we were able to capitalize on Fort Riley’s robust capability to support a BCT-level movement-to-contact operation to demonstrate these support functions while the BCT simultaneously conducted gunnery and company-level live-fire exercises throughout the training area. By positioning elements of 1<sup>st</sup> Infantry Division’s Sustainment Brigade in the logistics support area (LSA) at Smoky Hill Army Airfield near Salina, KS (about 90 kilometers from Fort Riley); deploying 2<sup>nd</sup> ABCT elements throughout Fort Riley’s large northern training area; and positioning the BSA in the southern training area, we were able to extend LOCs to meet or exceed doctrinal distances between support areas and LRPs.

The results were undeniable: leaders, maintenance managers and medical personnel at all levels quickly understood how and when to report LOGSTATs, LOGSYNCH and brigade maintenance meeting requirements. They also knew how to execute LRPs, time- and distance-planning factors, and what various logistics nodes look like and consist of in terms of capability. While time- and resource-intensive, the foundational competence and logistics understanding these two events built across our formation cannot be overstated.

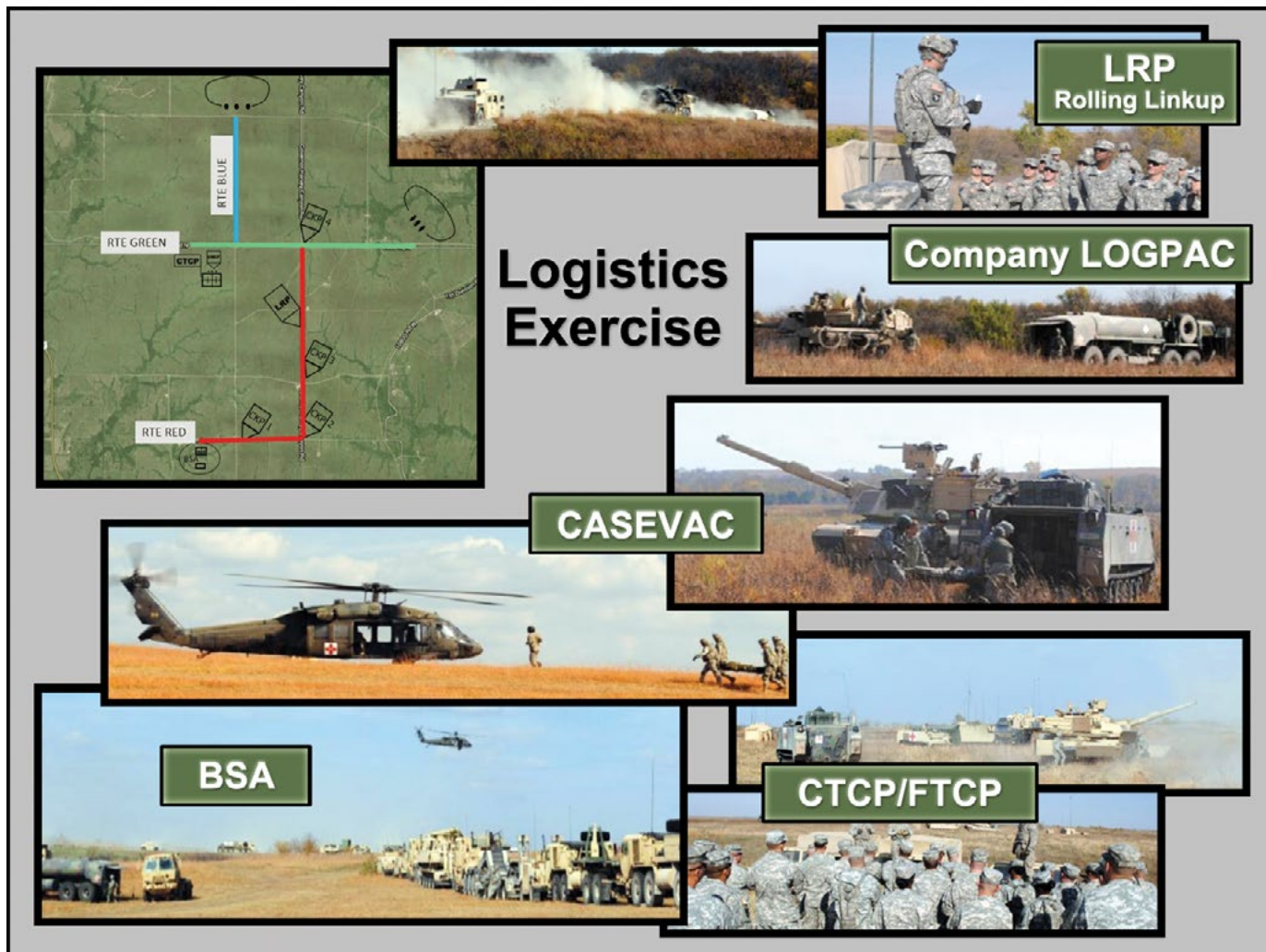
Fourth, every unit in the BCT must understand the importance of a LOGSTAT. While multi-page, complex LOGSTATs are a method, simple and to-the-point LOGSTATs designed to provide just enough detail to ensure that Class I (food and water), Class IIIB (fuel), Class IIIP (petroleum products), Class IV (barrier material) and Class V (ammunition) requirements are known and understood more than 24 hours out is often far less laborious and far more effective. Also, ensuring the entire BCT understands what *green* (greater than 75 percent), *amber* (50 percent to 75 percent), *red* (25 percent to

50 percent) and *black* (less than 25 percent), or GARB, means is important. The whole BCT also needs to know when cross-leveling within organizations is appropriate rather than calling for an emergency resupply and why that’s critical; it minimizes the number of unplanned (emergency) missions that can desynchronize the BCT’s logistics plan. Keeping those definitions the same for all classes of supply is highly recommended, and it simplifies reporting as well.

Fifth, units must plan and execute LOGSYNCH meetings with appropriate players over appropriate mediums well before a CTC rotation or combat deployment. While LOGSYNCH players can vary, there is no substitute for “representation by committee” when time and location allow; having the battalion executive officer, logistics officer (S-4) and/or FSC commander represent the supported unit at these meetings virtually ensures all friction points will be identified and deconflicted with the SPO. Also, executing the meeting over multiple mediums – face-to-face, Defense Connect On-line, frequency-modulation radio, Joint Capabilities Release Chat or Secure Voice-Over-Internet Protocol – ensures the unit not only has a primary, alternate, contingency and emergency communication plan, but it also sets conditions for those mediums to be sequentially reverted to and employed should the need arise.

It is important to note that co-locating trains in the BSA enables successful LOGSYNCHs, maintenance meetings and sustainment rehearsals, as there is no substitute for face-to-face communication. Doing so negates any potential voice or digital connectivity challenges so often experienced at the CTC and tactical-operations center and tactical command posts forward of the BSA. On the flip side, any risk maneuver commanders might assume by placing FSC elements in the BSA is marginal at best, with heavy FSC representation in the CTC, maneuver commanders retain the ability to communicate quickly and efficiently with supporting elements.

Finally, when most or all these conditions are met, the BSB should take a far more active role in helping maneuver



**Figure 3. Concept of the LOGEX.** While the BCT simultaneously conducted gunnery and company-level live-fire exercises throughout the training area, 1<sup>st</sup> Infantry Division's Sustainment Brigade positioned elements in the LSA about 90 kilometers from Fort Riley; deployed 2<sup>nd</sup> ABCT elements throughout Fort Riley's large northern training area; and positioned the BSA in the southern training area, extending LOCs to meet or exceed doctrinal distances between support areas and LRPs.

commanders shape maintenance plans for each supported battalion within the BCT. While BSBs stay busy managing organizational maintenance for core companies, NTC quickly reinforces that the more combat power generated across the formation, the more combat-effective the BCT is, which results in less Class IX (parts), Class IIIP (petroleum products) and emerging distribution requirements. This ultimately benefits the distribution company and the FSCs. In other words, by taking more ownership in a supported units' maintenance program, the BSB can directly help the BCT while indirectly helping itself simultaneously.

In summary, as logisticians and BCT logistics/maintenance managers, our job is to ensure our concept of support

and the sustainment WfF enable the BCT's momentum and freedom of maneuver. Given the complexity of this task and the personnel and equipment required to achieve success, co-locating a portion of each FSC's trains in the BSA when ground LOC distances are negligible is a critical measure to that end. Also, employing some or all of the recommendations cited in this article may help units who struggle with development and execution of their maintenance plans.

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*strategic-initiatives officer, Officer Personnel Management System Task Force, HRC, Fort Knox; logistics observer/controller/trainer (Goldminer Team), NTC Operations Group, Fort Irwin, CA; and executive officer, 610<sup>th</sup> BSB, Fort Riley, KS. LTC King's military schooling includes Intermediate-Level Education (ILE), Joint Course on Logistics, Support Operations Course, Combined Logistics Captain's Career Course, Combined-Arms Services Staff School, Bradley Fighting Vehicle Commander's Course, Infantry Officer Basic Course and Ranger, Air Assault and Airborne schools. He holds a bachelor's of science degree in criminology from the University of Missouri-St. Louis and a master's of science degree in administration from Central Michigan University.*



**Figure 4. Battalion-level logistics planners and managers from across 2<sup>nd</sup> ABCT, 1<sup>st</sup> Infantry Division, conduct a face-to-face LOGSYNCH meeting at NTC. Standing is CPT Sean A. McFarling, 299<sup>th</sup> BSB's medical planner. At the table, left to right, are CPT Joseph M. Bower, commander, Delta Company, 299<sup>th</sup> BSB; SFC Michael A. Lewis and CPT Bobby T. Hundemer, both from Headquarters and Headquarters Company, 299<sup>th</sup> BSB; and SFC Damon K. McCullough, Alpha Company, 299<sup>th</sup> BSB. (Photo by SGT Jin Nakamura)**

*MAJ Chris Dempsey is the surveillance officer, J33 (Joint Staff), Pentagon, Washington, DC. Previous assignments include brigade executive officer, 2<sup>nd</sup> ABCT, 1<sup>st</sup> Infantry Division, Fort Riley; brigade operations officer, 1<sup>st</sup> ABCT, 1<sup>st</sup> Infantry Division, Fort Riley (held this position during NTC Rotation 14-06); squadron operations officer, 4-4 Cavalry, 1<sup>st</sup> ABCT, 1<sup>st</sup> Infantry Division, Fort Riley; deputy chief, G-3 Future Operations, 1<sup>st</sup> Infantry Division, Bagram, Afghanistan; and instructor, Department of History, U.S. Military Academy, West Point, NY. His military*

*schooling includes distance-learning ILE, Combined-Arms Service Staff School, Armor Captain's Career Course, Scout Leader's Course, Armor Officer Basic Course and Air Assault School. He holds a bachelor's of science degree in economics from the U.S. Military Academy and a master's of arts degree in history from North Carolina State University. His awards and decorations include the orders of St. George (bronze), St. Barbara and St. Michael; two awards of the Bronze Star Medal; and two awards of the Meritorious Service Medal.*

## Acronym Quick-Scan

**ABCT** – armored brigade combat team  
**ATP** – Army techniques publication  
**BAS** – battalion aid station  
**BCT** – brigade combat team  
**BSA** – brigade-support area  
**BSB** – brigade-support battalion  
**CTC** – combat training center  
**CTCP** – combat-trains command post  
**EAB** – echelons above brigade  
**FLE** – forward logistics element  
**FSC** – forward-support company  
**FTCP** – field-trains command post  
**GARB** – green, amber, red, black  
**HRC** – Human Resources Command  
**ILE** – Intermediate-Level Education  
**LOC** – lines of communication  
**LOGEX** – logistics exercise  
**LOGPAC** – logistics package  
**LOGSYNCH** – logistics synchronization  
**LOGSTAT** – logistics status  
**LRP** – logistics release point  
**LSA** – logistics support area  
**NTC** – National Training Center  
**SPO** – support operations  
**UMCP** – unit maintenance-collection point  
**WfF** – warfighting function

# Training to Win in a Complex and Uncertain World

by **BG Joseph M. Martin,**  
**COL David S. Cannon** and  
**LTC Christopher W. Hartline**

*(Authors' note: This article creates a protagonist, the motivated 1<sup>st</sup> Brigade operations officer, MAJ John J. Planswell. Planswell's experiences mirror those of the lieutenant in MG Sir Ernest Dunlop Swinton's **The Defence of Duffer's Drift**. In that book, the lieutenant learns about Boer War infantry tactics through a series of dreams. In keeping with Swinton's style, Planswell's dreams help him understand how he can better use home-station training resources to prepare for a National Training Center (NTC) rotation. These realizations offer the Army training community thoughts and best practices on maximizing the capabilities provided by the Integrated Training Environment (ITE). The best practices identified in this article provide leaders insights on ways to leverage the resources at home station and the ITE to better train agile and adaptive leaders. The ITE provides leaders the ability to conduct complex, realistic training that represents the operating environment (OE) where Soldiers and leaders confront a myriad of dilemmas they must address. Three major lessons are offered: 1) Units must begin planning for the integration of training enablers early in the development to the unit-training plan (UTP). Army training aids, devices, simulators and simulations (TADSS) provide commanders the ability to represent the complex OE at home station. 2) The ITE provides leaders the ability to execute multi-echelon. 3) The execution of a gated-training concept, a progressive and iterative training methodology, provides an effective mechanism for the creation of a rich collection of experiences that can be called upon to guide decision-making. Finally, the article infers the importance of training overmatch as an enabling capability in the Army's operating concepts.)*

*"Tested or untested, today's Soldiers from the greenest scout to the most*

*senior noncommissioned officer know whether or not they and their unit are tactically and technically proficient." – GEN Robert W. Cone, **Leadership: The Warriors Art***

## First dream

I awoke in despair from a restless night's slumber. How could it be? Reflecting on my favorite movie, *Patton*, how could it be that American forces performed so poorly at the Battle of Kasserine Pass? While the defeat at Kasserine provided the segue for the dramatic entrance of my hero, GEN George S. Patton Jr., there had to be something more. Historians accurately recorded the event, but is there something more? Maybe the lesson is that men of superior physical ability and élan such as my hero are not bested by technology and training.

As this thought crosses my mind, I notice my son's Captain America figure lying on the floor, vacant eyes staring up. He lies there like a Soldier lying on the field of battle. Refocusing on the Pass, it seems to me that Germany's Field Marshal Erwin Rommel and the Afrika Korps had superior tactical command and operational employment – that much is obvious – but there had to be something more.

Momentary relief was gained through a brisk and demanding physical-training session. The staff completed the weekly five-mile run at record pace. However, the exertion provided only temporary respite. The disturbing thoughts returned, and I began to ponder their meaning. I reassured myself that the stoic countenance and name of John J. Planswell – possessing the

attributes and prowess of a true-to-life action figure – would one day be command-photo material. With proven talent and some luck, I am certain to rise to positions of increased command responsibility. If only I could obtain the meaning to that dream. In the meantime, I will have to content myself with finalizing and executing the 1<sup>st</sup> Brigade Combat Team's (BCT) training strategy in support of its upcoming decisive-action training environment (DATE) rotation at NTC.

It's Feb. 3. I am excited; I begin the day's work by reviewing the brigade's UTP to ensure it accounts for all subordinate units. No time to waste: we are eight weeks out; Red Cycle taskings end in eight weeks. We must make the most out of every training day, especially our live training events. Today we brief Hammer 6 on the result of months of planning. We forecasted all necessary resources and training enablers, integrating them into a complete training plan that optimizes training at the Soldier and small-unit level. We reserved every training area, enabler and range on Joint Base Trained and Ready (JBTR). We packed the schedule with activity, creating as many moving parts and opportunities as possible to create a complex training environment. Commanders and their units will be training all over the installation.

We began our work on the UTP months ago. We started with a review of our training objectives, key collective tasks (KCT) derived from our unit mission-essential task list. These tasks were developed over the preceding months through mission analysis and dialogue

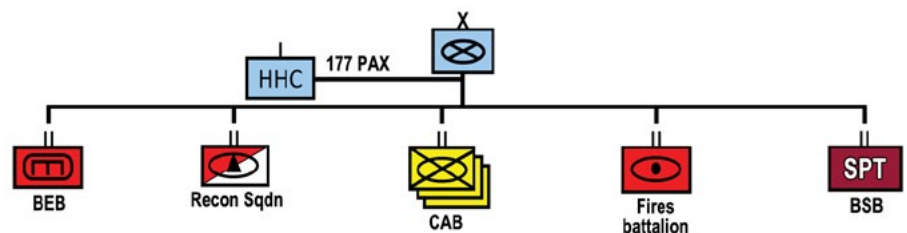


Figure 1. 1<sup>st</sup> BCT modified table of organization and equipment (MTOE).



with the BCT commander (Hammer 6) and the BCT command sergeant major (Hammer 7).

Following the mission-analysis brief, the commander said, "It is my intent that we leverage the live, virtual, gaming and constructive environments to replicate the complex OE and a tough opposing force (OPFOR). Emphasize leader and operator mission-command information-system proficiency to increase the agility and lethality of units but don't do so at the expense of team cohesion – we fight and win as a team. Finally, aid commanders at each echelon in developing their mission-command ability and the capacity for timely and decisive decisions based on intent."

Now that we have concluded the plan and its associated schedule, we realize we will never be able to get more than a battalion-sized maneuver space. We will have to adjust to and work with what we have. It is probably just a minor issue. In the end, competent battalion commanders and well-trained Soldiers and leaders will carry the day at NTC. Therefore, while we have to cycle units through training areas, and we do not have the ability to replicate all aspects of the DATE's complex OE, I am confident that the realism provided by live training will pay dividends in the end.

Besides schedule conflicts, other nasty constraints are collaborating to confound my ability to resource training for our three maneuver task forces – a fires battalion, a brigade-support battalion (BSB) and our brigade engineer battalion (BEB) – and associated brigade troops (the military-intelligence (MI), signal and military-police companies). Without adequate training space, how do we conduct integrated training at echelons above task force (TF)? The available terrain is not enough and does not provide the complex urban areas we will require to train the BCT. This will require TFs to cycle through training areas, limiting the development of company-level mission-command proficiency. The teams do not get the number of repetitions required to gain proficiency. What's more, this precludes the combined training of brigade enablers and our TF formations.

## 1<sup>st</sup> Brigade KCTs

1. Conduct mission command (Army Tactical Task (ART) 5.0)
2. Conduct offensive operations (ART 7.0)
3. Conduct tactical tasks (ART 7.5)
4. Integrate fires (ART 3.1)
5. Conduct FPoL (ART 1.2.8.1)
6. Perform intelligence, surveillance and reconnaissance (ART 2.3)
7. Conduct intelligence support to targeting and information superiority (ART 2.4)
8. Provide logistics support (ART 4.1)

**Figure 2. Extract from 1<sup>st</sup> Brigade training objectives.**

We will address these concerns during our three-day BCT command-post exercise (CPX). This will be enough to ensure we arrive at NTC in top shape. Confident of this fact and my astute skill, I walk down the street to the support-battalion headquarters.

I arrive and review their training plans; things are clicking. Our initial discussion turns into a monologue by the support-operations officer, MAJ Sustainright – a tired treatise on the importance of incorporating logistics operations into the total training plan. My only reply is to point out Task 8. The brigade staff will address the integration of brigade logistics. Nevertheless, he will ensure that the support battalion's training plan addresses its unique mission task requirements. Live maneuver training cannot be jeopardized by lengthy sustainment training. There are enough external constraints inhibiting our training. We cannot afford to exacerbate the situation.

Over the next six months, I observe battalions and companies employing the full set of TADSS available at home station. Hammer 6 and I observed an after-action review (AAR) for 1<sup>st</sup> TF's field-training exercise (FTX). The TF employed instrumentable Multiple Integrated Laser Engagement System (MILES) gear to train tactical maneuver

at the TF-and-below level. The Home-Station Instrumentation Training System (HITS) kept track of the engagements and casualties during the training event. Afterward, the system provided an AAR capability to assist leaders in determining "what happened" and "why." We spent a few hours at the Mission Training Complex (MTC) observing company and platoon maneuver training using the Close Combat Tactical Trainer (CCTT). As an added bonus, we visited with fire-support teams training through the Call-for-Fire Trainer (CFFT). By my score, we are firing on all cylinders at each echelon. We are addressing or will address every one of the KCTs. We are achieving training objectives.

Outrageous. Apparently, during what Sustainright characterized as a "chance encounter," the support-battalion commander voiced "concern" over the lack of integration among the BCT, its supporting enablers and the support battalion to Hammer 6. Nonsense. Sustainright and I spoke. He agreed that he would determine and execute the best method for integrating his companies into battalion events. This portends trouble.

**T**o say that we experienced challenges during our CPX would be an understatement. The simulation was running in the MTC, and we established the brigade tactical-operations center (TOC) on the concrete pad behind the MTC. That said, none of us could remember when any of us had previously set up the TOC. In hindsight, my remarkably liberal timeline was exceptionally aggressive. As day turned to night, plastic panels became the stone of a crucible, crushing will and soul of the headquarters staff. The battalions had set out their Deployable Rapid-Assembly Shelter tents with shells of the staffs to control their respective company training events (force-on-force, FTXs and live-fire exercises). However, I had never forced the establishment of brigade TOC and execution of a knowledge-management plan and our TOC standard operating procedure (SOP). The brigade staff contained many newly minted Command and General Staff College (CGSC) graduates

and a batch of recently arrived captains from their respective career courses, anxiously awaiting company command. As we concluded the CPX, now approaching our leadership-training-program exercise, my concerns regarding the BCT's ability to execute mission command grew as I began to appreciate the staff's inexperience and lack of training. We clearly lacked cohesion as a complete staff. We had no idea how to integrate operations with the TF staffs, let alone how to synchronize the actions of key enablers. Our NTC rotation is going to be rough.

**T**he BCT returned from its culminating training exercise (CTE) at NTC exhausted and disappointed. The rotation in summary: While we were initially encouraged by the adroit professionalism and cheerful mannerisms of our observers/controllers/trainers, their assurance of "better every day and much better by the end of rotation" fed growing self-awareness. That newfound awareness was rarely pleasant. It became clear that we had not sufficiently maximized our home-station training in preparation for our rotation. We came to realize that trained units required trained and ready staffs proficient in the exercise of mission command and disciplined execution of SOPs. Although the companies' training was accomplished to standard, and even though they operated well as teams, they rarely trained together during the train-up as part of a TF. Frankly, this lack of iterative training at TF level left companies unprepared for the burdens and simultaneous demands pressed upon them by the DATE. The high-fidelity training environment at NTC presented many competing and conflicted demands. Leaders and their teams were not anticipating threat actions and shaping the OE. They were reacting to the enemy and bending under the pressure.

For their part, the staffs were lagging indicators, providing factual reports – not synthesized staff analysis – that would enable decision-making and the execution of mission command. Stated plainly, commanders were unable to make timely and accurate decisions or to provide subordinates informed

guidance given the lack of proper staff work.

We had to fight the enemy of the moment – and our own cynicism. Our ability to anticipate was extremely limited, and our ability to initiate was close to impossible.

Prior to the CTE, we assumed we would collectively know what to do. We had all been in the Army a decade or two. My peers in the battalions lamented that their single TF collective-training event, though under field conditions, was inadequate to get them to where they need to be.

Upon returning to JBTR from the CTE, COL Dowell (Hammer 6) and CSM Tryharder (Hammer 7) stoically reviewed the BCT's NTC take-home packet and the execution of the BCT's training strategy. They gathered the BCT's leadership and led a post-rotation AAR that resulted in the following lessons-learned:

- Nothing replaces the realism provided by live training under field conditions. However, the amount of live training a unit can conduct is limited by competing resources and the live training environment's ability to replicate facets of the complex OE. The BCT used 46 of 53 available ranges; that sounds great, but it was not enough by itself. What's more, we had companies moving all over the installation to execute training. Administrative movement between training areas diminished training time. We had not expected this to become the significant overhead it was determined to be. In short, live training should be one aspect of a total training environment. Live training events are costly, time-consuming and require more control, all of which effect throughput and repeatability. However, they are critical and require significant preparation to get the most out of the event.
- Brigade training does not occur unless the whole brigade trains. That seems intuitive, but our UTP failed to include the support and fires battalions in a meaningful way. We did next to nothing with the engineers. And like the maneuver

companies, the companies within the fires and engineer battalions trained predominantly at or below the company level, with minimal interaction between the companies or their peers in the maneuver battalions. We could have integrated more of the fires battalion into the training conducted by the maneuver companies. Likewise for the engineer battalion. How could we have created a shared training environment for the cavalry squadron and the fires battalion? We did not exercise casualty evacuation. This could have easily been done in any of the training events. In the future, the brigade only truly trains when the brigade trains together.

- As identified on the scorecard (Figure 3), our TADSS utilization was paltry. Rather than integrating TADSS to create a single, complete, medium-fidelity training environment focused on allowing maximum iterations, we executed our training plan, using TADSS in a sequential manner leading up to our live training events. We had enough CCTT man-modules to form two mechanized teams but instead trained armor and mechanized infantry company-pure. The battalions trained as battalions and not as task forces, and the companies trained as companies, not as company teams. The CFFT was used once to train a handful of new personnel. We never used the Virtual Route-Clearance System.
- Our understanding of the complexities of a DATE scenario was inadequate. We focused on combined-arms maneuver (CAM) and spent little time on wide-area security. After a decade of counter-improvised-explosive-device operations, we accepted risk here. We did not realize that what we experienced individually was not shared collectively, that collective-training events were necessary to develop future shared understanding. Common experiences are the foundation for shared understanding. We did not leverage our virtual and constructive capabilities to conduct leader's certification training and Tactical Exercises Without





	<i>Training device</i>	<i>Usage</i>		<i>Training device</i>	<i>Usage</i>
	<i>JLCCTC-ERF</i>	1/1		<i>VBS3</i>	--
	<i>AVCATT</i>	4/4		<i>MILES</i>	--
	<i>EST II</i>	1/2		<i>VCTS</i>	0/1
	<i>CCTT</i>	14*/28		<i>BiLAT</i>	--
	<i>CFFT</i>	2/7		<i>Ranges</i>	3/3
	<i>RVTT</i>	0/4			
	<i>DSTS</i>	2/3			

Figure 3. ITE scorecard.

Troops. Our newly arrived leaders would have benefited from the experience of our senior and experienced leaders.

In the end, I realized I must improve my understanding of all TADSS and how they can be best brought together into a training plan to enable complex, robust and realistic iterative training in echelon. I sought the advice of our division modeling and simulation officer and reviewed ITE best practices at <https://milgaming.army.mil/Entrance/Product.aspx?productid=20> and within the *Leader's Guide to the Integrated Training Environment* to improve my understanding of the capabilities and prepare the brigade for our follow-on mission.

## Second dream

Could it be? It's Feb. 3. I awake with excitement and according optimism. A second chance? In the recesses of my memory, I recall our previous training plan and the outcome of our CTE.

Informed by this, I strike out, determined to address the shortcomings so painfully noted. When we review the BCT commander's training objectives this time, we are going to do better. We will design our training program informed by last night's fevered vision.

In the office, I begin to gather the team and align events and a common scenario around all the KCTs. After a few phone calls, we assembled our team with personnel from the MTC and the division's modeling and simulation officer. As a group, we dug into the problem.

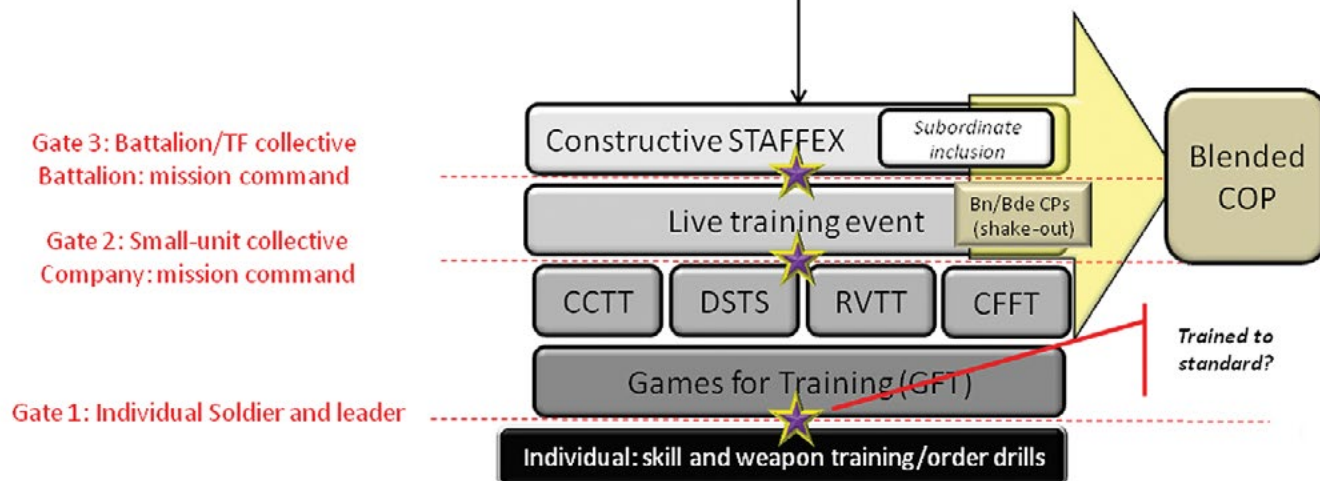
Informed by Army training doctrine, we quickly designed an iterative training methodology that allows Soldiers and units to progress through a series of gates that require proficiency in virtual-training systems prior to progressing to live training. CSM Tryharder led the effort by enlisting the BCT's non-commissioned officers in developing and implementing a training plan that

required junior leaders to train individual through crew collective training using Engagement Skills Trainer (EST) 2000 for individual weapons proficiency; Virtual Land-Navigation Trainer; CFPT II; crew training on scenarios in CCTT; Aviation Combined Arms Tactical Trainer (AVCATT); Reconfigurable Vehicle Tactical Trainer (RVTT); and Virtual Battlespace 3 (VBS3) scenarios. Once deemed proficient, Soldiers would advance to the next level in this "gated training strategy" (Figure 4), from training on individual tasks to small-unit collective training.

Meanwhile, the BCT commander implemented a leader-training strategy that used VBS3 scenarios to educate and train leaders on the complexities of DATE scenarios and the contemporary threat portrayed in the OE. This provided all involved with some familiarity of the terrain and conditions the BCT would face during the impending NTC rotation.

Also, the BCT leadership team

1. Conduct mission command (ART 5.0)
2. Conduct offensive operations (ART 7.0)
3. Conduct tactical tasks (ART 7.5)
4. Integrate fires (ART 3.1)
5. Conduct FPoL (ART 1.2.8.1)
6. Perform intelligence, surveillance and reconnaissance (ART 2.3)
7. Conduct intelligence support to targeting and information superiority (ART 2.4)
8. Provide logistics support (ART 4.1)



**Figure 4. Training strategy – a gated approach.**

implemented a leader-certification program. Leaders would undergo certification training that displayed proficiency in each supporting leader task before beginning squad through TF collective training. We added leadership professional-development seminars to our UTP. The seminars took the form of professional discussions on dilemmas we would face in the conduct of unified land operations within a DATE scenario. I watched, surprised and satisfied, as this effort and these events took on a life of their own in professional dialogue – and off-duty.

The BCT executive officer and I, along with the TF and battalion field-grade officers, developed a training strategy to conduct TF and BCT mission-command exercises. Paramount to the strategy was emphasizing operator proficiency on mission-command information systems. As operator proficiency progressed, BCT, TF and battalion staffs began conducting collective Army Low-Overhead Training Toolkit (ALOTT) DATE-scenario staff collective-training exercises. Battalion staffs trained mission command while involving company headquarters in the response cells to reinforce proficiency on mission-command information systems

at operator level while validating unit SOPs.

Progression brings a richer experience and more complex tactical problems – we discovered this through the “crawl-walk-run” methodology identified in *The Leader’s Guide to Unit Training Management*. With a little imagination and ingenuity, we conceived a plan for the inclusion of the engineer, fires and support battalions. We proposed the addition of a “subordinate inclusion” (Figure 4) into the BCT staff exercise (STAFFEX) to drive blended training at the BCT level. We would set two companies into CCTT and a handful of crews in the RVTT. The companies would fight through contact in CCTT.

The general idea was that CCTT casualties would be treated and medically evacuated. Once a Soldier became a casualty in a CCTT simulator, the Soldier would be treated by combat lifesavers and evacuated by the company first sergeant. An aid station was placed in the simulation. This required companies and platoons to address all phases of a tactical operation, including the establishment of casualty collection points as part of consolidation and reorganization. When the

first sergeant reached the aid station, medics on-site at MTC would go through the process of triaging the wounded. Further evacuation was accomplished in a similar manner until Soldiers reached Role II care the BSB provided.

The treatment of casualties and execution of refueling operations brought the support battalion into the CPX while providing another training opportunity for one of our mechanized teams. The engineer battalion would execute their constructive training event before the BCT CPX. During the CPX, they played a critical role in the forward-passage-of-lines (FPoL) of the maneuver task forces through the reconnaissance squadron. They would also conduct mobility/counter-mobility operations in one sector and assured mobility operations along major lines of communication in another sector. This realistically depicted the complexities of the contemporary OE.

The assured mobility operations would occur in the Virtual Clearance Training Suite (VCTS). While an individual was responsible for aligning the VCTS with units in the constructive simulation, they call it swivel-chairing; we thought

that additional effort was a minor nuisance considering the return-on-investment for the incorporation of BCT enablers.

Finally, with the assistance of the MTC personnel and the division's modeling and simulation officer, we developed a plan to feed BCT and TF TOCs with a common operating picture (COP). The result was enriched training that provided iterative decision-making drills that improved proficiency and, most importantly, Soldier and leader confidence in their equipment and SOPs.

Two weeks into our training plan, the battalion, TFs and BCT were required to establish CPs. The units were encouraged to migrate relevant functions from their fixed sites into their CPs. We agreed that mission-command information systems would be the device of choice for information exchange. To that end, we even had first sergeants submitting daily unit reports to the TFs and battalions for inclusion in Battle-Command Sustainment Support System (BCS3). The best first sergeants required their subordinates to submit "Yellow 4" logistics reports to drive their assessment and submission to the battalion or TF. Our logistics-status reports were taking on the role of informing the brigade estimate with timely and accurate information.

Through all of this, and over the next month, we observed Soldiers and junior leaders owning the training. Each organization is executing training a little differently. The BCT is making great progress. Our confidence grew every day as we achieved higher levels of mission-command proficiency during every TF and battalion virtual, constructive and live training exercise. With many more common training experiences and a sense of shared understanding, we left JBTR confident in our capabilities.

**O**ur performance at NTC would be best described as *satisfactory*. We had some success as a team, but we still seemed to be a step behind the OPFOR and out of step as a team as we fought through the demands of the complex OE. It was determined that our staffs had not

arrived ready for the experience. Our focus on individual, leader and small-unit training left too little time to effectively achieve the mission-command proficiency required to achieve the requisite level of readiness to face a world-class OPFOR in a complex OE.

Upon returning to JBTR, COL Dowell and CSM Tryharder reviewed the BCT's NTC take-home packet and the BCT's training strategy. They gathered the leadership and led a post-rotation AAR. As the executive officer and I walked into the BCT conference room for the AAR, I had an eerie feeling I had been here before in the alternative future imagined in my dream – the future where events had not turned out as well as they just had.

The AAR went well and emphasized the following lessons-learned:

- Begin preparations early in the planning process to exercise all echelons. As TADSS were built around legacy training models – they are optimized to train certain skills at specific echelon – it is necessary to consider how they best tie together into a complete training environment. In short, all TADSS and training enablers need to be brought in early to ensure success. The successes we did enjoy were, in part, the result of early initial planning among ourselves and with the MTC, assisted by the division modeling and simulation officer. A few hours of thoughtful work paid dividends for many months. And, not only did it increase training throughput and quantity, it also increased the quality of training available over the span of the training.

As before, our gated-training strategy and leader-certification programs ensured that Soldiers and their leaders met the necessary performance prerequisites prior to advancing to more complex tactical problems.

We issued task-organization early so units could train as TFs and teams, as opposed to battalions and companies. In doing so, we maximized our TADSS utilization – maxing out all the CCTT man-modules for weeks at a time. Also, we incorporated AVCATT (four of four) with CCTT modules (28 of 28) to

train complex multi-echelon and true CAM. The reconnaissance squadron joined CCTT (14) and CFFT (two) and pulled them into a CFFT scenario, executing across campus for observer-fire-maneuver training at the troop level.

- We improved the incorporation of TADSS into our training plan. Our strategy ensured that Soldiers and units were prepared to conduct increasingly complex training and progress toward task proficiency. Concerning that, I am reminded of a previous time when I stated that UTPs need to include all enablers and expected attachments – in this case, the MI company. Our inability to synchronize effects and to discern the enemy's intent, or even how to collect accurately on him, was a heavy weight we carried into every fight. Poor planning resulted in conflicted plans – improper air-space management and asset de-confliction shut down fires and limited the movement of air assets at critical times. We were not able to mass effects at the decisive point. All this could have been prevented if we had trained using simulation (Joint Land Component Constructive Training Capability-Entity Resolution Federation (JLCCTC-ERF)). Once trained, a staff could use a portion of the "ERF" called ALOTT to assist them in rehearsing and visualizing over time and space the employment of the BCT's capabilities. The conduct of an effective rehearsal is crucial to any plan. We found ALOTT to be helpful in conducting key-leader and functional rehearsals.
- Units must conduct iterative, complex, multi-echelon training to achieve the level of proficiency required to obtain the requisite level of readiness to face and defeat a world-class OPFOR in a complex OE. A single iteration of a TF/BCT culminating exercise is not enough to achieve proficiency, shared understanding and synergy among the many teammates. Units must leverage the blended and integrated training capabilities that allow commanders to begin conducting multi-echelon training earlier in their training strategies to provide

the iterations necessary to achieve mission-command proficiency.

Upon completion of the AAR, I sought the advice of our division modeling and simulation officer. As I walked into her office, Yogi Berra’s famous quote inexplicably came to mind: “It’s déjà vu all over again.” With the recollection of our dialogue in the could-have-been, I am intent in determining how we can improve if I am required to repeat this event again tomorrow ... today ... maybe that’s today again tomorrow? We reviewed the BCT training strategy, and she instructed me on how the BCT could increase proficiency by integrating training capabilities to expand the training space and complexity of the OE, beginning multi-echelon mission-command training earlier in our training strategy. She provided me a great site, the ITE Webpage, <https://milgaming.army.mil/Entrance/Product.aspx?productid=20>, to learn more about ITE and to review and share best practices.

### Third dream

I am excited. It’s Feb. 3. I find new meaning in my work and await the day with eager anticipation. Yesterday was our last day on Red Cycle. This seems familiar, whether prescience or the result of events from the night before; with a troubled mind I count them as blessings. I strike out with vigor. The situation remains the same: the BCT Red Cycle tasking period is currently “amber” but will be “green” next quarter ahead of our NTC rotation. As before, I hurriedly place phone calls and gather the team in an attempt to affect our eventual outcome in light of my most recent reverie.

By happenstance and without my previous knowledge, it turns out we have a modeling and simulation officer at the brigade. He arrived a month ago from his qualification course. I decided to engage the MTC director and ask him for “jump TOC” office space for my Functional Area 57 so that he could embed within the MTC. I shared a few

thoughts with my modeling and simulation officer, lessons from the preceding evening. That investment paid off nearly immediately. He began pulling BCT units into the MCT for training and teaching junior leaders the capability and value of the TADSS available at home station.

The happy, chance meeting with our modeling and simulation officer clued me into the ITE, enabled by the live-virtual-constructive integrating architecture (LVC-IA). Enabled by the integrating architecture, the ITE provided me the means to not only conduct multi-echelon training, similar to the previous night’s blended training, but it also provided a comprehensive AAR capability for review in two dimensions (or three dimensions). As a group, we determined this should be the cornerstone of our train-up strategy.

I adjusted the gated-training strategy for inclusion of the ITE. We stressed the utility of using the ITE as a mechanism for bringing entire battalions into













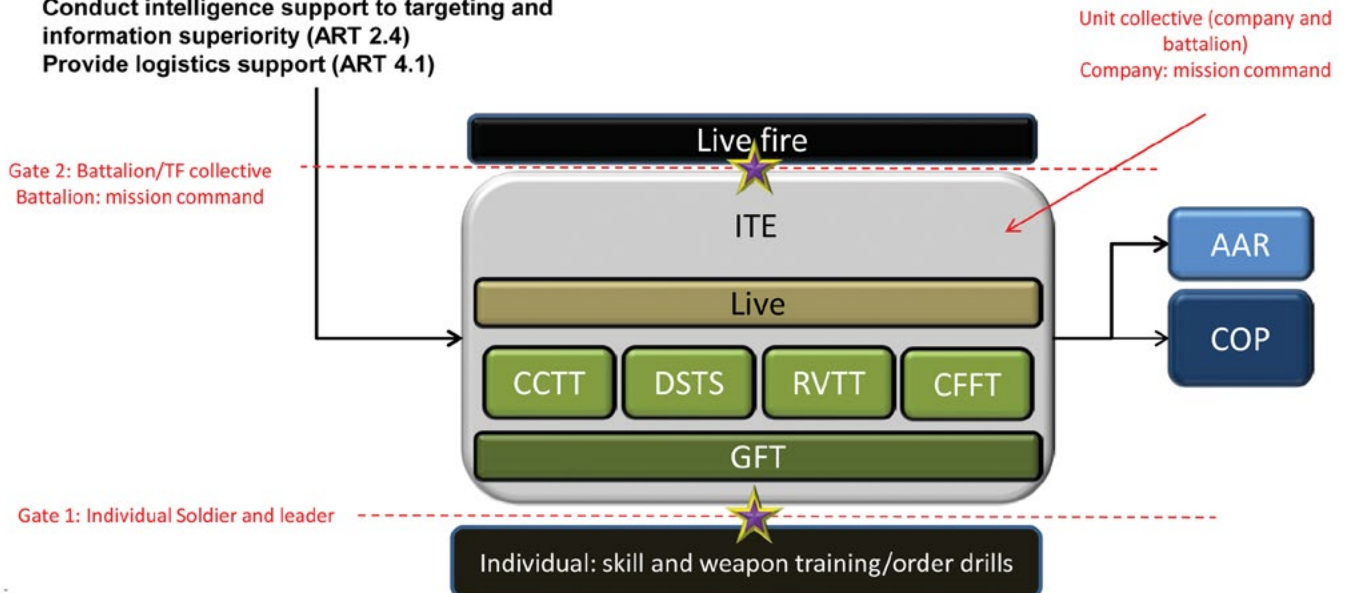
	<i>Training device</i>	<i>Usage</i>		<i>Training device</i>	<i>Usage</i>
	<b>JLCCTC-ERF</b>	1/1		<b>VBS3</b>	--
	<b>AVCATT</b>	4/4		<b>MILES</b>	--
	<b>EST II</b>	1/2		<b>VCTS</b>	1/1
	<b>CCTT</b>	28/28		<b>BiLAT</b>	--
	<b>CFFT</b>	2/7		<b>Ranges</b>	3/3
	<b>RVTT</b>	4/4			
	<b>DSTS</b>	3/3			

Figure 5. ITE scorecard – second dream.

1. Conduct mission command (ART 5.0)
2. Conduct offensive operations (ART 7.0)
3. Conduct tactical tasks (ART 7.5)
4. Integrate fires (ART 3.1)
5. Conduct FPoL (ART 1.2.8.1)
6. Perform intelligence, surveillance and reconnaissance (ART 2.3)
7. Conduct intelligence support to targeting and information superiority (ART 2.4)
8. Provide logistics support (ART 4.1)



**Figure 6. Brigade training strategy.**

a single exercise. LVC-IA supports the use of a common scenario with common data for all the training domains (live, virtual constructive and gaming). We had an entire TF instrumented with HITS and MILES training in a common scenario with combat-vehicle crews in CCTT and RVTT. The reconnaissance squadron designed a training strategy that included CCTT, Dismounted Soldier Training System (DSTS), CFPT and JLCCTC-ERF. I understand that when combined, the technical control is un-gainly, but in the end, they were able to employ a workaround and gained the capability to conduct observer/sensor-shooter interactions in a common training environment while combat vehicles maneuvered within the simulation.

Better yet, when the battalion and squadron staffs were conducting staff training using the JLCCTC-ERF, the LVC-IA integrated companies, teams and troops into the same scenario, providing them the ability to continue training in virtual systems while supporting higher-headquarters' training needs. Simply put, the staff and troops could train at the same time; it was no longer a one-or-the-other proposition. As

we struggled to resource staff training but not at the expense of subordinate organizations, I came to learn that various components of the JLCCTC can be "tuned" to the training audience. When the entire staff is involved and a high-fidelity training environment is required, the Joint Conflict and Tactical Simulation is used. If only a few people are training and a low-overhead capability is more appropriate, ALOTT is employed.

If CCTT was not available or was not the appropriate tool, leaders used gaming technologies to execute the same platoon battle drills and company SOPs they had previously trained within CCTT. In many cases, the employment of these training enablers accomplished the same training objectives but at a reduced cost in planning time and coordination. In essence, we would eventually enter the live training environment at a much higher level of proficiency at all levels.

Through all of this, we determined that a shortcoming as a staff was related to our inability to provide the commander a complete, correlated intelligence picture and accurate staff estimates.

We addressed this threefold:

- First, we increased emphasis on the training and employment of the [Distributed Common Ground Station-Army](#).
- Second, we increased the S-2's role in our order drills and professional seminars. In these events, they were made to role-play the free-thinking threat. Over time, the "two-shop" began to progress from briefing the "what" – in other words, providing historical reports – to providing the "so-what" and "which-means" based on their analysis of the situation. This mantra was circulated around the staff. The commander required the reasoned analysis of experts, not someone to read him the significant-activities log.
- Third, the commander demanded that the S-2 and his staff participate in all BCT staff training. He even coordinated for folks from the division's G-2 shop to provide the OPFOR commander during the train-up to our CTE.

It became apparent that repetition increased professional introspection.

Once they realized the training was expected to progress over a series of events rather than evaluated at a single CPX, individuals began to take more initiative during the training and played a more active role in the AAR. By the conclusion of the brigade training, battalions had conducted multiple iterations of mission-command staff training, as had the brigade. The staff had formed into a competent whole, and the commander was comfortable with the organization and his subordinate commanders.

**T**he NTC rotation was a success. Key to our success was the ability to operate as a united whole with a common task and purpose. That unity of purpose and action was achieved in part by repetitive multi-echelon training enabled by ITE. Units could repetitively train with one another at echelon. What's more, this complex training environment – along with the iterative training methodology – enabled the BCT's ability to train to proficiency on all its KCTs within an environment indicative of the one it would eventually face at its CTE. This more pleasant dream concluded with the following lessons:

- The complex training environment provided by the ITE stresses mission command by providing the commander the ability to train mission command at echelon. The ITE provides commanders from company team to BCT the ability to train together within a single complex OE that replicates the dilemmas presented by the DATE during military operations in the contemporary environment.
- Ingenuity and initiative are laudable character traits in general, but they pay handsome dividends in planning training. Many of our best ideas came from Soldiers and junior leaders who are not only comfortable with technology but have a better grasp of their challenges and an eye toward a technically enabled solution. They are comfortable with the technology because they have never known a world without a computer or the Internet, and their notions of proper,

formal training are not constrained by layer upon layer of the previous generation's training strategies. That they have a unique understanding is expected, but they recognize the specific needs of the individual as a critical part of the team. This knowledge enables them to effectively address the unit's training needs through a progressive and iterative process.

Pleased with the result, I settle back into my seat to enjoy a paunch cigar. As languid smoke whirls around my sunburned head, I feel the familiar ephemeral effects begin to take hold.

Maybe this is our story: technology is an enabler, never meant to replace training, but it is necessary to create conditions that enable Soldiers and leaders and teams to succeed in uncertainty. The lesson from Kasserine is that preparation, combined-arms integration and individual initiative win in decisive operations. Training mission command develops agile and adaptive leaders with initiative. The ITE gives commanders the ability to conduct progressive multiple repetitions of tough, realistic training at echelon. This provides our formations training overmatch. Training overmatch produces an operating capability for informed decision-making and decisive action as learned from an iterative and progressive training program.

We must continue to train as if we are at war, leveraging all our resources to retain training overmatch. I finally found peace of mind.

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*Medal with "V" device.*

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*LTC Christopher Hartline is the simulation future-operations planner for TCM-ITE, National Simulation Center, Fort Leavenworth. Previous duty assignments include modeling-and-simulations systems engineer, Environment Development Division, Deputy Director Joint Environment, Joint Staff J-7; simulation and technical planner, Environment Development Division, Deputy Director Joint Environment; student (modeling and simulation), Advanced Civil Schooling, Old Dominion University, VA; battle staff and cavalry troop observer/controller/trainer, armor battalion and cavalry squadron training team (Cobra), NTC Operations Group, Fort Irwin; and commander, Alpha Company, 3-67 Armor Battalion, 4<sup>th</sup> Infantry Division, Fort Hood. His military schooling includes Armor Officer Basic and Advanced courses, Cavalry Leader's Course, CGSC and Joint Forces Staff College, Norfolk, VA. LTC Hartline holds a master's of arts degree in management and leadership from Webster University, a master's of military arts and science degree from CGSC and a master's of science degree in modeling and simulation from Old Dominion University. He maintains a joint planner and strategist additional-skill identifier.*



## Acronym Quick-Scan

<b>AAR</b> – after-action review	<b>DSTS</b> – Dismounted Soldier Training System	<b>MILES</b> – Multiple Integrated Laser Engagement System
<b>ALOTT</b> – Army Low-Overhead Training Toolkit	<b>EST</b> – Engagement Skills Trainer	<b>MTC</b> – Mission Training Complex
<b>ART</b> – Army tactical task	<b>FoL</b> – forward passage of lines	<b>NTC</b> – National Training Center
<b>AVCATT</b> – Aviation Combined Arms Tactical Trainer	<b>FTX</b> – field-training exercise	<b>OE</b> – operational environment
<b>BCT</b> – brigade combat team	<b>GFT</b> – Games for Training	<b>OPFOR</b> – opposing force
<b>BEB</b> – brigade engineer battalion	<b>HHC</b> – headquarters and headquarters company	<b>PAX</b> – personnel
<b>BiLAT</b> – Bilateral Negotiation Trainer	<b>HITS</b> – Home-Station Instrumentation Training System	<b>RVTT</b> – Reconfigurable Vehicle Tactical Trainer
<b>BSB</b> – brigade-support battalion	<b>ITE</b> – Integrated Training Environment	<b>SOP</b> – standard operating procedure
<b>CAB</b> – combined-arms battalion	<b>JBTR</b> – Joint Base Trained and Ready	<b>SPT</b> – support
<b>CAM</b> – combined-arms maneuver	<b>JLCCTC-ERF</b> – Joint Land Component Constructive Training Capability-Entity Resolution Federation	<b>STAFFEX</b> – staff exercise
<b>CCTT</b> – Close Combat Tactical Trainer	<b>KCT</b> – key collective task	<b>TADSS</b> – Training Aids, Devices, Simulators and Simulation
<b>CFFT</b> – Call-for-Fire Trainer	<b>LVC-IA</b> – live-virtual-constructive integrating architecture	<b>TCM-ITE</b> – TRADOC Capability Manager-Integrated Training Environment
<b>CGSC</b> – Command and General Staff College	<b>MCTP</b> – Mission Command Training Program	<b>TF</b> – task force
<b>COP</b> – common operating picture	<b>MI</b> – military intelligence	<b>TOC</b> – tactical-operations center
<b>CP</b> – command post		<b>TRADOC</b> – (U.S. Army) Training and Doctrine Command
<b>CPX</b> – command-post exercise		<b>UTP</b> – unit-training plan
<b>CTE</b> – culminating training exercise		<b>VBS3</b> – Virtual Battlespace 3
<b>DATE</b> – decisive-action training environment		<b>VCTS</b> – Virtual Clearance Training Suite

# Unified Land Operations in the 2040 Timeframe – Autonomy-Enabled Platoon-Level Missions

by retired COL Michael N. Smith, retired COL R. Craig Effinger III and Dr. Paul D. Rogers

This article provides ideas about the future force by describing how currently maturing autonomy-enabling solutions might be employed for the Army in 2040 timeframe. We want to provoke constructive dialogue that studies our accepted understanding of what may seem possible in the coming decades.

This is vital because the U.S. Army's ability to achieve significant leaps in warfighting efficiency and effectiveness demands a healthy understanding of the interaction of technology-enabled capability with doctrine and tactics, techniques and procedures – and the resultant impacts across doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF). Significant advances in our ability to realize efficient, expeditionary ground warfare is dependent on our collective ability to appropriately embrace the benefits of emerging operational capability and to mitigate the operational risks of the new capability while understanding the necessary doctrine and tactics that fully exploit its operational potential.

Many historical examples are available to reinforce this premise. Consider the advent of tanks on the World War I battlefield, the evolution of tank warfare during the interwar years and the significant impact on warfare during World War II. Armies around the world who chose to dismiss the potential of that new capability found themselves quickly overmatched by those who embraced it, studied it and optimized their doctrine around the newfound velocity. Today we must follow the latter example and not fall prey to an institution's natural resistance to change.

This article does not propose drastic or radical changes in how we conduct

warfare. The fundamental principles of war remain the same: warfare has been and remains a uniquely human endeavor. Autonomy-enabled systems (AS) are tools to enhance the human potential of our force across the spectrum of operations. These systems augment the operational dimensions of time and space. In a kinetic operation they will find, fix, delay, divert or stress and help defeat an opponent, disrupting his actions, without committing Soldiers. Incorporating AS this way allows our Soldiers to gain a time and space advantage. In non-kinetic operations, Soldiers are required to engage with local populations and build trust. In these stability operations, AS will enable efficiencies across intelligence, sustainment and mission-command functions that support the main effort.

U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) believes the U.S. Army must focus its science and technology efforts on concept-based requirements while fostering innovation that empowers, unburdens and protects Soldiers. TARDEC is developing autonomy-enabling concepts to help shape and support the integration of these emerging capabilities into our formations.

## 2040 environment

First let's review our understanding of the environment in the 2040 timeframe.

**Operating environment.** The operating environment will be characterized by:

- Uncertainty;
- Complex and urban terrain;
- Extended distances for both employment and deployment;
- Decentralized operations;
- Anti-access and area denial (A2AD);
- Hybrid threats;
- Host-nation and allied forces;
- Non-governmental organizations; and

- Media interaction with civilians.

Autonomous systems will enable formations and the Soldiers they operate with throughout these environments and in various regions of the world.

**Regional environments.** AS must be capable of operating in virtually all environments and conditions. They provide us the ability to enhance our operations in areas such as in the high terrain of Afghanistan or the deserts of North Africa, where they may not be impacted by the lack of oxygen in a thin atmosphere or the temperature swings of a desert landscape. Operations in some regions may be more or less conducive to AS. Combat operations in an urban environment may be easily exploited by AS, which can operate in subterranean environments without light or oxygen. Conversely, conducting humanitarian-assistance or peace-support operations in the same locale may not be amenable to AS due to the high degree of human interaction with local non-hostile populations.

**Threat.** Aerial ports of debarkation (APODs)/surface ports of debarkation will be at risk from capabilities and hybrid threats; state actors with little money and hybrid capabilities; vast deployment distances (as we will be a continental United States (CONUS)-based force); non-state actors with regional influence and access to niche technologies; terrorist groups; transnational drug-trafficking operations; and weapons of mass destruction. Equipment will be more sophisticated relative to both current capabilities and our projected capabilities (we can no longer expect a significant overmatch in terms of technology for most systems), and they will logically improve with technologies such as night vision, signals intelligence or directed-energy weapons. Threats will be comfortable with and operate routinely within civilian populations.

**Expeditionary capability.** Given the

fiscal reality of a CONUS-based Army, we must seek to enhance our expeditionary capability through the use of AS. AS may be used to help set the conditions for successful A2AD operations by early insertion into areas to degrade or eliminate enemy A2AD capabilities, allowing us greater options in forced-entry or early-entry operations. Also, at the tactical edge, if we are able to remove Soldiers from combat platforms, we are able to deploy smaller/lighter unmanned combat systems with initial forced-entry forces, enhancing the force's ability to more quickly gain and maintain momentum and accomplish their mission.

The operational spectrum and range of military operations remains the same.

## Warfare fundamentals same

The principles of war remain unchanged; however, autonomous systems may allow their application in new and different ways. The warfighting functions remain unchanged; however, AS can help enable them and support decisive action.

We must avoid the temptation to believe that autonomous systems somehow change the underlying principles under which the Army operates (reference "Principles of War in the Information Age" and the "Revolution in Military Affairs" mindset of the 1990s). They can contribute to varying degrees when integrated into our formations and enable them.

## Impetus for autonomy

The inability of solely manned formations to physically occupy and operate with the battlespace required at a formation level drives the need for autonomous systems.

As seen through history, we expect increasingly lower and lower echelons of units to occupy greater and greater areas of terrain (World War I rifle company to Operation Iraqi Freedom (OIF) company). As we have moved from "shoulder to shoulder" operational constructs to such things as wide-area security (WAS), we have increased the risk of knowing less and less about ever-larger areas of our operational

areas. Use of AS will allow unit leaders and Soldiers to regain a more detailed understanding of terrain they are operating in and through, perhaps providing that tactical edge that is the key to success on the battlefield.

The requirement for continuous (24/7) operations remains; AS provide the ability to maintain operational security in continuous operations. AS may in fact permit the Army to fully operate throughout the day-and-night cycle by overcoming the circadian rhythm that makes Soldiers less awake in the very early hours of morning, or by providing the ability to conduct continuous and sustained resupply through automated convoys – or even individual vehicles.

Operations in and among the population place increasing demands on formations to maintain much higher levels of situational awareness and situational understanding of their environment (in other words, no "free fire zones"). As we operate within populations, we must increasingly be able to discriminate between friendly, neutral, non-hostile and hostile personnel, which mean we must gain more detailed information about the peoples with whom we are interacting.

## Unified land operations

The unified-land-operations concept frames how the Army will operate and remains valid regardless of the manner in which the Army is manned, equipped or organized.

We need to view autonomous systems as another tool within the inventory that enhances the Army's ability to generate and apply combat power. We must always look at autonomous systems through the generation/application of combat-power lens; if AS do not generate/apply combat power, they are not value-added.

## Tactical examples

Following is a series of tactical vignettes intended to generate thought and discussion on how autonomous systems might be useful to the Army, including the general/broad considerations that such application/employment might engender across the

DOTMLPF framework. These are not meant to be comprehensive but to help Soldiers and leaders visualize the utility of AS in relevant operational contexts.

### Vignette 1: guard mission

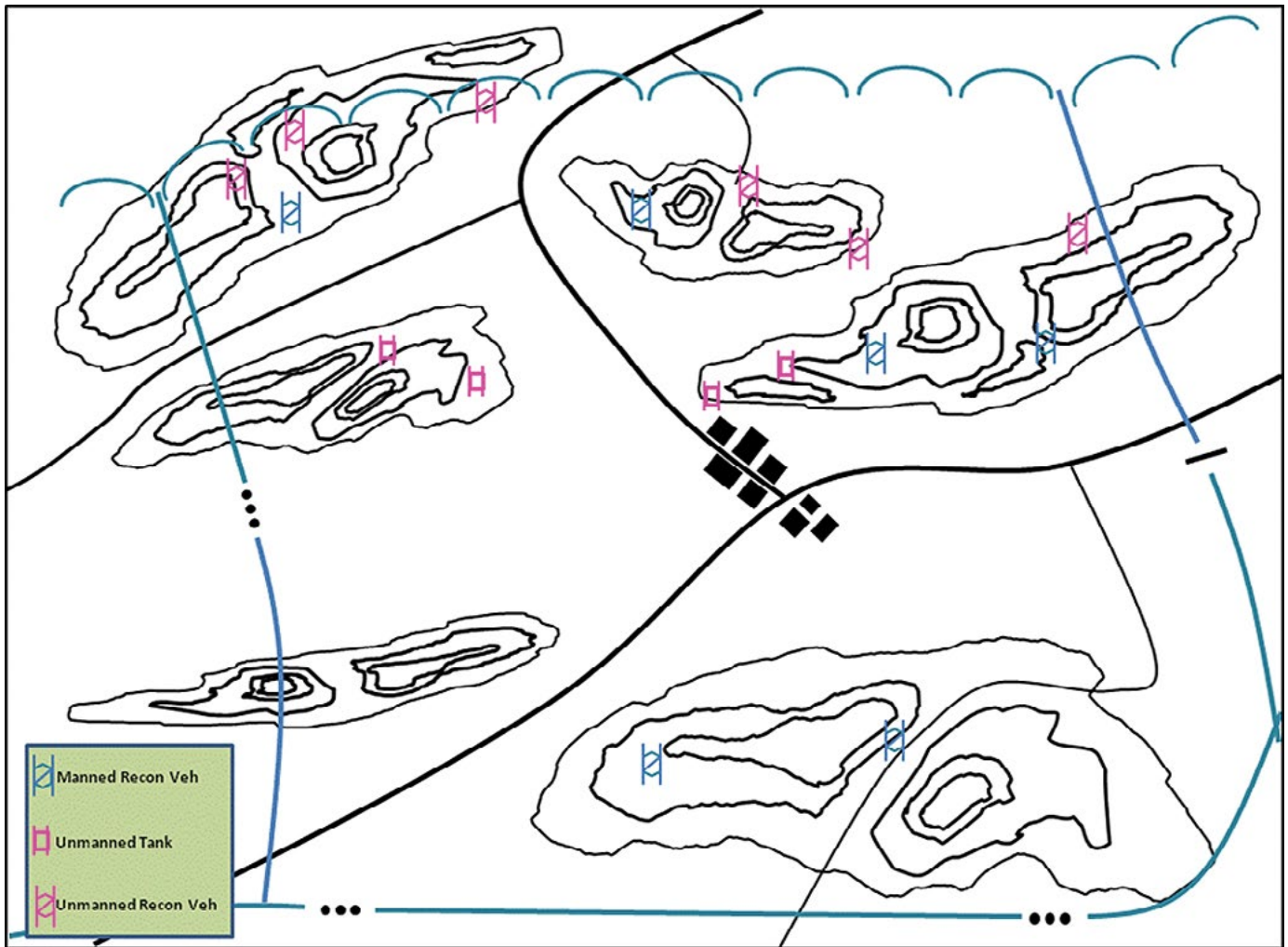
**Task/purpose:** *Guard* is a security task to protect the main body by fighting to gain time while also observing and reporting information, as well as prevent enemy ground observation of and direct fire against the main body. Units conducting a guard mission cannot operate independently because they rely on the main body's fires and functional/multifunctional support assets. A guard is typically a mission assigned to a combined-arms unit possessing the organic capability to provide early warning and maneuver space to a larger main body element.

Doctrinally, the force performing the guard mission must be able to engage and defeat enemy reconnaissance forces; force the enemy unit to deploy into either an attack or defensive posture; and deceive the enemy as to the true location of the friendly main body. Since the elimination of the G-series cavalry platoon, generally a company-team has been the lowest-level tactical unit assigned this mission. However, autonomy-enabled cavalry platoons can once again provide this capability at the lowest tactical level.

Organization for combat:

- Six light reconnaissance vehicles (LRVs) (36 Soldiers);
- Four unmanned reconnaissance vehicles (URVs) (a section of two per scout section);
- Four unmanned mobile protected firepower (MPF) systems (two sections of two).

**Operational narrative:** For this mission, the standard six-vehicle scout platoon has been augmented by four URVs, which are capable of autonomous tactical behaviors and equipped with sensor suites that include electro-optical (EO)/infrared (IR), seismic and acoustic capabilities. The platoon also has four autonomous MPF systems, which operate in two-vehicle sections just like a tank platoon. Given these additional capabilities, which operate for the most part without human



**Figure 1. Guard mission.**

interaction (beyond providing general guidance on where to move, establish surveillance locations and orient – the same guidance a platoon leader would give to a vehicle or section commander), the platoon has the combined-arms capabilities and density of surveillance assets (both manned and unmanned, to include dismount capabilities) to perform a guard mission equivalent to a task-organized company-team. As the enemy force – whether a traditional “Soviet-style” advance guard/security element or something less robust – moves into the sector, this platoon has multiple assets available to identify and then defeat threats up to main-battle-tank level.

Also, with unmanned systems, greater risk can be taken in having assets remain in place to observe and report, reducing the need to displace in contact as well as the potential for loss of contact or destruction of displacing elements. The doubling of mounted

primary surveillance platforms (from four to eight; two of the vehicles are the platoon leader and platoon sergeant, who are not surveillance oriented but are command-and-control focused), along with the ability to package a greater number of sensors into an unmanned platform (beyond the traditional EO/IR systems) allows this platoon to occupy a sector up to twice the traditional width for a platoon.

Combined with the immediate lethal precision effects of the unmanned MPFs (whose “human in the loop” is someone in the platoon-leader and platoon-sergeant vehicles), this platoon has now “returned” a maneuver company-team to the task force/battalion commander, who no longer has to take one of his four maneuver companies to provide security for the formation.

### Vignette 2: zone-reconnaissance mission

**Task/purpose:** A *zone reconnaissance* is normally conducted over a large area to gain understanding of the complete situation within an area the larger maneuver force will later occupy/move through (depending on the higher unit’s mission: offense or defense). Forces must be able to gain an appreciation of the details of the terrain, infrastructure, populace and enemy dispositions. The limitation with the six-vehicle/36-Soldier scout platoon is that the risk of contact with the enemy reduces the pace of movement through the zone; the addition of autonomous systems that can maneuver (not just move) forward of the manned platforms significantly enhances speed and reduces risk to the manned force.

Organization for combat:

- Six LRVs (36 Soldiers);
- Eight unmanned autonomous reconnaissance vehicles (UARVs) (a section of two per scout squad

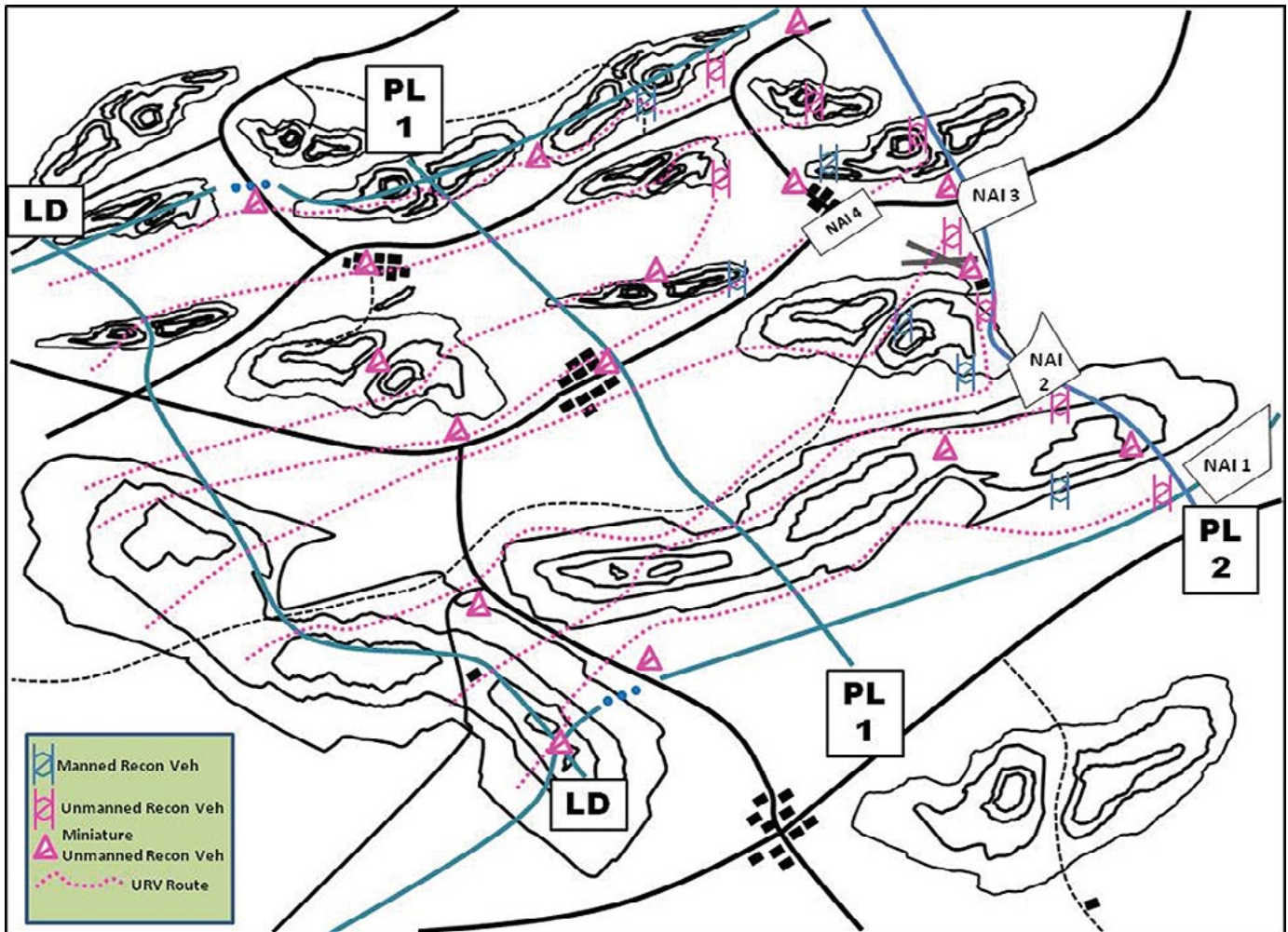


Figure 2. Zone reconnaissance.

- vehicle);
- 16 miniature unmanned autonomous sensor vehicles (two are carried within each UARV).
- UARVs are deployed to maintain surveillance over areas as they are cleared to maintain the integrity of the reconnaissance.

**Combined-arms maneuver (CAM) operational narrative:** For this mission, the standard six-vehicle scout platoon has been augmented by four URVs, which are capable of autonomous tactical behaviors and equipped with sensor suites that include EO/IR as well as seismic and acoustic capabilities. Each URV also carries two small (less than 50 pounds/2ft<sup>3</sup>) miniature URVs that can be deployed to establish remote surveillance (albeit with limited sensors). As in the previous example, the systems operate for the most part without human interaction, providing a force-multiplier effect. The platoon

now has extended surveillance assets (from four primary scout vehicles to 28), allowing a single platoon to conduct a zone reconnaissance across a width normally assigned to a troop (three platoons) or a squadron (six platoons).

Also, the single platoon now has a much greater ability to establish enduring surveillance throughout the zone, which is particularly important during WAS operations, where we want to maintain a high level of situational awareness throughout an operational area. This would allow each battalion to use only its organic scout platoon to conduct the mission, allowing the brigade combat team (BCT) commander the flexibility to focus his organic cavalry squadron farther forward or to the flanks, or to conduct a security mission (such as the guard outlined previously), conserving his forces. The platoon would deploy across the zone, with the URVs moving

ahead of the manned systems and deploying the miniature unmanned reconnaissance vehicles (MURVs) at locations the scouts identify.

Upon reaching the limit of advance (Platoon 2 in the example), the platoon would still have a full complement of assets to establish a screen across the width of the zone if necessary.

**WAS operational narrative:** In a WAS environment, this combination of manned and unmanned assets would allow a commander the ability to much more quickly gain a basic appreciation of the terrain and populace of the area in which the unit is going to operate. Also, the AS allow the manned assets to be focused more on the population to begin the engagement process while the AS continue to execute the reconnaissance of the entire area. Given the nature of WAS, it is very important to have at least a general understanding of the terrain (whether physical or

human) of the area of operations, and the combination of manned and unmanned assets significantly increases the pace and level of detail of operations such as this.

### Vignette 3: screen mission

**Task/purpose:** The purpose of the screen mission is to provide early warning to the main body and prevent it from being surprised by an enemy force. Unlike a guard, there is no expectation of the screen force engaging in extended combat with the enemy force; the critical task is to gain and maintain contact with enemy forces so that the main body can react as necessary.

Organization for combat:

- Eight URVs;
- 16 MURVs.

**CAM operational narrative:** For this mission, the commander is able to employ only unmanned systems, as the

mission only entails reporting on the enemy forces and not the need for engagement to delay, destroy or defeat any enemy forces. The battalion/task force operations team can develop the scheme of maneuver for the unmanned systems, and then they can self-deploy into the sector and establish the observation posts. The unmanned systems are able to establish surveillance, and the individual URVs and MURVs can move to track/maintain contact with enemy assets if necessary. Using only unmanned systems, which provide information directly to the tactical-operations center, allows the commander to focus his manned assets on areas where there is a greater likelihood of enemy presence or activity, or where he needs detailed reconnaissance or interaction with local populations only Soldiers can provide.

**WAS operational narrative:** The use of only unmanned systems frees up manned systems to conduct the

engagement operations with the civilian populations. The critical tactical tasks within a WAS mission set revolve around interaction with the local populations; the more Soldiers available to the commander, the more capable the unit is of accomplishing its mission. Also, given the ability of unmanned systems to execute persistent or near-persistent surveillance, there is a significant increase in capability through both the extension in time-on-station and in the elimination of "surveillance gaps" that would occur as manned assets have to transition with replacement forces.

### Vignette 4: special reconnaissance/surveillance mission

**Task/purpose:** *Special reconnaissance* includes reconnaissance and surveillance actions conducted as a special operation in hostile, denied or politically sensitive environments to collect or verify information of strategic or

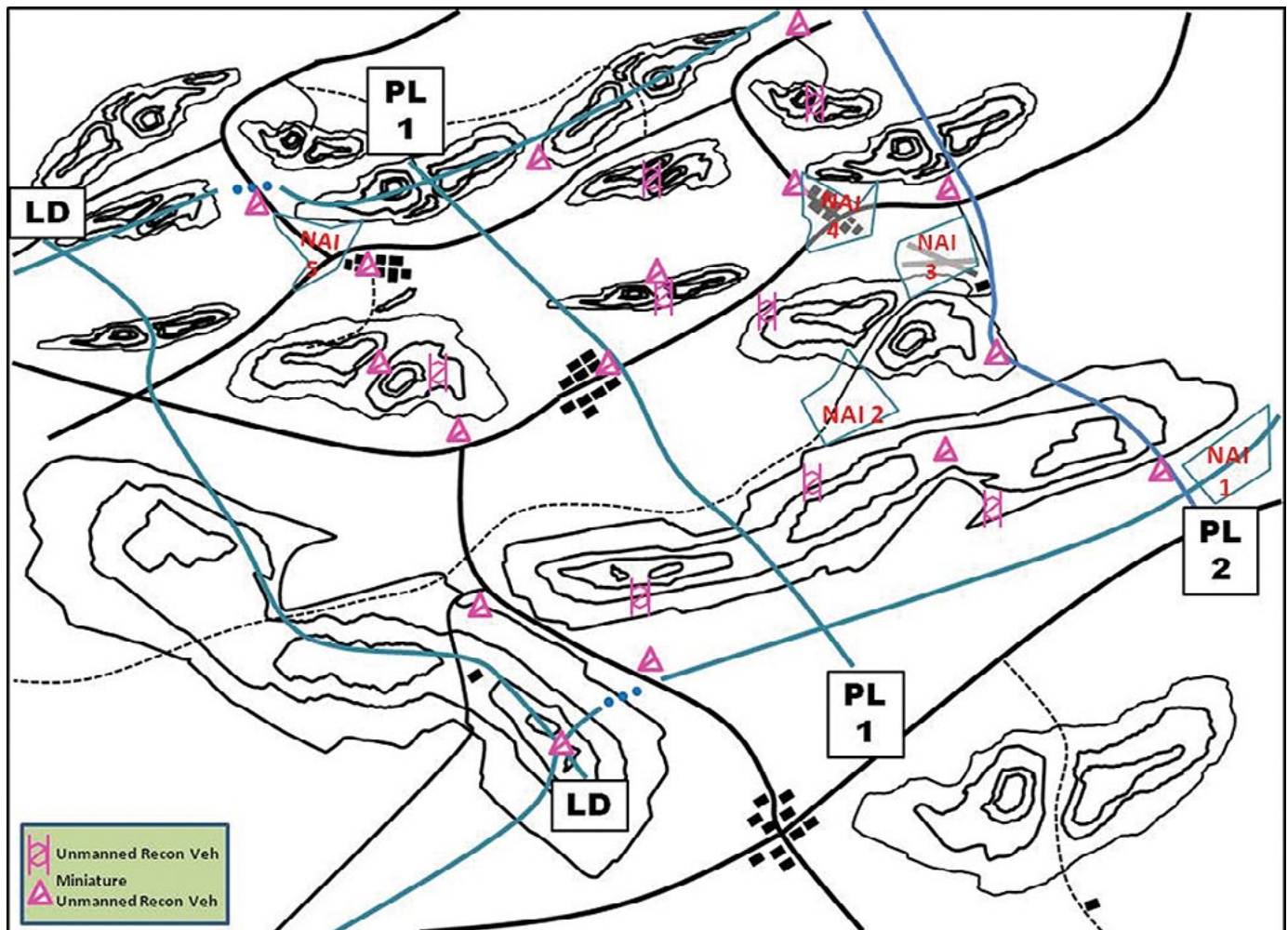


Figure 3. Screen.

operational significance. At this level, long-range surveillance units are often tasked to conduct this mission, but with the rise of A2AD capabilities, autonomous systems can provide a similar capability without risk of Soldiers' lives. Unmanned aerial systems (UAS) or high-altitude high-opening (HAHO) parachute insertion can be used to deliver URVs into the operational area.

Organization for combat:

- Eight URVs;
- 16 MURVs.

**CAM operational narrative:** For this mission, the commander employs only unmanned systems, which are inserted by UAS or HAHO to overcome the risk posed by enemy A2AD capabilities. Using UAS for deployment into the operational area significantly reduces the potential for detection and counter-action by enemy forces; detection avoidance is critical during pre-deployment operations to avoid providing the

enemy with intelligence on our likely deployment areas and to prevent potential national political issues (assuming a state of formal war does not yet exist). Such employment can provide low-risk intelligence collection that can help refine the operational planning for the employment of elements such as Pathfinder and Air Force combat-control teams that would be inserted to establish drop zones for conventional forced-entry units (generally an airborne-infantry BCT or battalion task force).

**WAS operational narrative:** In many respects, the roles are similar in that the friendly force can establish unmanned low-signature but long-enduring surveillance before committing manned assets – and before even letting the local population know we have an interest in the area. This capability, which emphasizes smaller, more static surveillance, may also set the conditions for commanders to decide

whether they will choose to actually deploy forces into an area.

**Vignette 5: route reconnaissance/autonomous resupply mission**

**Task/purpose:** *Route reconnaissance* is a directed effort to obtain detailed information on a specified route and all terrain from which the enemy could influence movement along that route. In this case, we use a combination of manned/unmanned systems to complete all the tasks inherent in a route-reconnaissance mission, which include securing the route. Once the route has been reconnoitered, autonomous systems can transit it, providing as-needed resupply at any time, either individually or in convoys as required.

Organization for combat:

- Six LRVs (36 Soldiers);
- Four URVs (a section of two per scout section);

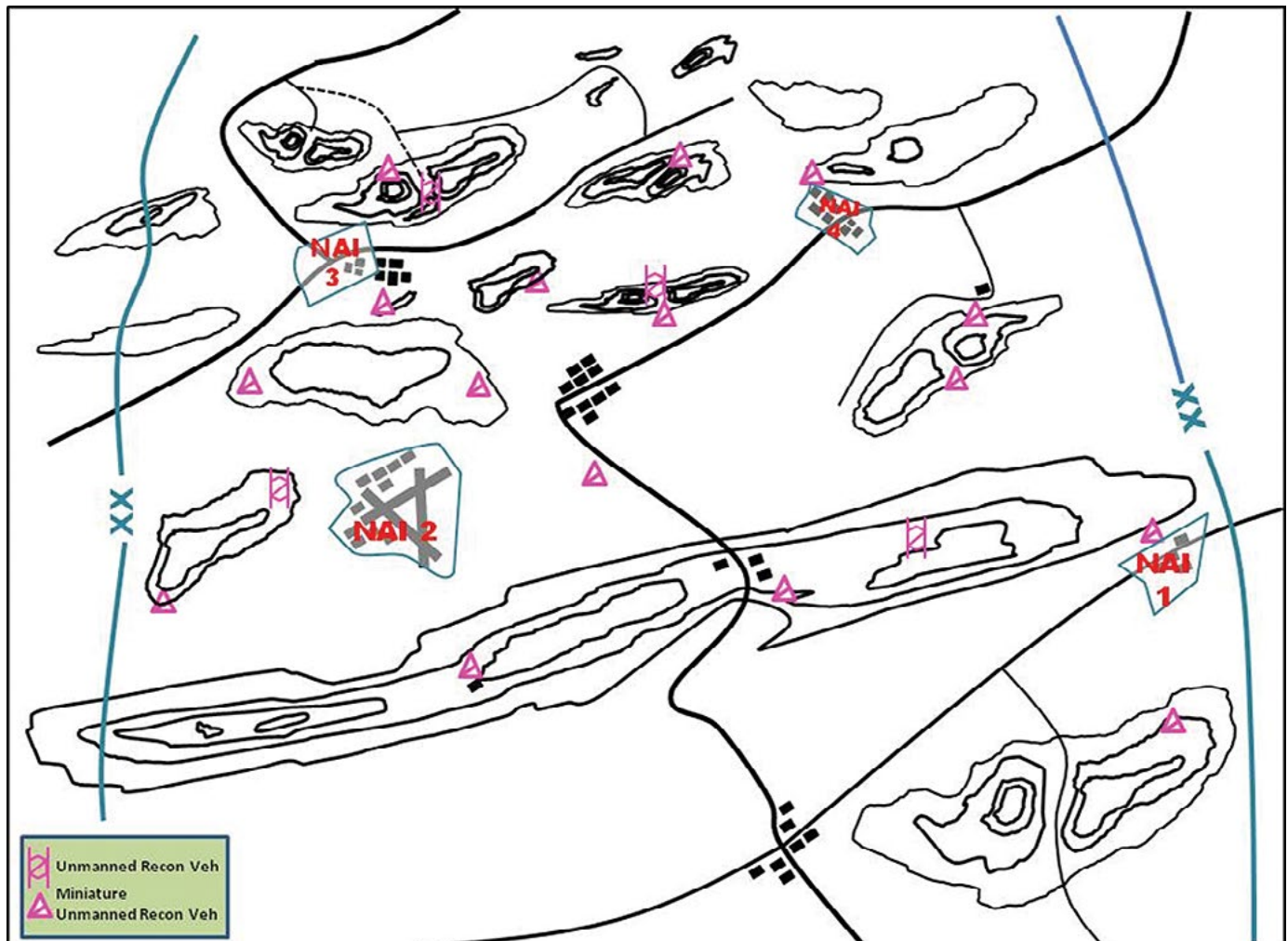


Figure 4. Special reconnaissance/surveillance.

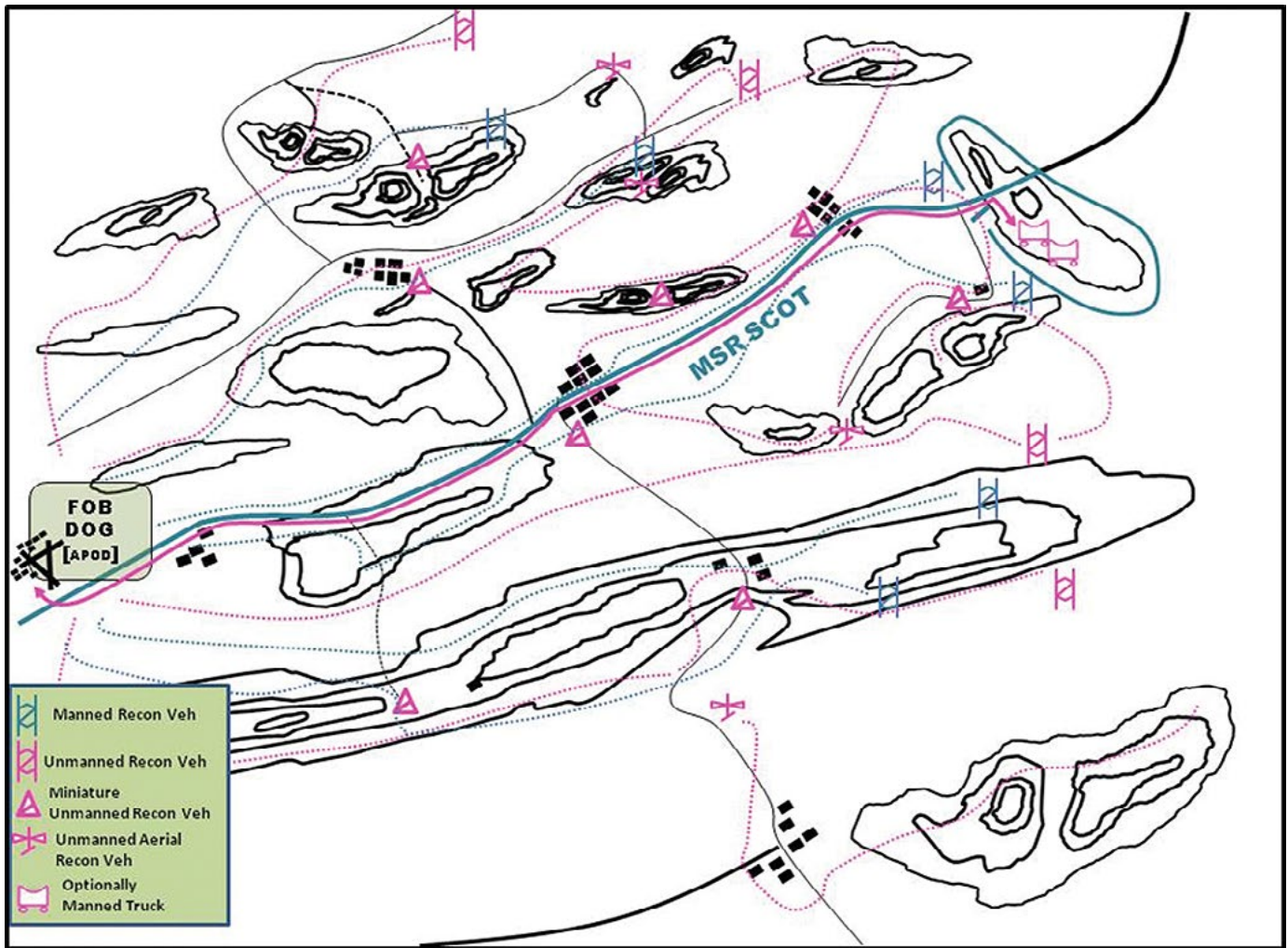


Figure 5. Route reconnaissance/autonomous convoy.

- Four unmanned tanks (two sections of two);
- Eight MURVs;
- Four UARVs;
- Two optionally manned cargo vehicles.

**CAM operational narrative:** For this mission, the standard six-vehicle scout platoon has been augmented by four URVs with a mix of MURVs and UARVs. Also, resupply of the company-team position once the route reconnaissance is complete is accomplished with optionally manned (in this case, unmanned) cargo vehicles. As part of the route-reconnaissance mission, the platoon and its attendant UARVs would conduct the normal tasks, with the unmanned systems preceding and operating to the flanks of the manned assets. This would allow the manned systems (scout squads) to deploy dismounts at specific locations (i.e.,

built-up areas, culverts, defiles) where there might be specific requirements for human action, such as talking with the local populace or investigating a suspicious item/activity that unmanned assets identified.

The use of the unmanned systems, particularly air assets, allows a faster and more comprehensive route reconnaissance. Also, the use of the MURVs allows the maintenance of security over the route once the moving reconnaissance assets (manned or unmanned) have moved forward.

As with the other vignettes, a platoon with augmentation by unmanned systems is able to accomplish a task that would otherwise require a troop or company-team, again allowing the higher commander to better manage his combat power.

**WAS operational narrative:** As we have seen in OIF and Operation

Enduring Freedom (OEF), there may be longer-term situations where we are constrained to the repetitive use of fixed lines of communication. Using AS – probably with additional counter-improvised explosive device/explosive ordnance detachment capabilities to conduct the actual route clearance – significantly reduces the risks to our Soldiers. AS also provide the capacity for persistent surveillance so that, unlike OIF/OEF, we are not forced to use forces repetitively to “re-clear” routes; the persistent and overlapping AS sensors can be used to monitor the route continuously and identify potential or confirmed threats, and then guide manned reaction capabilities to the target(s).

**Vignette 6: movement-to-contact**

**Task/purpose:** *Movement-to-contact* is an offensive task to develop the situation and establish or regain contact



with the enemy. It is normally used when the tactical or enemy situation is vague, when the enemy has broken contact, or when there is no time to reconnoiter extensively to locate the enemy. Contact results in initiation of another operation such as attack against a stationary or moving enemy force, defense, delay or withdrawal.

The fundamentals and techniques discussed here also apply to the approach phase of a hasty or deliberate attack; the main difference is the amount of enemy intelligence. In the approach phase of an attack, the enemy situation is clearer. Doctrinally, the force performing the movement-to-contact moves toward the objective in a way that avoids enemy detection and supports its deployment in the assault.

Organization for combat:

- Six armored multipurpose (reconnaissance/surveillance) vehicles (AMPVs) and four infantry

squads (36 Soldiers);

- Three UAVs;
- Four optionally manned AMPVs;
- Six MURVs.

**CAM operational narrative:** Autonomous-system placement extends the observation and identification range of the enemy force. This economy-of-force operation enhances situational awareness while preserving flexibility and enabling options for fire and maneuver. In this operation, six miniature unmanned ground-reconnaissance vehicles and three UAVs are teamed with partially manned AMPVs. They move toward the objective while avoiding enemy detection. Upon contact, the commander uses his unmanned assets to collect disposition information about the enemy and fix it while directing his approach of follow-on forces to the objective.

**WAS operational narrative:** Here we

can use AS to gain and regain contact with a withdrawing insurgent force while the manned assets perform recovery and assistance operations. Then we can use the unmanned assets to find and fix the enemy and have the manned assets engage them. Throughout WAS operations and in areas of special interest, AS can also help maintain local security. In this case, we integrate unmanned recon vehicles with other persistent stare assets and pair them with small teams to find enemy forces under cover.

**Vignette 7: feint and demonstration**

**Task/purpose:** A *feint* is an offensive task used to deceive the enemy of the location or time of the actual decisive operations or main attack. Its purpose is to deceive the enemy and cause him to react in a particular way, such as reposition his forces, commit his reserve or shift his fires. The feint seeks

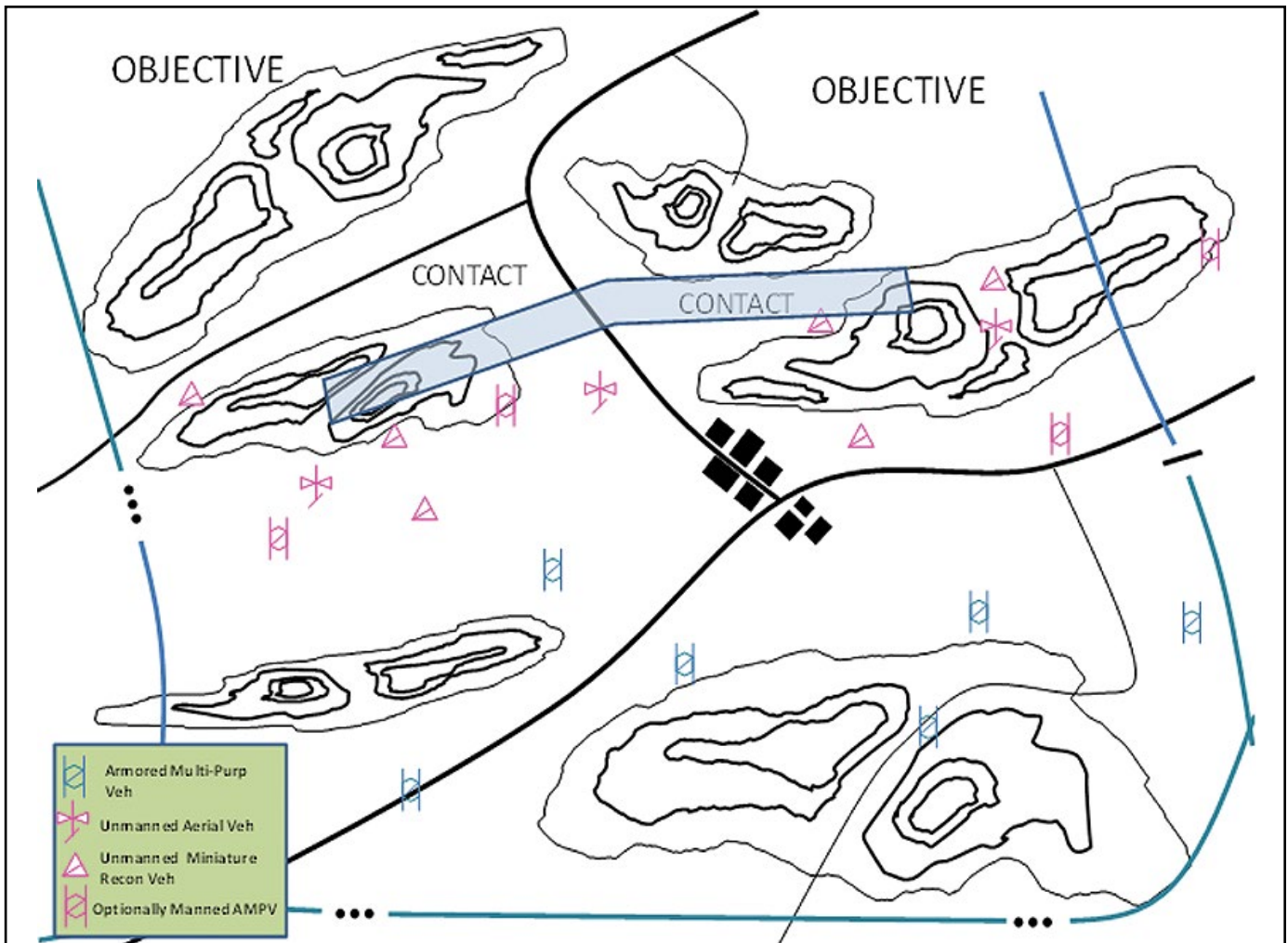


Figure 6. Movement-to-contact (traveling formation).

direct-fire contact with the enemy but avoids decisive engagement.

The *demonstration* is similar to a feint, but the friendly force does not seek to make contact with the enemy. One task would be to establish an attack-by-fire position beyond the enemy's direct-fire engagement range; the purpose would be to cause the enemy to commit a specific element simply by virtue of the positioning of the demonstration force.

Organization for combat:

- Six AMPVs (two control vehicles for unmanned tanks);
- Six manned tanks;
- Four unmanned tanks.

**CAM operational narrative:** Autonomy-enabled systems and robotic decoys are well suited to deceive the enemy and support a deliberate attack. These systems serve in an economy-of-force capacity, as they require little

supervision and allow the commander to weight the main effort with manned formations. In this operation, four unmanned tanks on the graphic's left side are under the control of two supervision vehicles. These unmanned tanks occupy positions that permit enemy observation, support deception and cause the enemy to react. This enemy reaction allows the commander to adjust his main effort of six manned tanks and four AMPVs accordingly and to attack in the most effective way.

**WAS operational narrative:** The opportunities for using these around an enemy organization or high-value target of interest are significant. Here we can use AS to either feint or demonstrate while friendly forces, as an example, are doing a snatch operation. In this case, we would use AS to move into the area of nearby building complexes to conduct the feint and defeat enemy surveillance and counter-surveillance systems.

In these types of operations, AS can send multiple messages, but the intent and object remains the same: to cause the enemy to react.

**Vignette 8: deliberate or area defense**

**Task/purpose:** A *deliberate* or *area defense* concentrates on denying enemy forces access to designated terrain, limiting their freedom of maneuver and channeling them into killing areas. This allows the defender to retain terrain the attacker must control to advance. The enemy force is drawn into a series of kill zones, where it is attacked from mutually supporting positions and destroyed, largely by fires. Commanders use the reserve to preserve the integrity of the defense through reinforcement or counterattack.

Organization for combat:

- Four AMPVs (one manned recon

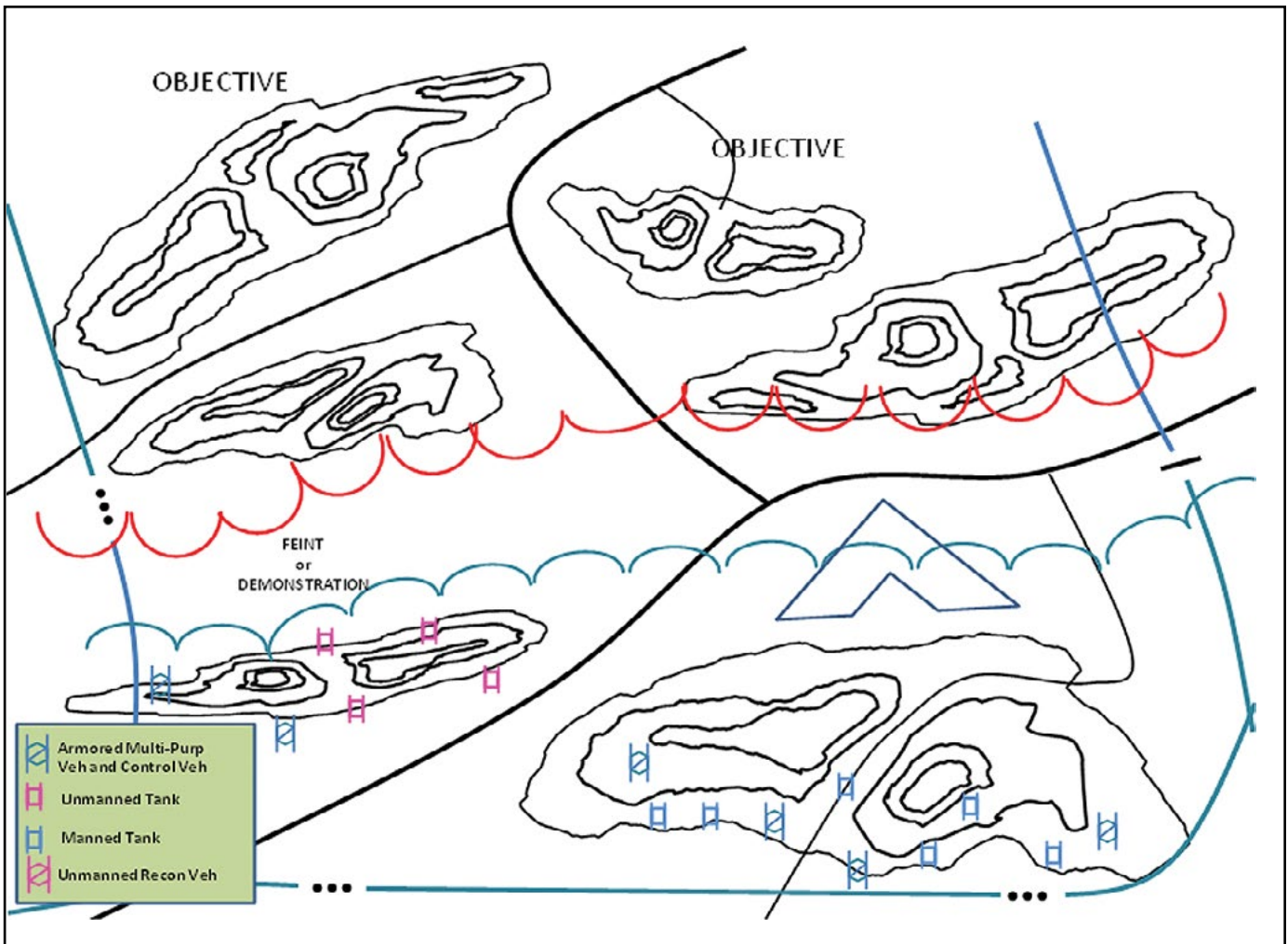


Figure 7. Feint and demonstration.

supervision vehicle teamed with one optionally manned recon vehicle) (two platoon leader vehicles);

- Two UAVs;
- Eight manned tanks;
- Four unmanned tanks;
- Two tank supervision vehicles (one with platoon leader).

**CAM operational narrative:** Autonomy-enabled systems are well suited in a deliberate defense to help draw the enemy into a kill zone. In this scenario, the AS “delay in sector/draw enemy forces into” the engagement area, where they will be met with fires and a manned tank platoon in reserve if necessary. Initially, in the company security area, a manned AMPV (supervision vehicle) is teamed with an unmanned AMPV recon vehicle that is outfitted with imagery, radar, acoustic detection and signal sensors. The manned AMPV is also teamed with two imagery-recon UAVs. The security force

withdraws across the battle-handover line (BHL). The manned platoon is forward and heavily engaged while the manned-unmanned team draws the enemy into the engagement area.

**WAS operational narrative:** Put in the context of establishing layered defenses around forward operating bases (FOBs) and combat outposts (COPs) simultaneously, we can use unmanned assets to establish and maintain security while manned forces are establishing and maintaining the FOB/COP. Their ability to enhance detection of enemy forces helps free up manned assets to engage the enemy with responsive fires.

In all these vignettes, AS is a force multiplier.

## Conclusion

The operating and fiscal environments the U.S. Army will have to navigate in the future will place an ever larger premium on our ability to increase the individual and collective capabilities of

our Soldiers and formations while reducing the risk to our deployed Soldiers and the resource cost to deploy, employ and sustain our forces. Autonomously-enabled formations provide a feasible way to achieve what are traditionally the competing and contradictory demands of increased capability at reduced cost (whether in terms of Soldiers or dollars).

The technical and the operational community operating collaboratively must develop a cohesive and comprehensive framework for working to the future to deliver greater capability per Soldier. Also, that objective capability must be viewed as a strategic objective, and we must determine how to move from the current construct (in DOTMLPF terms) to a future construct – and to what the intermediate constructs should or might be. Only through this collaborative, fully integrated approach can technology be focused well enough to provide our Army and our Soldiers with the capabilities needed to allow

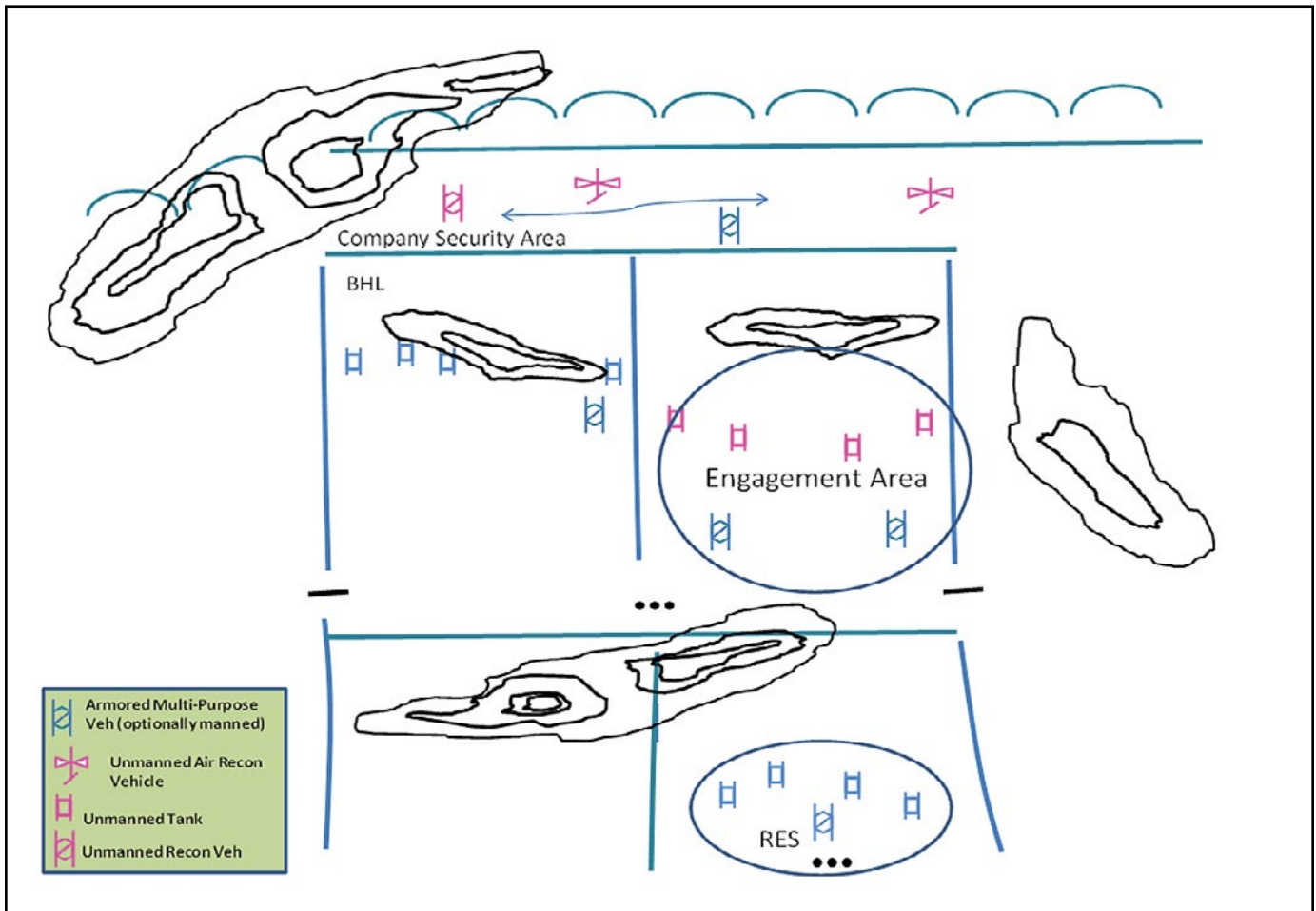


Figure 8. Deliberate and area defense.

Soldiers to focus on tasks only Soldiers can do.

We can no longer hide behind bumper stickers such as “dirty, dull or dangerous” to describe what we want from autonomous systems. It requires the appropriate intellectual energy to be expended in both U.S. Army Training and Doctrine Command (TRADOC) and Research Development and Engineering Command to ensure we are achieving disruptive capabilities. Something that is “disruptive” eventually becomes “the norm” (for example, the iPod, which drove the MP3 player revolution), so timing is key. But we must be able to deliver capabilities (whether incrementally or in substantial tranches) that present our adversaries with seemingly insolvable problems and that reduce the physical and cognitive burden on our Soldiers.

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## Acronym Quick-Scan

**A2AD** – anti-access/area denial  
**AMPV** – armored multipurpose vehicle  
**APOD** – aerial port of debarkation  
**AS** – autonomy-enabled system  
**BCT** – brigade combat team  
**BHL** – battle-handover line  
**CAM** – combined-arms maneuver  
**CONUS** – continental United States  
**COP** – combat outpost  
**DOTMLPF** – doctrine, organization, training, materiel, leadership and education, personnel and facilities  
**EO/IR** – electro-optical/infrared  
**FOB** – forward operating base  
**HAHO** – high altitude high opening  
**LD** – line of departure  
**LRV** – light reconnaissance vehicle  
**MPF** – mobile protected firepower  
**MSR** – main supply route  
**MTU** – Michigan Technological University  
**MURV** – miniature unmanned reconnaissance vehicle  
**NAI** – named area of interest  
**OEF** – Operation Enduring Freedom  
**OIF** – Operation Iraqi Freedom  
**PL** – platoon  
**RES** – reserve  
**TARDEC** – (U.S. Army) Tank Automotive Research, Development and Engineering Center  
**TRADOC** – (U.S. Army) Training and Doctrine Command  
**UARV** – unmanned autonomous reconnaissance vehicle  
**UAS** – unmanned aerial system  
**UAV** – unmanned aerial vehicle  
**URV** – unmanned reconnaissance vehicle  
**WAS** – wide-area security

# Mission Command on the Move

by MAJ Adam R. Brady,  
LTC Tommy L. Cardone and  
CPT Edwin C. den Harder

*“Commanders, assisted by their staffs, use the guiding principles of mission command to balance the art of command with the science of control. They use the art of command to exercise authority, to provide leadership and to make timely decisions. [They] use the science of control to regulate forces and direct the execution of operations to conform to their commander’s intent.” –Army Doctrine Reference Publication 6-0, **Mission Command***

Mission command is both a philosophy (art) and a warfighting function (science), according to Army doctrine. As a philosophy, it is centered on a commander’s ability to enable the execution of “disciplined initiative within the commander’s intent to empower agile and adaptive leaders” through the creation of trust, shared understanding and the acceptance of prudent risk.<sup>1</sup> Understanding and implementing mission command during the current decisive-action (DA) rotations at the National Training Center (NTC) is essential

to a successful training deployment. However, the level of implementation depends on the ability of commanders and their units to take a doctrinal concept and implement it into operations.

During NTC Rotation 14-10, from August to October 2014, 1-77 Armor Regiment, 4<sup>th</sup> Armor Brigade Combat Team (ABCT), 1<sup>st</sup> Armor Division, set conditions in garrison that resulted in the successful use of mission command.

## Training objectives

One of the primary training objectives within a DA rotation at NTC is to stress every system and Soldier at each echelon. This goes from the brigade level all the way down to the team. One way to do this is to create a fast operational tempo through the execution of battalion operations every 48 hours for the first six days of the rotation and brigade-level operations every 48 hours for the rest. This timeline ensures planning is continuous, including during execution of operations.

When the operational timeline is overlaid with the brigade planning timeline and requirements, there is very little

time for the battalion commander and S-3 to be present in the battalion command post (CP). In fact, during the 14-day rotation, there were only three full days when the battalion commander and operations officer (S-3) were present in the CP. Therefore, company commanders and battalion staff had to be empowered in a way that allowed the battalion to function appropriately before arrival at NTC. This required the battalion to maximize every opportunity in garrison to inculcate the philosophy of mission command into Task Force Steel Tigers.

This was no small challenge. The battalion had a complete turnover of field-grade officers between June and August 2014. The battalion commander took the colors in early June; the S-3 reported to the unit in the middle of the division validation exercise in July; and the battalion executive officer arrived three days before leaving for NTC at the end of August. The continuity of the unit was found at the command sergeant major and captain level. Every member of the staff had more time in the battalion than the field grades.

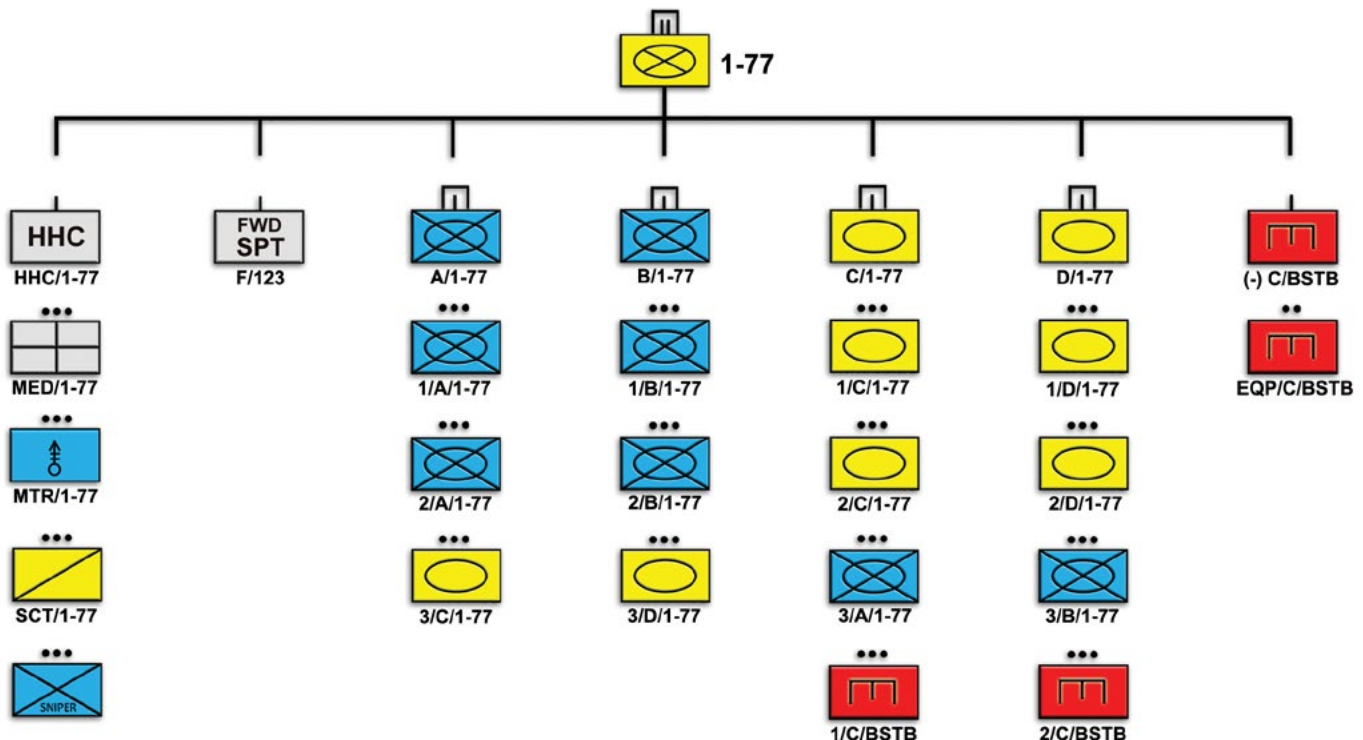


Figure 1. Task Force Steel Tiger standard task organization.

However, within the S-3 shop, there was more turmoil. The previous assistant S-3 was assigned as the rear-detachment commander; another member of the staff was medically non-deployable; and the task-force engineer and battalion fire-support officer (FSO) positions were unfilled. This resulted in the battalion plans officer assuming the roles of assistant S-3 and plans officer; the attached engineer-company commander filling a dual role as the task-force engineer; and a company FSO being pulled up to act as the battalion FSO.

This personnel shortage is not uncommon but can contribute to significant functionality issues if mission command based on trust is not implemented in such a time-constrained environment.

## Sowing seeds

The initial seeds of the mission-command philosophy were sown during the division validation exercise conducted just before our NTC rotation. The one task-force operation, a battalion attack with an in-stride combined-arms breach, provided an opportunity for the battalion commander, with the support of staff, to set

the mission-command philosophy by simplifying the orders process via using standing operating procedures (SOP). Each company within the task force had a previously specified task organization and task/purpose based on mission type (Figure 1). The battalion always moved in a diamond formation with our Charger Company (armor company team) in the lead element as an “advance guard”; Able and Baker companies (mechanized company teams) on the flanks; and our Dog Company (armor company team) in the rear as shown in Figure 2. This standard formation was the basis for all our assembly area and maneuver operations. Tactically, Baker would be the support-by-fire (SBF) element; Charger was the breach element with habitually attached engineer assets; Able was the assault force; and Dog acted as the reserve/exploitation force if not detached through brigade orders.

We created the battalion’s tactical CP (TAC) during the same division validation exercise. According to Army Tactics, Techniques and Procedures Publication 5-0.1, a TAC contains “a tailored portion of a unit headquarters designed to control portions of an operation for a limited time.” Our TAC

consisted of the commander’s M1A2SEPV2 or M998 humvee; the S-3’s Bradley Fighting Vehicle; an M1068 CP vehicle with the assistant S-2 and a battle captain; a fires vehicle with the battalion FSO; and the attached Joint Terminal Attack Controller element in its own vehicle.

We attempted many configurations by using different vehicles, alternate capabilities and different personnel. However, given some constraints on communications capabilities, we settled on the configuration previously described. The M1068 was fitted with a mast antenna, allowing it to be raised when the vehicle was stationary. The increased height of the antenna provided significantly increased range for frequency-modulation communications. This vehicle and personnel package facilitated the battalion commander’s role in the operations process while circulating around the battlefield (Figure 3). This package also provided the commander the ability to integrate fires and maneuver the element.

The TAC also supported the commander’s ability to use mission command as a warfighting function for the battalion. In Task Force 1-77 Armor Regiment, the battalion commander empowered the operations officer to maneuver the battalion based on shared understanding, commander’s intent and trust, which are key components within mission command. By removing the need to constantly talk on the radio to maneuver subordinate elements, the commander was able to monitor and digest the net traffic to “understand” the battlefield, maintain situational awareness through Blue Force Tracker and “visualize” by being at the front. This allowed the commander to better “direct” the battalion. This delineation of tasks created a form of mission command tailored for the team that had been built.

The battalion CP included the operations sergeant major, S-3 plans officer/assistant S-3, S-2 and S-6, and the rest of the fires personnel. The battalion executive officer then could oversee planning for the next operation while also supporting current operations the battalion TAC was controlling. Due to communication constraints inherent in operating across long distances, the

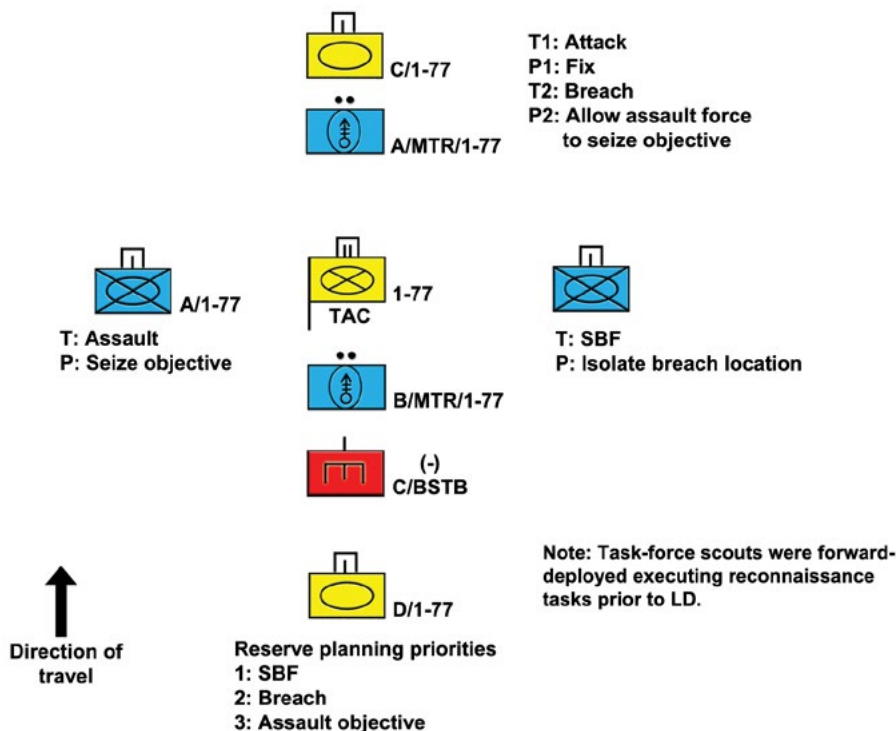
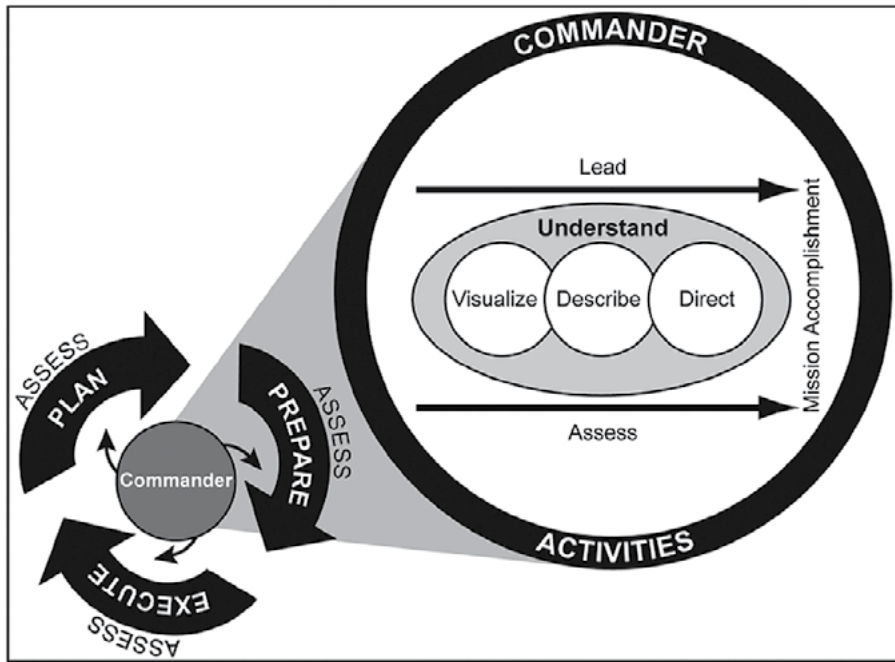


Figure 2. Task-force diamond formation – the standard formation for all battalion operations.



**Figure 3. The commander's role in the operations process.** (From Army Doctrinal Publication 6-0)

battalion CP was also prepared to provide relay support from the TAC to the brigade CP.

## Leader training

The brigade conducted its leader training program (LTP) without company commanders because the rail load was happening at the same time at home station. To compensate, the battalion conducted a very detailed brief to its company command teams and staff to highlight the intelligence preparation of the battlefield and enemy best practices. Also, the "situation" paragraph of the base operations order described the effects of terrain and enemy employment prior to deployment to NTC.

The battalion commander also developed the team through map drills with company commanders that covered expected operations and movement techniques through known enemy areas. Then the battalion conducted classes specifically focused on operations at NTC. These classes, given to platoon leadership and above, focused on taking away some of the mystery of an NTC rotation by providing the SOPs for conducting medical and casualty evacuations, vehicle and personnel regeneration, and maximizing the Multiple Integrated Laser Engagement Systems. This created a robust understanding and served as a way to "build

a cohesive team built on mutual trust and shared understanding" two levels down.<sup>2</sup>

By creating a standard formation, laying out basic tactical responsibilities and briefing a detailed modified combined-obstacle overlay, the battalion commander created an environment where mission orders could be efficiently created based on a clear commander's intent and shared understanding while current operations were being conducted. This ensured subordinate leaders had as much time as possible to conduct troop-leading procedures (TLPs), resulting in a more efficient orders process during NTC's time-constrained environment.

## Vignette

The first six days of NTC Rotation 14-10 involved battalion-level lanes consisting of offense, defense and live-fire operations. Operations were based on the battalion commander's training objectives and conversations with the observer/controller/trainer (O/C/T) lead and unit senior trainer. Our LTP did not involve conducting any planning directly applicable to our rotation, so we had to produce four battalion orders within a five-day period. In the case of our battalion, we executed task-force lanes in the following order: offense, live-fire and defense. To maximize our training

opportunities, the O/C/T provided order shells that were about 50 percent to 60 percent complete. When combined with the tactical road-march order produced during the four-day reception, staging, onward movement and integration process, these battalion order shells ensured we had the opportunity to be successful and learn as a task force.

The compressed timeline of the NTC required the orders brief for the task-force offensive lane be conducted on the morning of Training Day (TD) 1 to ensure companies had adequate time to conduct their TLPs before the start of patrol the morning of TD 2. To execute the required dry runs for the task-force live fire on TD 3, the opord for the live fire was conducted the day before execution of the offensive lane on TD 2. This allowed the task force to conduct a combined-arms rehearsal about eight hours before line of departure (LD) for the live-fire dry run.

Once complete with the combined day/night dry run (attack and combined-arms breach during daylight, repel counterattack during darkness), the companies prepared their LD for the live run at 3 p.m. the following day (TD 4). At 7 a.m., eight hours before LD for the live run, the opord for the follow-on operation was given. This operation was planned with very little input from the battalion commander or S-3 due to the nearly continuous operations during the 48 hours prior. In fact, the first time the plan was briefed in its entirety to either leader was during the opord brief. Based on the shared understanding created during the one task-force attack executed prior to NTC; briefings and classes conducted with platoon leadership and above; and a clear intent provided early in the planning process, the battalion commander was able to influence the planning process while allowing the battalion staff to adhere to the one-thirds/two-thirds planning rule for subordinate units.

There is no doubt the training objective to stress every system within a unit was met during NTC Rotation 14-10. Every leader from team level through battalion level felt the impact of the time-constrained and complex environment created during the DA

rotation. The methods used by Task Force Steel Tigers, and the opportunities provided by the O/C/T team at NTC, created a situation where the battalion was able to run continuous operations while providing an environment to empower agile and adaptive subordinate leaders to exercise disciplined initiative within the commander's Intent. By taking advantage of every opportunity to implement mission command prior to our deployment to NTC, Task Force Steel Tigers were prepared for success during NTC Rotation 14-10.

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*ABCT, 1<sup>st</sup> Armored Division, Fort Bliss, TX/Djibouti (deployed to Combined Joint Task Force-Horn of Africa). His past duty assignments include assistant professor, Department of Geography and Environmental Engineering, U.S. Military Academy, West Point, NY; troop commander, Company B, 3-4 Cavalry, 3<sup>rd</sup> Infantry Brigade Combat Team, 25<sup>th</sup> Infantry Division, Schofield Barracks, HI/Iraq; executive officer, Headquarters and Headquarters Company (HHC), 1<sup>st</sup> Battalion, 66<sup>th</sup> Armor Regiment, 1<sup>st</sup> ABCT, 4<sup>th</sup> Infantry Division, Fort Hood/Iraq; and tank-platoon leader, Company A, 1-66 Armor Regiment, 1<sup>st</sup> ABCT. His military schooling includes Armor BOLC, Armor MCCC, Cavalry Leader's Course and ILE distance learning. MAJ Brady holds a bachelor's of science degree in environmental science from U.S. Military Academy and a master's of science degree in environmental science and engineering from Colorado School of Mines.*

*CPT Edwin den Harder commands D/1-77 Armor Regiment, 4/1 Armor Division, Fort Bliss, TX. His past duty assignments include battalion assistant S-3 and plans officer for HHC 1-77 Armor Regiment; squadron plans officer and squadron personnel officer, HHC, 4/2 Cavalry Regiment, Vilseck, Germany; surveillance troop executive officer, Troop N, 4/2 Cavalry; and reconnaissance-platoon leader, Troop L, 4-2 Cavalry Regiment. His military schooling includes Cavalry Leader's Course, MCCC, Armor BOLC and Airborne*

*School. He holds a bachelor's of arts degree in military history from the U.S Military Academy.*

## Notes

<sup>1</sup> ADP 6-0.

<sup>2</sup> Ibid.

## Acronym Quick-Scan

**ABCT** – armor brigade combat team  
**BOLC** – basic officer leader's course  
**BSTB** – brigade special troops battalion  
**CP** – command post  
**DA** – decisive action  
**EQP** – equipment  
**FSO** – fire-support officer  
**FWD SPT** – forward support  
**HHC** – headquarters and headquarters company  
**ILE** – intermediate-level education  
**LD** – line of departure  
**LTP** – leader training program  
**MCCC** – Maneuver Captain's Career Course  
**MED** – medical  
**MTR** – mortar  
**NTC** – National Training Center  
**O/C/T** – observer/controller/trainer  
**SBF** – support-by-fire  
**SCT** – scout  
**SOP** – standard operating procedure  
**TD** – training day  
**TLP** – troop-leading procedures  
**TAC** – tactical command post



# Mission-Command Culture: A Leader-Subordinate Contract

by LTC Chad R. Foster

*“Culture is established by the people who compose your team and is carried on through those people. ... But you cannot merely expect culture to be a natural occurrence; it has to be taught and made a part of your everyday routine.” -Mike Krzyzewski, **Beyond Basketball** (2006)*

Mission command is much more than a philosophy or a warfighting function. It is a culture that permeates every aspect of organizational activity, from routine staff meetings and field training to actual combat operations. At its heart, this culture is built on a contract of mutual trust and respect between leaders and subordinates. There is no middle ground – this contract either

exists in a unit or it does not. Leaders and those under their charge have specific obligations to each other and to the unit. There are also significant costs all parties must accept as the price of building a climate of trust where prudent risk-taking and experimentation is rewarded and decentralized execution is the norm. This makes for an often messy arrangement, but the contract is necessary for a unit to build and maintain a mission-command culture.

Army doctrine simultaneously refers to mission command as a philosophy and as its own separate warfighting function, but neither of these designations is adequate alone. A philosophy connotes a primarily theoretical endeavor,

focusing on an individual’s personal motivations and his way of thinking. While having the right mindset is essential in facilitating mission command, a direct link between what is in a leader’s mind and his external actions is necessary. Designating mission command a warfighting function also falls short of the mark because, despite the nuanced language used in its definition, it implies certain tasks lay within the scope of mission command while others do not. What the Army really hopes to achieve is the manifestation of mission-command principles in the beliefs and actions of individuals and in the collective norms of organizational activity. In short, the Army’s true goal is a culture of mission command.

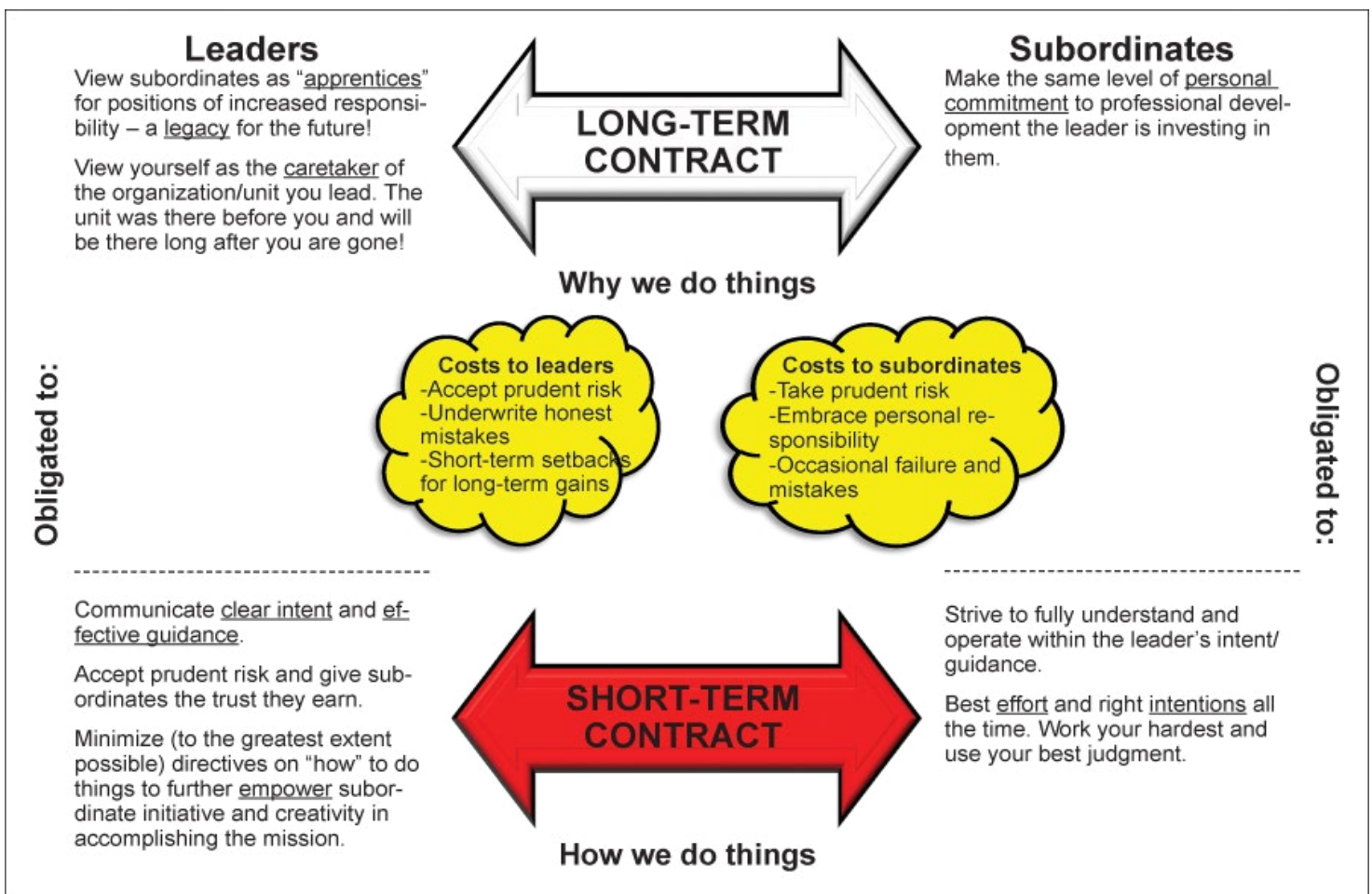


Figure 1. Mission-command culture: a contract based on mutual trust and respect. (Based on the senior-subordinate contract concept articulated by William S. Lind in the *Maneuver Warfare Handbook*)

## Trust a must

For such a culture to emerge, a bond of mutual trust must exist between leaders and subordinates. This trust only develops over time when words combined with actions clearly and consistently demonstrate a commitment to the principles of mission command in everything a unit does. If these principles seem not to be applied in even one category of organizational activity, the leader's commitment will be perceived as incomplete and, therefore, will limit the level of trust given by subordinates. In this way, mission command is an all-or-nothing proposition. For example, a leader who micromanages the unit while in garrison cannot realistically expect subordinates to suddenly exercise disciplined initiative in a field environment. Subordinates quickly sense half-measures and adjust their conduct accordingly.

However, zeal cannot override common sense. A commitment to mission command does not mean a refusal to give detailed directives when the situation demands. The most effective practitioner of decentralized operations recognizes when conditions require more specific instructions, and a good leader does not hesitate to issue them. However, a leader committed to mission command recognizes these situations are the exception rather than the rule. Because of this, the leader takes the time to explain to subordinates why they are deviating from mission-command principles for the given situation. Such explanations – and a quick return to normal practice – ensure the bond of trust remains unbroken.

To understand what mission-command culture is and what achieving it entails, think in terms of a two-part contract between leaders and subordinates (Figure 1). William S. Lind, author of the *Maneuver Warfare Handbook*, first articulated this idea as a way to understand the specifics of mission orders. However, his concept of a contractual agreement between leaders and subordinates has a greater utility when expanded to apply to the entire organizational culture of a unit. Like other contracts, this one is a voluntary arrangement that carries with it very specific obligations and costs. If

unwilling or unable to live up to these obligations or to pay the associated costs, leaders and their subordinates will not be able to operate within (or contribute to) a mission-command culture.

The first part of this contract provides the long-term context by establishing how the parties involved are obligated to view themselves, other members of the team and their place within the organization. Leaders must consider themselves as merely the current caretakers of a unit that has a long and proud history – one that existed before their arrival and that will continue long after their departure. Doing so encourages personal humility and a desire to make a positive contribution to the unit's history. That contribution comes by treating subordinates as "apprentices" for positions of increasing responsibility. It is not enough just to train them for their current duties. Instead, the leader must help develop each member of his team both professionally and personally as a legacy for the future. In turn, the subordinate's obligation is to make a commitment to his own self-development that matches what the leader is investing in him.

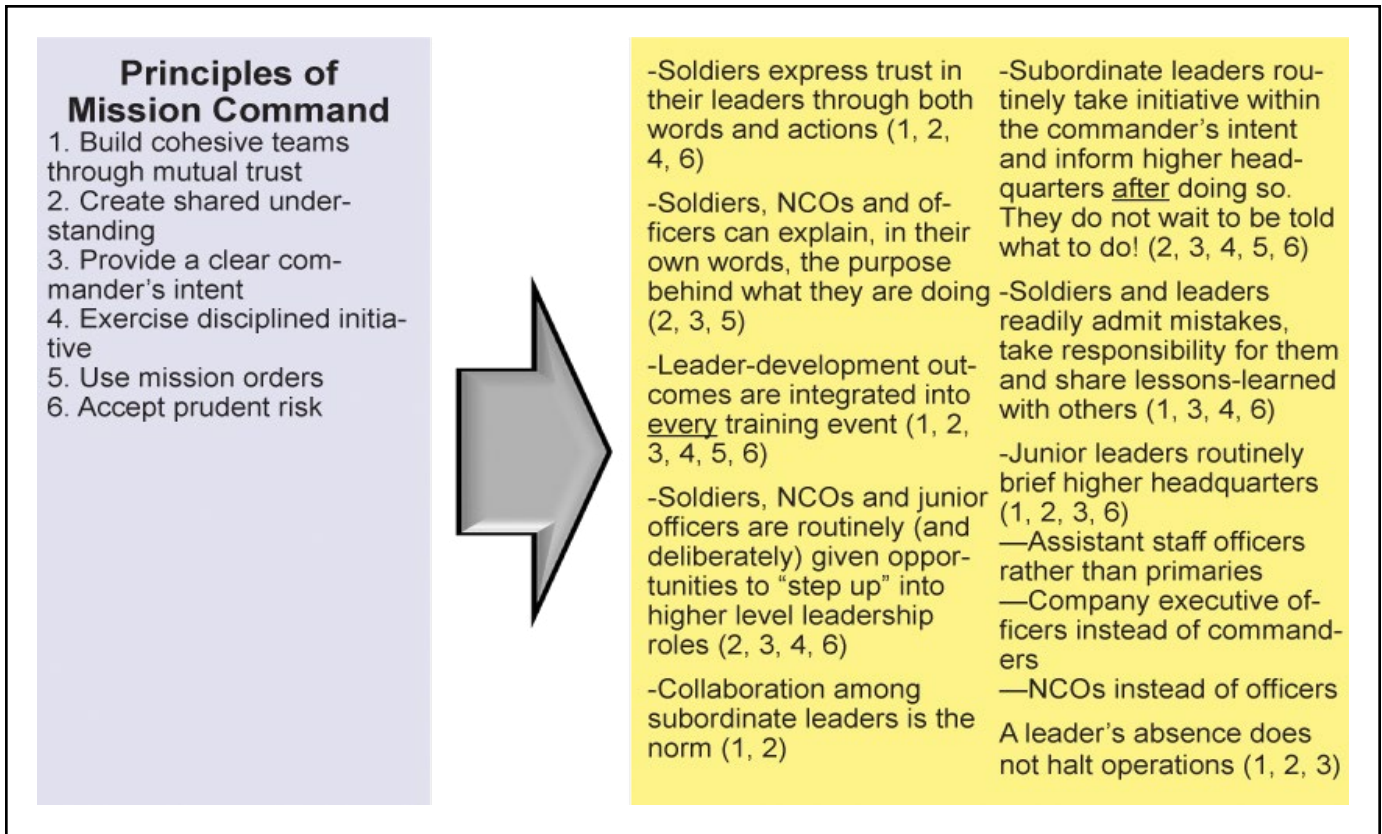
Meeting the short-term obligations of the mission-command contract is the immediate and tangible expression of the long-term agreements previously described. Success hinges on the leader's ability to provide clear and effective guidance that is useful to subordinates when developing their own plans for mission accomplishment and in making on-the-spot decisions as the situation changes. Leaders must issue only the minimum amount of directives on exactly how to complete assigned tasks, demanding that subordinates exercise disciplined initiative and creativity within the boundaries of the leader's intent. Underwriting honest mistakes along the way is vital as long as individuals learn and grow because of them. Such top-cover does not extend to legal, moral and ethical lapses. Errors made with the right intentions, in honest pursuit of the assigned objective, are the natural cost of building and maintaining a mission-command culture.

Risk is inherent in this contractual agreement. Leaders must accept the

risk of subordinates making mistakes that result in short-term setbacks. These setbacks might cost the leader (and possibly the unit) a bit of temporary recognition, but the long-term payoffs are well worth it. These payoffs come in the form of empowered subordinates who trust their superiors and thrive in the types of conditions that demand disciplined initiative and decentralized operations. Leaders who are unwilling to accept this cost because of a zero-defect mentality or a desire for personal advancement are unfit for their position because they have not defined success as growing the next generation of adaptive Soldiers, noncommissioned officers (NCOs) and officers. Leaders must resist the temptation to violate the contract, even if they see a peer gaining more short-term success by centralizing decisions and punishing those who experiment in the spirit of exploiting an opportunity.

Results achieved through micromanagement or toxic-leadership practices are invariably short-lived and detrimental to the morale and long-term health of the unit. They erode trust and fail to create a climate that will foster the initiative needed to beat a thinking enemy at the point of contact. Likewise, a subordinate who lacks the courage to exercise initiative cannot earn the full trust of his superiors. Team members must accept that temporary failures will, in the long run, pave the way to greater success because of the learning and professional growth that take place because of them.

Determining exactly how to put this contract into practice is difficult. There is no single "right" answer when establishing a mission-command culture because each situation is unique. However, assessing progress is possible by focusing on observable indicators (Figure 2). Almost none of these indicators are "inputs," meaning that few are actions or directives imposed by higher headquarters. Instead, they are descriptive outcomes that are observable at all levels by anyone with the inclination to look and listen. There are many tools at a leader's disposal to help with assessments, but for most of these indicators, all that is required are a leader's eyes and ears. Asking pointed



**Figure 2: Establishing a mission-command culture: indicators of success.**

questions at the right time to the correct individual or group will reveal far more than the most detailed Power-Point briefing. The only way to find out what is really happening inside subordinate formations is to seek unfiltered contact with the Soldiers, NCOs and junior officers within those units. Unscripted encounters and focused observation are the keys to determining where a unit really stands when establishing a mission-command culture.

## Summary

Mission command is just the latest label for a concept of empowered leadership that has existed throughout the history of military operations. It is not something that can be selectively applied. Mission command is a culture that binds the members of the organization together through a contract of mutual trust and respect. This contract provides purpose and a guide to action for all involved. More to the point, it creates the conditions for adaptive leadership to blossom by empowering

leaders to make decisions at the lowest appropriate level. None of these ideas are new or ground-breaking. In fact, most of the points articulated in this article are quite simple and well-known.

But as many have discovered, even the simplest of things is often difficult. To help ensure a unit is "getting it right," leaders must observe their formations closely and ask the tough questions of the right people within the organization, including themselves. Also, subordinates must have the courage to accept prudent risk and exercise disciplined initiative within the guidance of the leader's intent. Only when this level of commitment from both leaders and subordinates is present does the unit have a chance of achieving a mission-command culture.

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## Acronym Quick-Scan

**NCO** – noncommissioned officer  
**USMA** – U.S. Military Academy

# Mission Command and Mental Block: Why the Army Won't Adopt a True Mission-Command Philosophy

by MAJ Thomas A. Rebuck

*"Just before I moved on, some staff officer present said, 'Why, your men are not loaded. Why do you not make them load?' I replied, 'Because if we do not do the business with the bayonet, without firing, we shall not be able to do it at all, so I shall not load.' I heard Lord Wellington, who was close by, say, 'Let him alone; let him go his own way.'" -MAJ George Napier, 52<sup>nd</sup> Foot (from his account on the storming of Ciudad Rodrigo, Jan. 19, 1812)<sup>1</sup>*

For two decades, the U.S. Army has attempted and failed to implement effective institutional reform. Although its efforts have seemingly resulted in significant modifications to organization and doctrine, these changes have had minimal, if indeed any, positive impact. Besides the adoption of top-heavy and unsustainable tables of organization and equipment (TO&E), it has done little to cultivate adaptive, flexible leaders or implement a true mission-command philosophy.

This is not surprising given our bureaucratic, managerial mindset, with its pathological fear of uncertainty and squeamish aversion to risk. Rather than cultivating the qualities and virtues that enhance operational effectiveness, we focus on the quantifiable aspects of scientific management, obsessing over administrative minutia and check-the-block procedural methodology. Without significant change to this institutional perspective, the odds of us "transforming" the Army into a **truly** "expeditionary" force – commanded by adaptive and flexible leaders who use mission command to execute decisive action – are, frankly, dismal.

This has particular significance for the Armor/Cavalry Branch. The dispersion and rapid tempo of mounted combined-arms warfare requires a high degree of initiative and independence by subordinates for its effective execution – initiative and independence enabled by a mission-command philosophy. Conversely, a mission-command

philosophy requires the cultivation of adaptive and flexible leaders, the development of which is undermined by the demand for adherence to check-the-block procedural methodologies and processes. Finally, in the fiscally austere environment we currently face (caused to a great extent by the TO&E bequeathed to us under modularity), it is our mounted "heavy" forces that are first in line for the chop when Army bureaucrats determine which units to cut.

This article will offer an alternate framing of both the problem and the requisite solutions for resolving this dilemma. First, it will provide an alternate perspective of mission command. Second, it will discuss how scientific management undermines the development of leaders capable of using mission



command. Third, it will explain why our current modular, brigade-based structure does not support a mission-command philosophy.

## Mission command

Mission command is the practice of decentralizing decision-making and authority down to the lowest possible echelon, to include cultivating the initiative of the individual Soldier. It permits the immediate execution of decisive action in the event there is no guidance from higher headquarters or that guidance no longer conforms to the situation. It is an outcomes-based philosophy with little use for hard and fast principles or rules of war. "Soldiers must be thoroughly conscious of the fact that only results matter," writes Martin Van Creveld.<sup>2</sup> Rigid adherence to protocols, checklists and processes are anathema to mission command since this stifles the initiative, creativity and innovation of subordinates.

Mission command is also a philosophical contract between the commander and his subordinates based on mutual trust, understanding and confidence. This relationship requires that the commander provide clear and unambiguous guidance while allowing Soldiers the greatest possible latitude in accomplishing the assigned task(s). Notes Van Creveld, as part of this relationship, "[I]imits as to the method of execution within the framework of the higher commander's will are imposed only where essential for coordination with other commands."<sup>3</sup> In turn, the subordinate exercises this latitude within the parameters of his assigned mission unless "it no longer suffices for the basis for action, or if it is overtaken by events."<sup>4</sup> In this case, the subordinate who "changes a mission or does not carry it out must report his action immediately and ... assumes responsibility for the consequences."<sup>5</sup>

Mission command is not a doctrine in the sense that it can be codified in regulations. Neither should it be lumped together with technology or check-the-block procedural methodologies and artificially categorized as a "warfighting function." Mission command is a personal and organizational mindset that must permeate every aspect of an institution's existence.

## Army's perception of mission command

The U.S. Army has a different conception of mission command. According to Army Tactics, Techniques and Procedures (ATTP) publication 5-0.1, *Commander and Staff Officer Guide*, mission command is defined as "the exercise of authority and direction by the commander using mission orders to enable **disciplined initiative** within the commander's intent to empower agile and adaptive leaders. ... It is commander-led and blends the art of command and the **science of control** [emphasis added]."<sup>6</sup>

While mission command is indeed "commander led" and requires "agile and adaptive leaders" for its implementation, the similarities end there. It is **not** a "blend" of art and science, for it functions entirely within the realm of art. It has nothing to do with **control** since the entire concept of mission command is based on the premise that control, under the dispersed and fast-paced conditions of modern warfare, is problematic if not impossible. Finally, it places no caveats on the exercise of initiative.

The implications are obvious; subordinate leaders cannot be trusted to act responsibly (disciplined initiative) outside the direct supervision (control) of higher headquarters. Conformance is to be imposed upon subordinates rather than relying on innate professionalism and conscientiousness to guide their actions. Such thinking is antithetical to a mission-command philosophy: "It is no less important to educate the soldier to think and act for himself. His self-reliance and sense of honor will then induce him to do his duty **even when he is no longer under the eye of his commanding officer** [emphasis added]."<sup>7</sup>

The compulsion to overmanage subordinates reflects a tendency within the U.S. Army to "try and foresee situations and lay down modes of behavior in great detail."<sup>8</sup> This was noted by former German officers convened in the 1950s to comment on a revised Field Manual 100-5. In contrast to the hesitance exhibited by the U.S. Army to unleash its subordinate leaders, these gentlemen noted:

"The task of regulations – besides transmitting basic information and points of view concerning command and battle – is to educate. The main goal of this education should be to inculcate:

- A high degree of independence of all grades of command;
- The need for mission-oriented discipline — **i.e., the inner duty always to handle in accordance with the mission given** [emphasis added];
- Free creativity; and
- Making 'whole' (i.e., clear and unambiguous decisions) and carrying them out by concentrating all forces."<sup>9</sup>

Note that "mission-oriented discipline" places no caveats on the exercise of initiative, nor does it promote external supervisory **control** over the actions of subordinates. It also unequivocally asserts that art, not science, is the essential element of mission command. The U.S. Army's inability or refusal to make similar explicit assertions makes its endorsement of mission command – and, by extension, the empowerment of "agile and adaptive leaders" – meaningless.

Of all the Army's assertions regarding mission command, "science of control" is the **least** applicable description. Mission command is a response to the dispersed and fast-paced nature of modern warfare. This dispersion and speed makes it difficult, if not impossible, to "control" subordinate units in the chaos of combat. Even if control were feasible however, it is still not desirable: "The emptiness of the battlefield requires soldiers who can think and act independently, who can make calculated, decisive and daring use of every situation."<sup>10</sup> Only if events go excessively awry or circumstances change drastically will intervention by higher headquarters be justified.

The willingness to allow subordinates the requisite level of freedom to attain decisive results – the essence of mission command – is exemplified by the operations order written by Hans von Seeckt for the Gorlice Offensive in May 1915. It provides eloquent testimony to the difference between an operationally oriented army and a

managerial, bureaucratically inclined and risk-averse organization: "The attack ... must be pushed forward at a rapid pace. ... Thus the Army cannot assign the attacking corps and divisions objectives for each day, lest by fixing them the possibility of further progress may be obstructed. ... Any portion of the attacking troops which is successful in pushing on will expose itself to the danger of envelopment. Thus, the troops that least deserve it may meet with disaster as a result of their own rapid advance. Consideration of this possibility makes it necessary for the Army to fix certain lines, which should be reached by the force as a whole, and if possible simultaneously. Any progress beyond these lines will be thankfully welcomed by the Army and made use of."<sup>11</sup>

Note the contrast with the extremely detailed orders typical of the U.S. Army, which sets "maximum, not minimum, lines of advance and insists on an exact alignment of advancing troops as well as strict timetables."<sup>12</sup> Von Seeckt's order is the embodiment of mission command, encouraging subordinate leaders to exercise genius and "exploit each situation in a thoughtful, determined and bold way."<sup>13</sup>

The compulsion to micromanage extends beyond the tight control of subordinates. It also encompasses the unrealistic desire to impose order on the chaos of combat itself rather than accept the inevitability of its tumult, turmoil and confusion. Under these conditions, "[i]ncalculable elements often have the decisive influence. One's own will is pitted against the independent will of the enemy. Friction and errors are daily occurrences."<sup>14</sup> The Army would rather implement "scientific" management methods, procedures and planning processes (in other words, military decision-making process (MDMP), joint operation-planning process and operational design) than develop leaders and cohesive organizations that thrive in and exploit these conditions.

## MDMP and genius suppression

The most troubling aspect of the Army's bureaucratic mindset is the relegation of commanders from the role of

leader to manager/administrator-in-chief. The cause of this is multifold, not the least of which is the Army's latent assumption that administrative exactitude is the penultimate expression of military virtue. It is also the result of "scientific" management methods and planning processes – and the oversized staffs that support them.

Commanders have primary responsibility for operational planning, not the staff! While delegating detailed planning and supervision in specific functional areas, they must assume hands-on involvement in planning and refinement of the scheme of maneuver. Simply tossing "guidance" to the staff, then picking and choosing a course of action based on their analysis and conclusions is not the proper exercise of leadership or command and is anathema to the concept of mission command.

This approach not only marginalizes the participation of commanders in the planning process, it encourages microanalysis, microplanning and micromanagement by the staff, thus suppressing the exercise of genius at all echelons. It should be noted that by genius we are not referring to an individual possessing extraordinary abilities but to the capacity for every Soldier to apply creative and inspirational solutions to battlefield problems. Because MDMP (etc.) revolves around the accumulation and analysis of quantifiable facts and data rather than the intangible aspects of combat, it is unlikely to produce similar results since "[o]ften it is precisely those factors that cannot be measured that are of the greatest importance."<sup>15</sup> Staff-centric planning and MDMP produce "safe" plans; creative genius attains decisive results.

While effective leaders invite recommendations and incorporate good ideas from the staff, it is ultimately the commander's ability to plan and act decisively that matters. No procedural methodology or bureaucratically oriented decision-making process can change this: "[I]t is simply not possible to construct a model for the art of war that can serve as a scaffolding on which the commander can rely on for support at any time. Whenever he has to fall back on his innate talent, he will find himself outside the model and in

conflict with it; no matter how versatile the code. Talent and genius operate outside the rules, and theory conflicts with practice."<sup>16</sup>

## Streamlining bureaucracy

While the Army acknowledges the advantages of operating within the decision cycle of our opponents, its current staff-centric doctrine inhibits rapid decision-making by following check-the-block procedural planning methodologies. Regardless of its concession that intuitive decision-making and abbreviated MDMP are acceptable alternatives to the full-blown process – albeit on a limited basis – the fact remains that the Army's staff training, exercises and evaluations are based on the ability to adhere to process and doctrine rather than attain rapid and decisive results.

This has led to oversized staff sizes at battalion level and above, a situation exacerbated by the acquisition of Command Post of the Future and the massive infrastructure and plethora of technicians required to support the system. Aside from the unsustainable expense this adds to the Army's budget, there is no evidence to indicate that larger staffs or technological infrastructure adds to efficiency – their size and complexity actually impede the planning and decision-making process. "There can be no doubt that there exists a point beyond which the expansion of headquarters no longer contributes to efficiency and may indeed reduce it," notes Van Creveld.<sup>17</sup>

This is illustrated by contrasting current U.S. Army staff sizes with those of the German army during World War II. For example, a panzer division's command staff contained seven officers (three majors and four captains)<sup>18</sup> with the staff company as a whole totaling only 19 officers, 12 warrant officers, 29 noncommissioned officers and 67 enlisted personnel.<sup>19</sup> This reflected at lower echelons as well. Panzer-regiment command staffs operated with five officers;<sup>20</sup> panzer battalions functioned with four.<sup>21</sup> Even if we accept the notion that modern conflict is so much more sophisticated that it requires considerably larger staffs (we don't), it is doubtful whether it

justifies the massive expansion represented by current U.S. Army headquarters.

It is notable that “German staffs at all levels were operational and tactical organs above all ... devoting the minimum effort possible to all other tasks.”<sup>22</sup> This emphasis on operations is reinforced by the manner in which the army as a whole viewed administration: “[T]he General Staff was reluctant to increase the burden of paperwork resting on the troops and to turn them into collecting agencies for data that would benefit the Army as a whole but not them directly. ... Thus, the organization department did not demand daily reports on actual strength, casualties and the need for replacements; instead, it used establishment strength and losses, reported every [10] days, to make its own calculations. ... The system consciously attempted to minimize the amount of paperwork and was quite prepared to take the resulting inaccuracies in stride.”<sup>23</sup>

While this approach has been criticized for not placing enough emphasis on logistics, such assertions are debatable (although beyond our scope of our discussion). Nevertheless, there is no reason why an operationally focused organization cannot be proficient in the areas of supply and logistics as well.

## BCT and mission command

There are three problems with the Army’s brigade-based structure and the brigade combat team (BCT) concept itself. One is the failure to recognize the advantages of cohesion provided by a regimental structure and how this facilitates the exercise of mission command. Two is the BCT’s bloated organization and massive infrastructure – designed more for static operations than tactical and operational maneuver. Three is the dispersal of low-density military-occupation specialty (MOS) positions across the BCT, complicating equipment fielding and training within the brigade as well as distracting it from its core function as a fighting organization.

Unit cohesion is an essential element of mission command because it fosters trust, faith and familiarity among the members of a unit. This allows an

organization to maintain unity of effort and purpose despite the friction, chaos and stress of combat. The Germans thought that “[u]nits that are only superficially held together ... easily fail in moments of grave danger and under the pressure of unexpected events.”<sup>24</sup> On the other hand, the adoption of a brigade system was intended to facilitate task-organization by loosening the ties that existed within the regiment. Not only was this counterproductive, it was unnecessary.

The Germans, masters in the use of the task-force concept, felt no compunction to eliminate the regiment as an operational entity, using it as a core element in the formation of its “kampf-gruppen” during World War II. Following experiments that led to the adoption of the pentomic reorganization in the 1950s, MG George E. Lynch noted that the regimental combat team was just as suitable for the formation of task forces as the armored divisions’ combat commands (i.e., brigades).

Lynch concluded that the Army should return to the traditional division organization with three regimental combat teams, which, he believed, were as flexible as combat commands. Furthermore, Lynch thought regimental organization **fostered morale; encouraged teamwork** between subordinate and superior commanders, as well as their staffs; provided knowledge about capabilities and weaknesses of units and their leaders; and **stimulated cooperative working methods** [emphasis added].<sup>25</sup>

The brigade provides no such benefits, its amorphous organization failing to provide the same sense of corporate identity as the regiment. Further invalidating this system is the fact that brigades have assumed the same level of administrative and logistical responsibilities as the regiments they replaced. The adoption of a combined-arms organization below brigade-level (the combined-arms battalion) has also eliminated the need for the type of task-organization envisioned by the brigade system.

The BCT is also a product of the same mindset, which threatened the development of a sustainable and expeditionary Army during World War II.

Referred to as “empire building” by Leslie McNair, it reflected a desire to organize units “so they could handle every contingency, not just the ones most likely to occur.”<sup>26</sup> There was also a tendency to burden units with “comforts, conveniences, gadgets, technicians, ‘experts,’ special services and complex command-control systems.”<sup>27</sup> As in the case of the BCT, “once these additions got started, they multiplied exponentially.”<sup>28</sup>

As the head of Army Ground Forces, McNair sought to counter these trends by stripping modified TO&Es of anything not directly contributing to an organization’s core function. By streamlining sustainment and headquarters elements and pooling special purpose and support assets at higher echelons, McNair believed the Army could economize on resources and reduce shipping space for moving units overseas. Yet he retained combat power by leaving maneuver elements essentially untouched by these economies.

While the Army rejected the concept of pooling after World War II, ostensibly on the basis of improving cohesion, in the case of low-density MOS positions this approach is essential. Not only does it facilitate the equipping and training of these personnel by consolidating them into special-purpose organizations, it avoids the expense of making them organic to every maneuver formation despite the fact that their services do not contribute directly to the conduct of combat operations. Most of all, it frees maneuver units to focus on their core functions rather than managing a complex variety of non-combat-oriented component elements.

## Conclusion

The U.S. Army’s failure to institute comprehensive reform, specifically in the area of mission command, can be attributed to its bureaucratic, managerial culture. This culture, addicted to check-the-block procedural methodology and processes, fosters a pathological fear of uncertainty and a squeamish aversion to risk, each of which is anathema to a true mission-command philosophy. It has also failed to introduce streamlined, cohesive TO&Es that facilitate mission command and has

offered little substantive support for the cultivation of adaptive, flexible leaders. Only by a massive reorientation away from its preference for scientific management and bureaucratic routine will it achieve its proclaimed goal of creating an expeditionary force led by adaptive, flexible leaders using mission command to execute decisive action.

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## Notes

<sup>1</sup> Michael Glover, *The Peninsula War, 1807-1814*, London: Penguin Books, 2001.

<sup>2</sup> Martin Van Creveld, *Fighting Power, German and U.S. Army Performance, 1939-1945*, Westport: Greenwood Press, 1982.

<sup>3</sup> Ibid.

<sup>4</sup> Bruce Condell and David T. Zabecki, editors, *On the German Art of War: Truppenführung German Manual for Unit Command in World War II*, Mechanicsburg: Stackpole Books, 2001.

<sup>5</sup> Ibid.

<sup>6</sup> Department of the Army, ATTP 5-0.1, *Commander and Staff Officer Guide*, Washington, DC: Government Printing Office, September 2011.

<sup>7</sup> Bruce I. Gudmundsson, *Stormtroop Tactics: Innovation in the German Army 1914-1918*, Westport: Praeger, 1995.

<sup>8</sup> Van Creveld.

<sup>9</sup> Ibid.

<sup>10</sup> Condell and Zabecki.

<sup>11</sup> James S. Corum, *The Roots of Blitzkrieg*, Lawrence: University Press of Kansas, 1992.

<sup>12</sup> Ibid.

<sup>13</sup> Van Creveld.

<sup>14</sup> Condell and Zabecki.

<sup>15</sup> Van Creveld.

<sup>16</sup> Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret, New York: Alfred A. Knopf Inc., 1993.

<sup>17</sup> Van Creveld.

<sup>18</sup> William Schneck, *Breaching the Devil's*

*Garden: The 6<sup>th</sup> New Zealand Brigade in Operation Lightfoot (The Second Battle of El Alamein)*, Fort Belvoir, VA: Night Vision and Electronic Sensors Directorate, Countermeasures Division, January 2005.

<sup>19</sup> <http://usacac.army.mil/cac2/CGSC/CARL/nafziger/942GFGU.pdf>.

<sup>20</sup> <http://usacac.army.mil/cac2/CGSC/CARL/nafziger/944GQCT.pdf>.

<sup>21</sup> <http://usacac.army.mil/cac2/CGSC/CARL/nafziger/944GQDA.pdf>.

<sup>22</sup> Van Creveld.

<sup>23</sup> Ibid.

<sup>24</sup> Condell and Zabecki.

<sup>25</sup> John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*, Army Lineage Series, Washington DC: Center for Military History, 1998.

<sup>26</sup> John Sayen, *U.S. Army Infantry Divisions 1944-45*, Oxford: Osprey Publishing Ltd, 2007.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

## Acronym Quick-Scan

**ATTP** – Army tactics, techniques and procedures (publication)

**BCT** – brigade combat team

**MDMP** – military decision-making process

**MOS** – military-occupation specialty

**TO&E** – table of organization and equipment



# Human-Performance Optimization: Social Considerations for Leadership and Team Cohesion

by Dr. Jessica Gallus and MAJ Robert L. Green

To most Soldiers and Army civilian employees, many of the topics the Chief of Staff of the Army (CSA)'s Strategic Studies Group (SSG) is researching may seem alien or difficult to relate to military operations, yet the complexity of future operations will require Soldiers, teams and leaders to attain capability in leveraging social competencies to meet mission requirements.

Consider this from the Army's human-dimension concept: "How Soldiers and Army civilians interact with and are influenced by others' beliefs, behaviors, feelings and interpersonal interactions makes up the social component. Social fitness consists of individual well-being through self-discipline, developing and maintaining trusted, valued relationships and fostering good communication with others."<sup>1</sup>

Of the five broad areas of strategic and operational importance to land forces that the CSA directed the SSG to study, one is human-performance optimization (HPO). This article describes the HPO effort broadly, but it focuses predominantly on the social aspects of human performance. Each topic is summarized from a layman's perspective, then a brief description follows of how the ideas are interrelated as well as applicable to the military.

## HPO framework

The HPO framework in its simplest form can be described within the context of three key domains: physical, cognitive and social (Figure 1). Per the Army's human-dimension concept, enhancing these domains will provide the foundation for maximizing individual and team performance. The goal is to improve "performance through the identification, development and optimal integration of human capabilities."<sup>2</sup>

Aspects of the physical domain include fitness, health, injury prevention and

## Strategic Studies Group

In 2012 the CSA directed the formation of an SSG. The CSA's SSG "conducts independent, unconventional and revolutionary research and analysis" (quote from the CSA-SSG Website, [http://csa-strategic-studies-group.hqda.pentagon.mil/SSG\\_Index.html](http://csa-strategic-studies-group.hqda.pentagon.mil/SSG_Index.html)) to provide the CSA with unbiased recommendations for concerns and opportunities at the strategic and operational level.

Each year a new cohort of fellows comes together from across the Army and includes Army officers and senior-enlisted personnel, Department of the Army civilians and representatives from the Air Force and Navy. The current cohort's areas of study in addition to HPO are megacities, talent management, persistent engagement and rapid delivery of innovative solutions.

recovery. The cognitive domain examines areas such as intelligence and memory. Resilience, trust, cohesion and emotion regulation are just a few of the components of the social domain.

Recently the SSG, in conjunction with the U.S. Army Research Institute (ARI)

for the Behavioral and Social Sciences,<sup>3</sup> hosted a workshop to explore areas of research related to the social domain. The title of the workshop was "[HPO] in the Social Domain: Hard Problems, Fuzzy Constructs and Huge Potential." The workshop's core was these topics: "self-compassion and trauma";<sup>4</sup> "leadership and psychological resilience in the military: an occupational-health perspective";<sup>5</sup> "the functions and dysfunctions of teamwork";<sup>6</sup> "emotion, regulation and performance dynamics";<sup>7</sup> "group emotion: how it works and why it matters";<sup>8</sup> and "afterwar: moral injury and healing."<sup>9</sup>

## Self-compassion

Self-compassion is "compassion directed inward, relating to ourselves as the object of care and concern when faced with difficult and painful experiences."<sup>10</sup> Essentially, self-compassion is a person's ability to recognize and acknowledge problems vs. suppressing them, and then taking healthy steps toward dealing with those problems.

In many instances people tend to be more judgmental and critical of themselves than they would be of others. Consider times when friends or co-workers were negative about their own performance and you as an outsider told them they were being too harsh or negative. If a person can offer inward support and acceptance the same as they might offer it to a friend, they are exercising self-compassion.

A lack of self-compassion can

HPO Framework			
Focus	Cognitive Intelligence Flexibility Education	Physical Fitness Health Prevention	Social Resilience Trust Emotional intelligence
Individual	SMEs	SMEs	SMEs
Team	SMEs	SMEs	SMEs

Figure 1. HPO research framework.

contribute to a range of negative consequences, including numbing, detachment and avoidance, while greater self-compassion can have a positive impact on overall health and well-being. This does not imply that in the midst of a firefight a Soldier should stop and think about his or her feelings. That probably isn't the right time or place. But it is important for Soldiers to reflect on and make sense of their experiences at some point vs. suppressing them indefinitely. The presence of self-compassion shows promise in increasing resilience and reducing some of the negative effects of trauma such as post-traumatic stress disorder (PTSD).

## Occupational-health perspective

The key idea behind the "leadership and psychological resilience in the military: an occupational-health perspective" presentation was the potential for increased effectiveness created when good leaders take additional steps toward modeling or supporting specific behaviors that contribute to improved physical and mental health.

The Army Operating Concept highlights the importance of effective leadership given current and future environments, which will require "cohesive teams that thrive in conditions of uncertainty, ... [l]eaders [who] foster trust among other leaders and Soldiers, ... [l]eaders and Soldiers [who] are committed to each other and the Army professional ethic ... [and leaders who] remain resilient and preserve their moral character while operating in environments of persistent danger."<sup>11</sup>

Examples of leader behaviors that can contribute to increased effectiveness include sleep leadership, preventive-medicine leadership, combat-operational-stress control leadership, health-related leadership, resilience-training leadership, emotion-regulation leadership and post-traumatic growth leadership.

Take sleep leadership, for example. Research indicates that in units where leaders place importance on quality sleep, unit climate and cohesion can improve over and above the benefit they get from just generally being a good leader. Leaders can emphasize

sleep by asking Soldiers about their own sleep, including it as an important factor in planning operations and training, and by providing sleeping areas conducive to good sleep (e.g., quiet, dark, proper temperature) to the extent possible based on available resources and the environment.

## Teamwork

When we think of improving teams, it is not uncommon for organizations and leaders to focus almost exclusively on areas for improvement, whether due to gaps in training, poor or inexperienced leadership and/or insufficient resources to meet the mission. The "functions and dysfunctions of teamwork" research emphasizes the importance of understanding teams from a holistic perspective to optimize characteristics that contribute to functional team behaviors, processes and outcomes, and to minimize dysfunctions that detract or actively hurt the team.

While the research is ongoing, it is believed that functional factors support higher effectiveness when present and contribute to ineffectiveness when absent. Conversely, dysfunctional factors create ineffectiveness but allow effectiveness when they are reduced.

Both functional and dysfunctional factors consist of attitudes and motivations, cognition and behavioral elements. Examples of each are shown in Figure 2. When teams are able to examine both their functional and dysfunctional aspects, they can identify the steps necessary to achieve higher levels of performance.

## Performance dynamics

The "emotion, regulation and performance dynamics" research describes some of the connections between emotion and performance by exploring emotion and performance episodes in

unison by overlapping emotional experiences with performance episodes.

Consider, for example, the idea that regulating emotion is taxing to a person. The more regulation required, the fewer resources a person has for regulating other important functions like task attention or interpersonal behaviors. If too much regulation is required, a person can reach a burnout state, which can result in reduced self-control, which in turn contributes to increased attention difficulties like excessive mind-wandering and uncivil behavior.

These negative behaviors can reduce performance in individuals and can negatively impact team performance. Conversely, positive emotional states can contribute to improved resources, attention and performance.

## Group emotion

While it is generally well understood that individuals have emotions, what is somewhat less clear is the emotional interplay among groups of people leading to group emotion. Group emotions can arise from the "bottom-up," in which processes such as emotional contagion – the largely automatic sharing of emotions among group members – can lead to group mood arising in a group. The person the group pays the most attention to, such as the leader, can be particularly powerful in changing the emotional state of the group. Further, most often the people in the group who are "catching" the other person's emotional state don't realize it is happening.

An additional aspect of the "bottom-up" perspective vis a vis the "group emotion: how it works and why it matters" research relates to the diversity of emotional traits within a group. Groups with members who have emotionally diverse emotional traits perform more poorly than groups with

	Attitude/ Motivation	Cognition	Behavioral
Functional	Trust Resilience Cohesion	Accurate shared mental models Shared situational awareness	Conflict management Cooperation Leadership
Dysfunctional	Distrust Task conflict Distress	Groupthink Polarization Shared-information bias	Member ostracism Aggression Bullying

Figure 2. Function and dysfunction.

homogenous emotional traits. This holds true even in groups with all negative traits.

From a “top down” perspective, group emotion can also be instituted “from the top” in the form of emotional culture (the deep underlying assumptions, values and norms regarding what emotions are allowed to be expressed or suppressed in the group). A study examining emotional culture in a civilian workforce indicated that emotional culture can influence employee job satisfaction, teamwork, burnout and absenteeism and can ripple out to the clients of the organization as well.

In sum, group mood in all its forms has been shown to be a factor in group attitudes, cognition and performance.

## Afterwar

Moral injury results when individuals cannot make sense of their experience within the context of his or her own moral code. Moral injury isn’t a new idea; it can be found in classic Greek tragedies.

Moral injury is not PTSD, which is – at least in its narrowest sense – a fear-conditioned response to life threat. And unlike PTSD, moral injury does not yet carry stigma. The feelings associated with moral injury are guilt, shame, resentment, indignation or a sense of betrayal.

Moral injury can result from one’s own actions, from the actions of others or even from those one witnesses as a close bystander. For example, a Soldier could feel guilty for not being there to save a buddy on the battlefield, or may feel resentment or shame after complying with an order that resulted in a tragic outcome that is seemingly unwarranted or avoidable.

Offsetting the negative aspects outlined are positive emotions such as trust, gratitude, forgiveness and hope. Often what is required is a trusting relationship through which a Soldier comes to have hope in himself/herself because someone else has hope in them. Or a Soldier comes to feel trust when his or her chain of command shows support for his or her anxiety and acknowledges his or her sense of distress.

## Connections

While the preceding paragraphs don’t do justice to the presentations or the complexity of the research discussed, one can see the connections among these subjects. How do the ideas described relate to leadership and team cohesion? This section will connect the ideas in a context relevant and meaningful to the Army.

Let’s begin with self-compassion. Everyone encounters stress and conflict in their daily interactions and duties. These can include an argument with a spouse or significant other; conflict with a coworker, subordinate or supervisor; getting bad news about a promotion or assignment; or any number of things that cause a negative emotional response. By acknowledging and dealing with negative emotions rather than suppressing them, a person can reduce the drain on his or her emotional resources. Instead of beating yourself up over these stressors, be an “internal ally”<sup>12</sup> or advocate and support yourself as you would a coworker or fellow Soldier. By exercising self-compassion, one can reduce loss of performance due to emotional drain.

Emotional drain has a negative impact on performance through loss of attention and self-control. Negative emotional states can spread across a group through emotional contagion, thus reducing an entire team’s effectiveness. These negative aspects can contribute to team dysfunction and undermine functional team dynamics, further degrading team performance.

Leaders can play a key role in this

cycle. If they are emotionally drained and lacking the ability for self-regulation, they will not likely model or encourage healthy behaviors. Should they set positive examples and create a climate conducive to healthy behavior, leaders can help to improve individual and team performance.

The Army’s human-dimension concept offers the following regarding stress and performance: “The Army must accelerate its efforts to understand the effects of acute and chronic stress. Soldiers and Army civilians who are physically fit, cognitively ready and socially, emotionally, spiritually and morally fit maintain a strong commitment to the profession while being more resilient to the effects of prolonged exposure to stress. Thus, it is critical that individuals and units understand how stress affects their performance and how to master techniques that optimize performance.”<sup>13</sup>

Figure 3 illustrates in a very basic and linear manner possible outcomes for team performance based on how a person (the self) reacts to stresses, especially if the person is the leader of the team.

How does all of this relate to moral injury? One could argue that factors such as a reduced capacity for self-control, reduced resources to cope with stress or negative emotions and a lack of self-compassion may contribute to moral injury through 1) either poor judgment or a diminished capacity to process what has happened, or 2) a piling up of bad luck and events which aren’t properly processed. Just as one can become more susceptible to disease with a

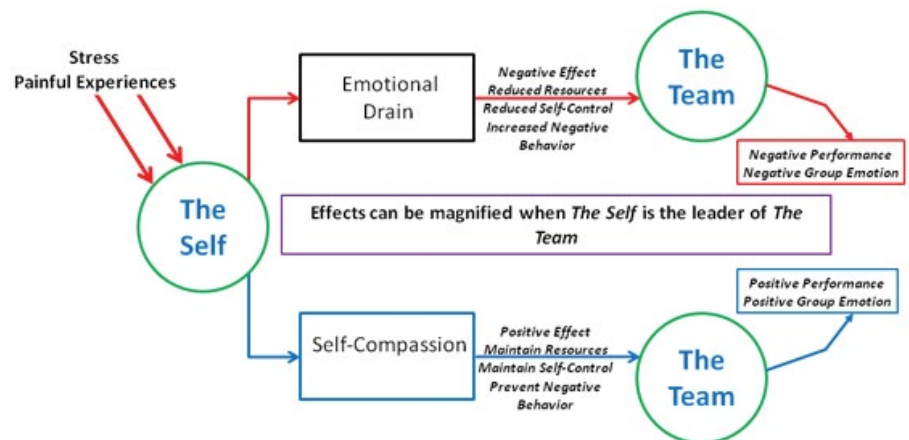


Figure 3. Team performance conceptual model.

weakened immune system, one may be at greater risk for moral injury when resources to withstand difficulties (resilience) is compromised from previous stresses.

Also, if leaders and fellow Soldiers are experiencing reduced resources and degraded resilience, a person experiencing moral injury may be without support. Trusting relationships are key, and a sense of trust in the system allows Soldiers with moral injury to come forward and seek help.

What are the implications for Army leaders? From the tactical level to the highest levels of the Army, each Soldier is part of a team. Recognizing the impact individuals, especially leaders, can have on team cohesion, emotional states and performance are important in maximizing effectiveness. Understanding how the concepts described in this article impact effectiveness and health are a critical first step in developing resilient and cohesive teams prepared to meet current and future challenges.

While the HPO research ongoing for the CSA is far from complete, it is clear there are several areas of great potential for improving individual and team performance. This article discussed only a few areas and dealt exclusively with the social domain. Even with this fairly narrow focus, it seems clear the Army can continue to improve individual and team performance. Doing so would enable the Army to become the world leader in HPO.

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## Notes

<sup>1</sup> TRADOC Pamphlet 525-3-7, *The U.S. Army Human-Dimension Concept*, May 21, 2014.

<sup>2</sup> Ibid.

<sup>3</sup> Other organizations represented in the workshop include the Consortium for Health and Military Performance, Walter Reed Army Institute of Research (WRAIR) and the Army Resiliency Directorate.

<sup>4</sup> Presented by Dr. Katherine Dahm, Department of Veterans Affairs; for more information, contact Dahm at katherine.dahm@va.gov.

<sup>5</sup> Presented by Dr. Amy Adler, WRAIR; for more information, see the following Website: [http://wrair-www.army.mil/ReAnd-Develop\\_MilPsychiatryAndNeuroscienceResearch.aspx](http://wrair-www.army.mil/ReAnd-Develop_MilPsychiatryAndNeuroscienceResearch.aspx), or contact Adler at amy.b.adler.civ@mail.mil.

<sup>6</sup> Presented by Dr. Marissa Shuffler, Clemson; for more information, contact Shuffler at mshuffl@clemson.edu.

<sup>7</sup> Presented by Dr. Howard Weiss, Georgia Institute of Technology; for more information, see the following Website: <http://psychology.gatech.edu/weisslab/index.html>, or email Weiss at hmweiss@gatech.edu.

<sup>8</sup> Presented by Dr. Sigal Barsade, The Wharton School, University of Pennsylvania; for more information, see the following Website: <https://mgmt.wharton.upenn.edu/profile/1304/>, or contact Barsade via Joseph Frank Bernstein, professor of management; The Wharton School, University of Pennsylvania; Suite 2000, Steinberg-Dietrich Hall; Philadelphia, PA 19104, (215) 898-1373 or barsade@wharton.upenn.edu.

<sup>9</sup> Presented by Dr. Nancy Sherman, Georgetown University; for more information, see the following Website: [www.nancysherman.com](http://www.nancysherman.com); or email Sherman at shermann@georgetown.edu.

<sup>10</sup> Dahm, "Self-Compassion and Trauma: Research and Recommendations," presented March 18, 2015.

<sup>11</sup> TRADOC Pamphlet 525-3-1, *The U.S. Army Operating Concept*, Oct. 31, 2014.

<sup>12</sup> Dahm.

<sup>13</sup> TRADOC Pamphlet 525-3-7.

## Acronym Quick-Scan

**ARI** – Army Research Institute  
**CSA** – Chief of Staff of the Army  
**HPO** – human-performance optimization  
**PTSD** – post-traumatic stress disorder  
**SME** – subject-matter expert  
**SSG** – Strategic Studies Group  
**WRAIR** – Walter Reed Army Institute of Research

# Building Effective Leaders in a Complex Era



French and U.S. service members overcome an obstacle at the 5<sup>th</sup> French Marines Desert Commando Course at Arta Beach, Djibouti. (Photo by SSG Dillon White)

## by 1LT David G. Forney

Today's modern operating environment entails levels of complexity and transformation never before seen on the battlefield. Plain and simple, more is being required of young military leaders. There is a very tangible reconfiguration of our training directive as U.S. Army Training and Doctrine Command (TRADOC) courses are restructured to focus on a broad spectrum of topics. Physical fitness, tactical competence and technical aptitude alone are no longer enough to propel a Soldier to the higher ranks; modern leaders must now exhibit a multitude of qualities: patience, intelligence, empathy and organization, to name a few.

In our pursuit of the ideal Army leader, however, have we deviated too far from the foundation of leadership development: the ability to function as a team?

The recognition of a weakness does not always necessitate failure; sometimes exposure to something new is all

that is required to inspire improvement. In my case, it was participation at the French Forces Desert Combat Training Course that revealed (to me) a potential weakness in some of our U.S. training and doctrinal programs.

The French Forces Desert Combat Training Course is held at the Centre d'Entraînement au Combat et d'Aguerrissement de Djibouti (CECAD), located at Arta Plage (Arta Beach) in Djibouti. CECAD is a training center designed to teach combat units to operate in a harsh desert environment. For years the French Marine 5<sup>th</sup> Regiment has invited the United States and other Coalition partners who operate in the Horn of Africa to participate in training.

## U.S. Army training approach

Many TRADOC schools quantify Soldier performance at the individual level.<sup>1</sup> There is certainly nothing wrong with this approach. In fact, it is often the specific intent of the course to rank the

trainees. My experience in attending the cadets' Leadership Development and Assessment Course (LDAC), Armor Basic Officer Leader's Course (ABOLC), Army Ranger School and a number of other specialty training courses showed that each course has a specific purpose, passing criteria and program of instruction (PoI).

LDAC was certainly a program designed to evaluate and rank cadets. Ultimately the cadets' performance in the course plays a large role in determining their branch as well as their eligibility for active duty. Since I attended the course as a cadet and subsequently served as an instructor, I can attest that this is primarily an evaluation module, not a leadership-development program. The instructors must strictly regiment the training due to the number of cadets who are cycled through the course each summer. This severely limits cadets' ability to make actual leadership decisions. Therefore it is the responsibility of the Reserve Officers Training Corps (ROTC) program

to progressively groom cadets into leadership with increasingly demanding positions of responsibility. If ROTC institutions fail to effectively implement a leadership-development program, there is the potential that cadets will be commissioned into the U.S. Army without the paramount skillsets needed to make life-altering decisions on America's front lines.

ABOLC at Fort Benning, GA, is another example of a TRADOC course intended to groom future leaders. The intent of this course is to educate second lieutenants about the tactical and technical skillsets required to conduct unified land operations in a combined-arms team. Similar to LDAC, ABOLC is a standardized course that has a significant amount of throughput each year. Throughout the course, officers rotate through leadership positions and are quantitatively graded on a number of individual and collective tasks. While attending ABOLC, all students are by definition "leaders," making the refinement of a leadership style challenging. Although missions and training exercises are completed in platoons, the nature, tempo and leadership rotations do not resemble those of U.S. Army Forces Command (FORSCOM) organizations.

Until this point in a young officer's career, he or she presumably has not had any practical training in an environment where team-building was the primary focus. Regardless, the officer is considered institutionally ready for assignment to a FORSCOM unit. LDAC and BOLC are intended to develop and refine leadership skills, but the emphasis on individual assessment and ranking intrinsically disrupts the team-building climate.

The same can be said of Army Ranger School. While the course is very physically and mentally challenging, the team-building differs significantly from the stages of team-building outlined in Army Doctrine Reference Publication (ADRP) 6-22.<sup>2</sup> You certainly have to be able to operate cohesively, execute battle drills and conduct military operations with near-perfect precision.

There is no denying that Ranger School is one of the premiere military schools in the world, and it undoubtedly

improved my ability to direct squad- and platoon-size elements under immensely stressful and challenging conditions. I still maintain contact with my "Ranger buddy" and a number of other close friends from our 61 days together in purgatory. However, retrospection can reveal that many of these friendships and cooperative efforts were forged out of self-preservation and a desire to graduate, as opposed to a true team effort and drive toward a common endstate. Again, there is nothing wrong with this type of applied stress and leadership development, but it is certainly a different approach than the French Marines have adopted.

Unlike most TRADOC courses, the French Desert Course focuses on team-building as an integral part of its core curriculum. Analogous to many TRADOC school requirements, the course begins with a physical-fitness test, evaluating the muscular, cardiovascular and comprehensive fitness of the course candidates. Following the physical gates, Soldiers receive classes on desert-survival techniques, including wildlife familiarization, methods of water procurement and fire-starting techniques. Up to this point, the Pol resembles many U.S. Army schools, such as the first days of Ranger School's Swamp Phase in Florida and the Mountain Warfare School. The differences in the French Pol begins when the Soldiers move to Arta Plage for the team-building portion of the course.

## Team-building tenets

Arguably the greatest challenge of establishing effective teams is the intrinsic inability to quantify their performance. Part of this is due to the constant flux of personnel as well as the ever-changing mission assignments and operational tempos. Instead of focusing on the valuation of a team's current condition and quality, perhaps TRADOC's predominant focus should be on setting the conditions for team-building and let the raters and senior raters conduct the evaluations. It is paramount to recognize that teams are fluid and will have to go through cyclic phases of development. This is true whether the team is an infantry machinegun team or a specialty counter-intelligence cell.

When an individual is assigned to a team, there is a natural progression through which they must advance. First, the individual has to feel accepted as a part of that team. Next, the Soldier begins to learn the standard operating procedures and the expectations placed on team members. Once the responsibilities are understood, a Soldier must demonstrate competency to the unit. After the individual exhibits value to the team, the team can begin to practice, build and refine as a unified element.

These stages of team-building are formally realized in ADRP 6-22<sup>3</sup>: Army leadership as formation, enrichment

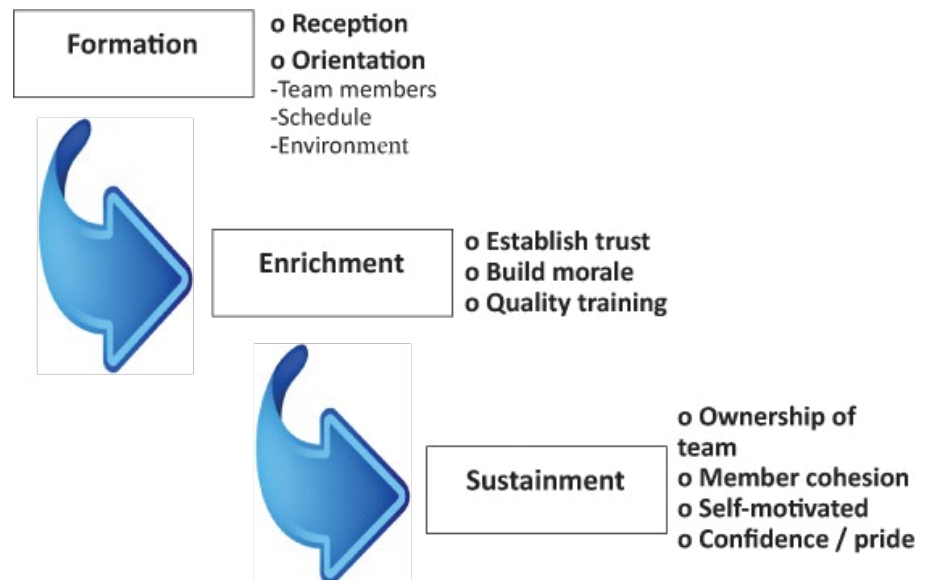


Figure 1. Stages of team-building.

and sustainment (Figure 1). When teams are forming, leaders will rarely be afforded the opportunity to select the members of their team. Regardless, leaders are still held accountable for all their team does or fails to do. Therefore, leaders must bring new members on board as quickly as possible, setting the tone for the rest of the team-building process.

Equally important in the formation stage is the orientation component. New members should be introduced and familiarized with members of the team, the typical schedule of the unit and the necessary information about the operating environment. Depending on the circumstances under which the team is being formed (peacetime vs. wartime), alternate methods may be employed such as sponsorship.

Next is the enrichment stage, where the team starts to function as a cohesive element. Team members gradually build trust and understanding of both fellow team members and the collective unit. Quality training is essential at this stage to continue the team-building effort and drive the unified team toward a single objective.

Last is the sustainment stage. At this point, team members now identify with the unit and are part of something greater than themselves. This is a unit that rises to meet challenges. It is anxious to operate together and improve on an already successful element.

Now the question is: how do we indoctrinate this process along with the skills required to replicate team-building into our young Army leaders?

## French perspective

Upon arrival at Arta Plage for the tactical portion of the French Forces Desert Combat Training Course, Soldiers are assigned to mixed French and Coalition forces platoons. Most French soldiers do not speak English, and the instructors have only a basic proficiency at best. Despite the enormity of the language barrier, platoons are still expected to complete a series of team obstacles on land and sea before progressing to the final phase.

Each day begins with what the French call a smoke session, synonymous to

our physical training (PT). It is evident from the first PT session that the French view the Desert Commando Course as a team sport. Integrated into every part of PT is a team-building task – everything from one- and two-man buddy carries to U.S. Navy SEAL-style sit-ups with the platoon seated in a row, arms linked. During these PT sessions, there is no announcement that any Soldier who fails to complete the run under a certain time standard will be dropped. Instructors do not threaten to fail a Soldier who is incapable of performing the prescribed number of pull-ups. Instead, an endstate is calmly announced by the instructors, the French soldiers do their best to act out the instructions with creative gesticulations, and the group proceeds to collectively execute.

At one point during the course I attended, one of the U.S. Soldiers started to fall behind on a particularly long stretch of fireman-carry drills. In response, a number of French soldiers rushed back to assist the struggling Soldier. It was a remarkable sight from an American perspective. The *esprit de corps* the French soldiers demonstrated along with their drive toward a common objective was remarkable.

After each morning's smoke session was either combatives, field classes or obstacle courses. For each event, the instructors would calmly explain the task, conditions, standards and endstate. During none of this was pass or fail criteria put out. Nonetheless, each French and U.S. Soldier strived to perform their very best during every task. Why? For me it was simply the desire to be the most effective and impactful member of the team I could be.

One of the other driving factors behind the team-building mantra and spirit of the course was the nature of the obstacles and tasks themselves. There have been very few, if any, group challenges in the Army that have pushed me to my physical or mental boundaries. Certainly, some aggregate missions or periods of training were challenging, but few team events required more than a short period of planning and execution. One of these was the Field Leader's Reaction Course (FLRC), a popular training exercise for ROTC battalions. Again, these are educational

events, but they are far from physically demanding, and to state that they demand a cohesive team effort would be a stretch.

The French have created three very distinctive but equally challenging obstacle courses that truly push Soldiers to the point of discomfort. The first is an individual obstacle course built into the side of a mountain several hundred feet tall. One of the team courses consists of a series of land obstacles requiring coordination and cooperation by the entire team. Another is an obstacle course in the Red Sea requiring Soldiers to remain calm and collected under turbulent conditions.

Unlike its U.S. FLRC counterparts, the French course requires teamwork and cooperation. Without it, the course cannot be successfully negotiated. On the other hand, it is rare for the average U.S. Soldier to experience this type of adversity as a member of a team in our training courses.

## Team first, individual second

The necessary steps and leadership qualities required to build a successful team from the ground up were cited previously. Now comes the challenge of teaching these skills to our young leaders and providing an opportunity to apply them in a standardized way. I believe there are three ways to implement this proposed team-building module: expand the basic requirements to commission an officer, alter existing courses and create training opportunities for FORSCOM units designed specifically for small-unit improvement. A depiction of these improvement plans is captured in Figures 2, 3 and 4.

The three primary commissioning sources for Army officers are ROTC, the U.S. Military Academy at West Point, NY, and Officer Candidate School (OCS) at Fort Benning, GA. Only a small minority of the cadets from these programs will attend Army basic combat training. Most of this minority is non-prior-military-service OCS cadets. A solution could be to require all commissioning sources to send cadets to Army basic combat training, preferably infantry one-station unit training at Fort Benning. In my opinion, the Infantry

Branch has better mastered small-unit cohesion, and the infantry military-occupation specialty (MOS) generating course is taught at Fort Benning. This could be a similar module to U.S. Marine Corps officer progression, in which some non-infantry officers complete infantry training before learning skills associated with their assigned MOS. This requirement could be accomplished between the cadets' first and second year of education, regardless of their commissioning source.



**Figure 2. The expansion of commissioning requirements, incorporating the Infantry Basic Combat Course into all three commissioning sources.**

Another way to improve team-building would require minor adaptations to current Army TRADOC courses. LDAC is on the right track with a reduction in the number of formal evaluations from six to four. The intent is to allow cadets to experiment with different leadership styles, alleviating their focus on continuous assessments. Expanding this direction to include additional small-unit leadership challenges without formal evaluations would benefit young leaders, similar to the methods used in the French Commando Course. Furthermore, the addition of

more demanding tasks, obstacles and missions to strain cadets to a point of physical and mental discomfort would further enhance leadership and team-building development.

The same refinement should also be made to basic officer courses for all MOSs. These adjustments do not have to be overly complex. Simply make the distances longer, raise the bar higher and design more difficult missions. It's important to include team incentives to foster effectiveness, efficiency and cohesion. Similar to the French Commando Course, the TRADOC design should force the strong to push the weak across the finish line. Soldiers would have two choices: persevere or quit. Either way helps the Army in the long run. The driving force of a unit is comprised of those who choose to endure. That is leadership progression, the overarching cycle that creates genuine leaders.

This merit of this team-building method played out for me when I was in college. I was a member of a team that attended an annual competition comprised of a series of physical and mental challenges. Ruck-marching was one of the cornerstone events. I was the only freshman on the team and by far the least experienced. Even after weeks of training, I was still the slowest of 10 members. Regardless, I selected the former of the two options cited previously and persevered. The next year I successfully completed the competition with no issues. During my third year, I was selected co-captain, and I served as team captain my final year. These leadership positions would have meant nothing had I not been pushed to my physical and mental limits that first year – the faster members

of the team pushing the slower members to improve. This method can be replicated in Army leadership training but with an accelerated timeline.

Another approach could be to establish a small-unit training course at each of the major Army posts. The intent would be for platoon-size elements to conduct challenging, decentralized training. The courses should encompass four essential elements:

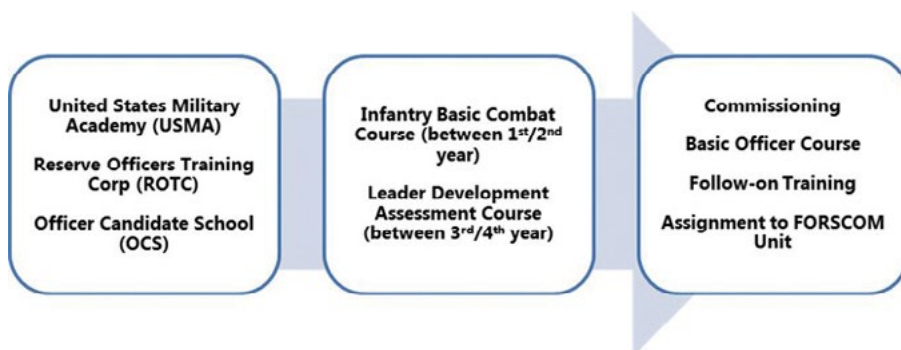
- Cultivation of competitive team spirit;
- Exertion of multifaceted challenges;
- Demand for long-term preparation and training; and
- Nullification of individualism in self-interested persons.

Similar to Best Ranger or Best Sapper competitions, these courses should test a unit's endurance, communication skills, physical-fitness level, mental agility and resiliency. Using the infantry model as an example, the courses could include a 26.2-mile ruckmarch, team obstacle course, combat-ives training, situational-training exercises, a practical exam and even a sporting event. The events would be team-based and could only be conducted at the pace of the least proficient individual.

Clearly, such a series of events would require significant preparation and training. By the time the team is prepared to negotiate the course, it would be in the enrichment, if not the sustainment, phase of team-building. From personal experience, I firmly believe there is no greater gratification than overcoming a series of challenges with close friends and teammates.

## Conclusion

U.S. Soldiers deserve to be led by competent and professional leaders. With that in mind, it is expected that prior to the assumption of a leadership position, new officers have a comprehensive understanding of the necessary balance between the art and science of leadership. Do we truly believe that Army TRADOC courses are accomplishing this standard? Most are designed to evaluate, teach and refine. They aren't designed to develop team-building skills. This type of leadership is best



**Figure 3. The adaptation of pre-existing TRADOC courses prior to an officers' assignment to a FORSCOM unit.**





**Figure 4. Stepwise module for the establishment of a specialized training course designed to train team-, squad- and platoon-sized elements at Army installations.**

created through the execution of increasingly demanding collective tasks that develop team-building skills. To that end, the French Desert Commando Course is the epitome of team-building that could serve as an example for us.

We should indoctrinate the fundamentals of team-building into all TRADOC courses. The competitive nature, ranking system and pass/fail events can and should certainly persist, but there is no reason these methods cannot coexist with quality team-building. With the required completion of basic combat training by all new officers, minor modification to Army TRADOC courses and added local training programs at major Army installations, we could begin integrating fundamental team-building skills into our nation's youth. As our Army focuses on promotions, physical fitness and evaluation reports, it is also imperative we focus on the foundation of our most lethal element – the small-unit team – to fight and win in a complex world.

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## Notes

<sup>1</sup> TRADOC, *Win in a Complex World*, April 8, 2015.

<sup>2</sup> ADRP 6-22, August 2012.

<sup>3</sup> Ibid.

## Acronym Quick-Scan

**ABOLC** – Armor Basic Officer Leader's Course  
**ADRP** – Army doctrine reference publication  
**CECAD** – Centre d'Entraînement au Combat et d'Aguerissement de Djibouti  
**FLRC** – Field Leader's Reaction Course  
**FORSCOM** – (U.S. Army) Forces Command  
**LDAC** – Leadership Development and Assessment Course  
**MOS** – military-occupation specialty  
**OCS** – Officer Candidate School  
**PoI** – program of instruction  
**PT** – physical training  
**ROTC** – Reserve Officers Training Corps  
**SEAL** – Sea Air and Land teams (U.S. Navy)  
**TRADOC** – (U.S. Army) Training and Doctrine Command

# Advanced Situational Awareness:



**A unique course that teaches Soldiers the art and science of observing humans and their surrounding environment**

**by retired MAJ Vern L. Tubbs**

Threats to individual security and organizational effectiveness are problems that persist in the complex operating environments we face. The question that must be answered is, “How do we effectively prepare our force to face these hybrid and insider threats in today’s fiscally constrained environment?”

Training Soldiers to be aware by observing, interpreting and analyzing the

human and environmental terrain in which they conduct operations is a critical aspect of operational security and effectiveness. Increased awareness is the key to a Soldier’s capacity to observe effectively, analyze thoroughly, predict accurately and act decisively to avoid, mitigate or defeat potential threats.

The U.S. Army Maneuver Center of Excellence (MCoE) is addressing this need with a unique course called Advanced Situational Awareness (ASA)

that teaches Soldiers the art and science of observing humans and their surrounding environment. The ASA course grew from the recognition that Soldiers needed more training to enhance their awareness, sharpen their mindset and increase their ability to secure themselves and their units in the complex environments of Iraq, Afghanistan and even on the home front.

## Threats

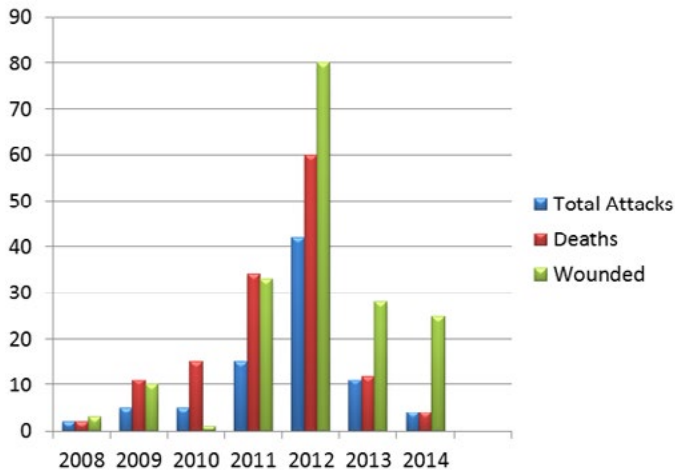
Hybrid or asymmetric threats are a diverse, dynamic combination of regular forces, irregular forces and criminal elements unified to achieve mutually benefitting effects. Hybrid threats will continue to exist no matter if our Soldiers are participating in a counterinsurgency operation, a decisive-action operation or simply living their daily lives in the United States while facing threats from terrorist groups like the Islamic State in Iraq and Syria.

Insider threats are defined in Army Regulation (AR) 381-12, **Threat Awareness and Reporting Program**, as “person(s) with placement and access (insider) who intentionally causes loss or degradation (threat) of resources or capabilities, or compromises (threat) the ability of an organization to accomplish its mission through espionage, international terrorism or the unauthorized release or disclosure (threat) of information about the plans and intentions of U.S. military forces.”

Insider threats to our individual and unit security have come from within our ranks, as in the case of U.S. Army SGT Hasan K. Akbar, convicted of killing two officers and wounding 14 fellow Soldiers in a grenade-fragging



**Figure 1. Roleplayers interact with a Soldier as part of the Advanced Situational Awareness Course at Fort Benning, GA.**



**Figure 2. Green-on-blue insider attacks in Afghanistan.**

incident on March 23, 2003, at Camp Pennsylvania, Kuwait. Another example is the case of U.S. Army MAJ Nidal Malik Hasan, who opened fire Nov. 5, 2009, killing 13 fellow Soldiers and civilians and wounding 32 others at Fort Hood, TX.

Insider threats have also appeared from within the ranks of our partner forces during the last several years in both Iraq and Afghanistan. The most recent tragedy is the killing of U.S. Army MG Harold Greene and the wounding of more than a dozen others, including a U.S. Army brigadier general and a German general officer. This tragedy happened during a key-leader engagement Aug. 5, 2014, at the Marshal Fahim National Defense University, which is an Afghan training center in Kabul.

## Modern situational awareness

The roots of modern situational awareness training in the military began with U.S. Marine Corps (USMC) GEN James Mattis, who determined Marines needed a set of skills once embodied by the “hunters-turned-Marines” of former generations. Successful hunters are keenly aware of the details in their surroundings and are alert to unusual environmental changes. Under Mattis’ guidance, the Marine Corps implemented the combat-hunter program in August 2007.

Although there are similarities to the USMC combat-hunter program, the Army developed the 50-hour ASA basic course and implemented it in late 2011. The Army has institutionalized

ing efforts to codify and integrate the human dimension in all we do. The U.S. Army Forces Command (FORSCOM) established the requirement for ASA as part of its solution to the insider threat in Afghanistan through Fiscal Year (FY) 14 and included ASA in its region-alignment-of-forces (RAF) training guidance for FY15.

## Adaptive leaders, sharpened mindset

The ASA course has continued to evolve and improve to meet the needs of the Soldier. This latest evolution began in May 2014 when the Army shifted it to more closely align with the Army Learning Model (ALM) described in U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525-8-2, *The U.S. Army Learning Concept for 2015*. By decreasing the volume of lectures and slides, implementing more practical exercises, enabling individual learning opportunities through after-class assignments and broadening the “scenario aperture” beyond an Afghan-centric model to scenarios and looks from different areas around the globe, ASA continues to improve its learner-centric education and training model.

The ASA course develops adaptive, thinking Soldiers

and leaders capable of meeting the challenges of operational adaptability in an era of persistent conflict. The course combines the ALM principles of self-development, institutional instruction and operational experience to deliver an exciting, interactive, “hands-on” course that educates and trains students in a classroom through practical exercises such as keep-in-memory games, observation exercises and ground-sign awareness (GSA). It also uses a complex, interactive, “free-play” outcomes-based field-training exercise supported by trained threat emulators.

The ASA course teaches Soldiers about the human sensory system (five senses and the brain), the six domains of human behavior (heuristics, biometrics, kinesics, proxemics, geographics and atmospheric), principles of GSA (human pace, sign recognition), enhanced observation (why we see things, why we don’t see things, signatures and cues), how to establish a baseline (an initial set of critical observations to confirm the norm of an area), critical thinking (problem-solving, anomaly-detection), decision-making (legal/moral/ethical, observe-orient-decide-act loop, ASA algorithm), how to think like the enemy and how to employ this knowledge and experience to be “left-of-bang.”

Students are evaluated on their teamwork, their participation and effort through all the practical exercises, their ability to articulate observations and reasoning behind their decisions, and their situational-awareness knowledge through a final written exam.



**Figure 3. Students record observations.**



**Figure 4. An ASA instructor teaches the three key elements of a footstep as part of ‘using critical thinking to interpret GSA’ training.**

## Measuring benefit to Soldiers

It is difficult to quantify the benefit ASA training has had on the force, but many mid- and post-deployment after-action reviews indicate this training is saving lives. One battalion interviewed in Fall 2014, while deployed to Afghanistan, received ASA training in pre-deployment, and its Soldiers insist they used their newly acquired skills on a tactical level in many situations. Soldiers at all levels (private first class through first lieutenant) had very positive remarks about the ASA course’s overall practical application and said ASA better prepared their less-experienced Soldiers to understand observation techniques when on patrol, in guardian-angel roles and when conducting entry-control-procedures operations.

More senior leaders (staff sergeant through sergeant first class) said the training provided a systematic approach to problem-solving. One platoon sergeant said, “All Soldiers in the Army should attend this course as early as possible.” Another NCO said, “One unintentional side effect of the ASA training was the way it professionalized our younger Soldiers in a way we didn’t expect.”

## Summary

The skills taught by the Army’s ASA course require no technology and are low-cost, perception-enhancing abilities that provide Soldiers the ability to

predict a threat and act decisively. In the current uncertain and unstable security environment, and in a time of fiscal constraint, the affordability of ASA and the unparalleled dividends it pays in survivability and lethality make it a program that should be proactively enhanced and promulgated throughout the force.

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## References

- AR 381-12, *Threat Awareness and Reporting Program*.
- TRADOC Pamphlet 525-8-2, *The U.S. Army Learning Concept for 2015*.
- MCoE’s MLDS.
- FORSCOM’s RAF training guidance for FY15.
- [http://www.army.mil/article/102060/Situational\\_awareness\\_training\\_aims\\_to\\_prevent\\_attacks/](http://www.army.mil/article/102060/Situational_awareness_training_aims_to_prevent_attacks/).
- <http://www.stratfor.com/weekly/practical-guide-situational-awareness#axzz3LSBXWEzg>.
- [http://www.longwarjournal.org/archives/2012/08/green-on-blue\\_attack.php](http://www.longwarjournal.org/archives/2012/08/green-on-blue_attack.php).
- [http://www.strategicstudiesinstitute.army.mil/pubs/parameters/issues/Autumn\\_2013/5\\_Field.pdf](http://www.strategicstudiesinstitute.army.mil/pubs/parameters/issues/Autumn_2013/5_Field.pdf).
- <http://www.tactical-life.com/magazines/tactical-weapons/usmcs-combat-hunter/>; <https://www.mca-marines.org/gazette/2014/11/combathunter>.

## Acronym Quick-Scan

**ALM** – Army Learning Model  
**AR** – Army regulation  
**ASA** – advanced situational awareness  
**FORSCOM** – (U.S. Army) Forces Command  
**FY** – fiscal year  
**GSA** – ground-sign awareness  
**MCoE** – Maneuver Center of Excellence  
**MLDS** – Maneuver Leader Development Strategy  
**NCO** – noncommissioned officer  
**RAF** – regional alignment of forces  
**RSLC** – Reconnaissance and Surveillance Leader’s Course  
**SERE** – survival, resistance, evasion and escape  
**TRADOC** – (U.S. Army) Training and Doctrine Command  
**USMC** – U.S. Marine Corps

# The Headquarters and Headquarters Troop Commander As Brigade Combat Team Chief of Reconnaissance

by **CPT Michael L. Hefti**

The “chief of reconnaissance” (CoR) is currently a non-doctrinal position, which is a characterization debated by maneuver leaders and the intelligence community.<sup>1</sup> There is minimal documentation on the CoR’s incorporation, but the most common argument suggests the cavalry squadron commander – or the cavalry squadron as a whole – acts as the CoR similar to the manner in which the fires-battalion commander serves the brigade combat team (BCT) as its fires-support coordinator.<sup>2</sup>

As our transition returns to training skills such as combined-arms maneuver, these two recommendations pose many challenges. Most importantly, the cavalry squadron is rarely co-located with the BCT and is often unable to take part in the BCT’s targeting workgroup meetings; intelligence, surveillance and reconnaissance (ISR) planning; priority information requirements (PIR) input; and named areas of

interest (NAI) input during the BCT’s military decision-making process (MDMP). In addition, the cavalry squadron is typically on a condensed MDMP timeline of its own while developing a plan off the first two warning orders from the BCT. Therefore, the cavalry squadron’s headquarters and headquarters troop (HHT) commander is recommended as the CoR to facilitate the proper amount of attention on reconnaissance and security (R&S) during the BCT’s MDMP and while assisting in the execution of the BCT’s R&S fight.

## Employing HHT commander

In a Force XXI structure, the HHT commander is located at the forward-trains command post (FTCP), where the forward-support company (FSC) commander is also located.<sup>3</sup> This made

sense prior to the FSC’s integration. However, since the FTCP serves as the primary direct-coordination element between the cavalry squadron and the brigade support area, the FSC commander is capable and better suited to provide this function, especially due to the organic relationships established within the brigade support battalion. This leaves the HHT commander as a minimized combat multiplier on the battlefield.<sup>4</sup>

Professional on-line forums such as milSuite frequently discuss the frustration of how to employ the HHT commander.<sup>5</sup> Rotations at the National Training Center (NTC) at Fort Irwin, CA, demonstrate a feasible solution: employing the HHT commander as the brigade CoR. The HHT commander by the modified table of organization and equipment is an Armor Branch officer and should have a firm grasp on cavalry tactics furthered through attendance at the Cavalry Leader’s Course. The HHT commander has a unique and current understanding of the unit, its capabilities, limitations and personalities because he/she is still in command and serves directly with the cavalry squadron. The HHT commander also has an understanding of the BCT’s ISR assets and most division assets.



The CoR's roles and responsibilities have never been clearly defined within U.S. Army doctrine. For that matter, the CoR's role may never be clearly defined in Army doctrine to provide commanders the necessary flexibility to execute mission command on how leaders are employed. Of note, old Soviet doctrine used the CoR at the regimental level, and at higher echelons, to control all the intelligence and reconnaissance assets within the regiment.<sup>6</sup> The Soviets' CoR held tasking authority and reported to the Chief of Staff while also directly communicating with the regimental or division commander. The Soviets' CoR was not subordinate to the operations officer.

## CoR's chain of command

Tasking authority is not critical to the position, which removes the argument for having the BCT operations or cavalry squadron commander serve as the CoR within the BCT. The following are, however, key questions: To whom does the CoR report? Who provides the guidance? What are the CoR's roles and responsibilities?

Determining the chain of command for the CoR is important to prevent conflicting guidance and duties. If the HHT commander serves as the CoR, it is important that squadron and brigade leadership understand the CoR belongs to the brigade and is not the squadron CoR. Since the CoR does not have tasking authority, qualifications for the HHT commander to be the CoR are reduced as the commander has not attended Command and General Staff College and has not held a field-grade-officer key-developmental position.

However, it does mean the CoR should act in the BCT's interest when dealing with assets and enablers. By default, this still benefits the squadron. The CoR reports to the squadron and BCT commander and directly liaisons with the BCT executive officer to help the BCT in treating R&S as major phases of every operation.

However, the HHT commander cannot be a permanent staff officer. Although units can temporarily facilitate this role during a combat training center rotation, it is not a sustainable solution. The CoR needs to retain some

autonomy from serving solely as a staff officer; that way he/she can still execute the HHT command responsibilities, such as property accountability, personnel and administrative requirements.

## CoR relationships

If the CoR retains autonomy, he/she is able to move fluidly between the intelligence and operations sections during the planning phase. This ensures attendance at various workgroups and rehearsals to address potential issues prior to transitioning to current operations and managing the BCT R&S fight within the tactical-operations center (TOC). This allows the CoR to act as a subject-matter expert on R&S tasks for various staff entities such as the BCT intel collection manager, who is typically a warrant officer with an excellent grasp of the technical capabilities of various assets but may lack the maneuver experience to integrate those capabilities with cavalry ground operations.

While working with the S-2, the CoR reviews NAI to ensure they are coordinated and validates the information requirements (IR) associated with the BCT's PIR. The NAI and PIR are critical to the BCT's decision points. Therefore, the CoR is critical to developing the IR that the scout within the cavalry squadron can answer, as well as for other BCT ISR assets. This allows staffs the ability to analyze the answered IRs, identify which PIR they answer and make recommendations to the commander.

The CoR also plays a critical role within the BCT S-3 staff section. The CoR helps planning to ensure the cavalry mission is synchronized with the BCT's main effort and can feasibly accomplish the mission within the squadron's capabilities. The CoR also identifies issues and reviews the effects of various warfighting functions on the cavalry squadron. The CoR provides input to better focus the BCT's R&S mission, which is critical to overall mission success.

The CoR's other important function is in the BCT TOC during the cavalry's fight. The CoR does not act as a battle captain, but rather, he/she observes and advises on R&S missions during

execution, providing context to the BCT's common operating picture (COP). The CoR continuously echelons ISR assets to push reconnaissance as far forward as possible while simultaneously giving the cavalry squadron a COP of the area where it is fighting. This reduces the squadron's attrition in the counter-reconnaissance fight. This also enhances the cavalry squadron's tempo during its R&S missions as ISR assets help confirm or deny IR/PIR at various NAIs and refine the unit's focus, helping neutralize enemy reconnaissance and disrupting enemy forces before the BCT commits its main effort. During the R&S fight, the CoR also ensures ISR assets are executing the appropriate NAIs and contrasting the intelligence analyst's input against ground maneuver experience and the current COP. As the cavalry squadron transitions out of the night fight, the CoR communicates with the cavalry squadron commander to confirm the BCT COP and briefs the BCT commander on the prior night's R&S fight. The CoR then ensures the combined-arms battalions have a situational understanding of the battlefield based on the cavalry squadron's fight.

The CoR is not just limited to operations and intelligence. The CoR also supports sustainment, fires planning / execution and other areas on staff. Having direct liaison with the BCT executive officer helps the CoR facilitate this integration with the staff. As the cavalry squadron executes missions ahead of the BCT, the CoR helps the brigade staff understand and plan for the drastic distances between the cavalry squadron and the BCT, the earlier timeline and how the cavalry squadron's operations at night affect combat service support. Whether coordinating ambulance exchange points during night operations, modifying logistic timelines or helping fires understand which targets the squadron can observe are all areas where the CoR can help. This contribution is not solely the CoR's; it is also based on the cavalry squadron's plan the CoR uses to help refine the BCT's plan.

In addition to the input the CoR gives to the BCT, he also owes input to the cavalry squadron. One of the challenges for the cavalry squadron is parallel

planning with the BCT because the squadron's operations order comes out of the BCT's warning order, both one and two. The cavalry squadron already executes a hasty MDMP based on its execution timelines in comparison to the other combined-arms battalions. The CoR has an intimate experience with these challenges, so he/she can help the cavalry squadron understand the courses of action (CoA) the BCT is considering as part of its planning process, enabling the cavalry squadron's parallel planning. The CoR facilitates this by sharing unpublished drafts of the BCT's Annex L, the ISR Plan and unpublished CoAs to assist the cavalry squadron with its MDMP. The key to success is shared understanding between CoR and cavalry squadron, and between the BCT and cavalry squadron staff shops. With this in mind, the CoR distributes the cavalry squadron's plan to the BCT to ensure future planning synchronization of the combined-arms battalions. As such, the CoR becomes the catalyst for planning between the BCT and cavalry squadron, ensuring synchronization and shared understanding.

While we may continue to professionally debate about who should be the CoR, the HHT commander certainly serves as a feasible, suitable and acceptable solution. It also helps squadron and brigade commanders practice talent management by forecasting the right leader for the HHT command. Incorporating the CoR role during home-station training is crucial to success; it affects clearly defined roles and responsibilities, prevents the CoR from becoming just a BCT staff officer, shares understanding between the BCT and cavalry squadron commanders on employment and establishes clear lines of information flow for the CoR between the BCT and cavalry squadron. The mere debate about the CoR position has identified the need for a focus on R&S operations at the BCT level. With that in mind, the currently

underemployed HHT commander fills the void and adds a combat multiplier to the fight.

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## Notes

<sup>1</sup> The author's observations and conversations with many leaders is the basis for this statement.

<sup>2</sup> LTC Brian K. Flood, MAJ James A. Hayes and MAJ Forrest V. Cook, "IBCT's Reconnaissance Squadron," *ARMOR*, March-April 2011, and MAJ Morrie J. Fanto,

"Targeting the Complex Threat: The Art and Best Practices of Targeting during Reconnaissance Operations," *ARMOR*, September-October 2012.

<sup>3</sup> Field Manual (FM) 3-20.96, *Reconnaissance Squadron*, Washington, DC: U.S. Government Printing Office, March 12, 2010.

<sup>4</sup> As observed by cavalry squadron trainers at NTC during decisive-action training environment rotations.

<sup>5</sup> A search for HHT and headquarters and headquarters company (HHC) commanders on [www.milSuite.mil](http://www.milSuite.mil) will result in many discussions on how to employ HHT/HHC commanders, especially since the HHT commander does not have any organic maneuver elements such as mortars or scouts.

<sup>6</sup> FM 200-2-1 (obsolete), *The Soviet Army: Operations and Tactics*, Washington, DC: U.S. Government Printing Office, July 16, 1984.

## Acronym Quick-Scan

**ABCT** – armored brigade combat team  
**BCT** – brigade combat team  
**CoA** – course of action  
**COP** – common operating picture  
**CoR** – chief of reconnaissance  
**FM** – field manual  
**FSC** – forward-support company  
**FTCP** – forward-trains command post  
**HHC** – headquarters and headquarters company  
**HHT** – headquarters and headquarters troop  
**IBCT** – infantry brigade combat team  
**IR** – information requirement  
**ISR** – intelligence, surveillance and reconnaissance  
**MDMP** – military decision-making process  
**NAI** – named area of interest  
**NTC** – National Training Center  
**PIR** – priority information requirement  
**R&S** – reconnaissance and security  
**TOC** – tactical-operations center

# Scouts In: Reimagining Reconnaissance

by CPT Eric Glocer

The U.S. Army's method of collecting intelligence and conducting reconnaissance from ground-based platforms is constantly evolving to match its operating environment. As we transition from Iraq and Afghanistan to a more dynamic environment, a more holistic, less security-driven approach to tactical collection is as important as our current emphasis on fighting for information.

## Current paradigm

Since the end of World War II, the U.S. Army has gone back and forth trying to answer the question of whether reconnaissance organizations should be light or heavy. Heavy organizations are more capable of conducting security operations and are capable of fighting for intelligence.<sup>1</sup> In contrast, light organizations are better suited to assess their environment without changing the situation or drawing in more troops.<sup>2</sup>

In recent years, the Army went from

armored, forceful reconnaissance formations to the modular brigade structure that has fewer security capabilities.<sup>3</sup> It compartmentalized tactical-collection assets in reconnaissance organizations and maintained fewer organizations capable of conducting security on a larger scale than brigade.<sup>4</sup> This makes sense because of the extended duration of the war and how the asymmetrical nature of our opponents reduced our operational requirement to conduct large-scale security missions.

Now that the United States has removed forces in Iraq and is currently drawing down in Afghanistan, the Army must be prepared to fight both a conventional and asymmetric foe.<sup>5</sup> This differs from the earlier paradigm in that our conventional forces no longer primarily focus on an insurgent opponent.<sup>6</sup> As a result, the Army is deciding how to reshape ground-based intelligence collection. With that in mind, the concept of a heavy reconnaissance and security element that can provide

security and, more notably, revive the capability of fighting for intelligence<sup>7</sup> is now being reviewed. This idea accounts for the need to fight for information, but it lacks lighter reconnaissance elements required to observe the environment without affecting it.<sup>8</sup>

The transition to build a security capability is warranted, but it does not address the Regular Army's gap in light, stealthy intelligence-collection capabilities. Only light brigades, as opposed to heavy and Stryker brigades, are capable of conducting reconnaissance without eliciting a response from their targets. Unfortunately, the motorized aspects of the reconnaissance squadron in light and airborne brigades make them too much of a firepower and mobility asset to freely conduct detailed, focused intelligence, surveillance and reconnaissance (ISR) without making contact.<sup>9</sup> Reconnaissance requirements go unfulfilled as a result.

Another shortcoming in the current model is more obvious when





addressing an unconventional threat: intelligence and reconnaissance assets have distinct reporting channels, which degrades unity of effort. Intelligence assets report through military-intelligence (MI) companies, while reconnaissance assets report through the squadron. All reporting is combined with the assistant chief of staff/intelligence officer, but it could be optimized if units had a single reporting chain. An example of how to curtail this problem at the brigade level is to develop a habitual support relationship for an expeditionary MI brigade company within the squadron for missions. Such a relationship eliminates the training deficit current MI companies struggle with in maneuver brigades when they have to resource MI training without the support of an MI battalion.<sup>10</sup>

The final gap in our paradigm is that brigades are directly affected by their area of interest (Aoi) but do not have the means to influence things outside of their area of operations (AO). The Aoi is influenced at the operational level but ties directly to the tactical level. It can be influenced through temporary support relationships under the contemporary model, but these relationships should be habitual and formal.<sup>11</sup>

## What's missing?

As the Army reviews its reconnaissance organizations, it should advocate that the corps build and train light-recon-capability sets that can receive scalable slices from MI and other enabling units. This would streamline reporting, create unity of effort and increase each asset's capabilities. These capability sets should be rapidly deployable, light ISR organizations that work for an operational commander with a support relationship to the brigades operating in the vicinity. Such an organization can correct our current model by filling the capability gap for light, stealthy reconnaissance that is not currently addressed.

Most important, this organization must be capable of observing its environment without affecting it. By maintaining a low profile through the use of beyond-line-of-sight (BLOS) communications, detailed camouflage and increased standoff made possible by new

optics, collectors can make visual and signal contact with the minimum force possible. Ideally they make contact with a force so small that its target does not know it is in contact. This enables the commander maximum flexibility to develop the situation and address the threat without forcing his hand. It also maximizes security through standoff and stealth. Ground-based ISR in this manner provides added capability over aerial ISR in that it is not weather dependent, and it can have days of continuous station time vs. hours of station time.

Multi-disciplined intelligence collection is optimal; you achieve greater speed and efficiency and gather a broader intelligence picture by mixing reconnaissance with MI. It makes cuing much quicker, as assets are commanded by the same entity. Reporting to the same headquarters also supports synthesizing intelligence at the lowest level, streamlining reports and making them more digestible to the commander they support. The result is a faster response with a more focused situational understanding and complete unity of effort.

Creating a multi-disciplined collection organization also dramatically increases the individual capabilities of each asset. Adding scouts to signals intelligence (SIGINT) and multi-function teams (MFTs) allows them to survive and operate close to the forward line-of-own-troops (FLOT) while providing ISR that typically cannot get as far forward. MI assets being co-located with scouts dramatically increases the scouts' situational awareness. Both can use each other for communications support and BLOS reporting through their distinct equipment sets. Best of all, it makes mixing second nature, greatly increasing overall capability.

We need a scalable organization<sup>12</sup> to be a "rapidly deployable force capable of living in austere environments," which is the current mandate from MG Terry Ferrell, commander of 7<sup>th</sup> Infantry Division. To do so, we must be able to react quickly and provide similar intelligence disciplines at each echelon. As long as each element is rapidly deployable, it can be tailored to match the size and needs of the supported unit and deployed as soon as possible to

begin integration. For instance, if we have a squadron to support a mission, we can deploy as small an element as a platoon of mixed collectors or an element as large as the entire squadron, depending on the size of the supported organization and the intelligence requirement.

Task-organizing the element to the operational-level headquarters with a support relationship to the nearest tactical organization affords it the freedom to operate in the Aoi.<sup>13</sup> It offers the tactical commander greater influence over the Aoi and provides better situational awareness inside the AO. Doing so closes the void between operational and tactical influence. It allows the intelligence to flow directly to the tactical unit, providing an improved stream of reporting, while maintaining the operational commander's oversight and control of the reconnaissance asset. This closes the void between operational and tactical influence. The effect is a more cohesive effort between operational and tactical commanders.

## Example

A prime example of an organization that was able to bridge the current paradigm's gap at the brigade level is a combined troop-level reconnaissance organization that tested at the National Training Center (NTC) during Rotation 14-08 in support of 2-2 Stryker Brigade Combat Team. It contained a light reconnaissance troop, a long-range surveillance (LRS) detachment, an MFT, a sustainment team and a robust liaison element. While this example performed well, it is by no means the only such capability. Capability sets can range from a platoon-size element of mixed tactical collectors to a battalion-size element to support large-scale operations.

In this case, the troop was able to observe and influence most of the AO, and even beyond into division-level battle space, while remaining undetected and providing multi-disciplined situational awareness. In this example, the troop maintained a combined headquarters for multiple forms of intelligence, synthesizing intelligence from scouts, LRSs and MFTs. This ensured reports were properly routed

and that all collectors operated in support of one set of goals.

The troop avoided direct- and indirect-fire contact while spread across the battlefield. This resulted in continuous reporting before, during and after traditional reconnaissance assets were decisively engaged. Direct contact from the brigade's organic squadron, paired with the troop's observation and technical collection, created a complete picture of the battlefield and improved the commander's situational understanding. When they became decisively engaged, the redundancy with the squadron provided clarity. It served as a vetting function to compare the chaotic and conflicting reports typical of direct contact. It was also able to report directly to the brigade through BLOS communications equipment to answer specific requests for information without having to interrupt forces under fire.

One of the ways the troop remained undetected was by staying light. The LRS detachment, with assault climbers and basic-mountaineering-qualified Soldiers, was able to traverse extremely restricted terrain to establish observation posts unlikely to make contact. The scouts, by conducting an infiltration in restricted terrain, were able to camouflage their positions and maintain a smaller footprint than any other maneuver element on the battlefield. The scouts then pulled the MFT forward as the scout section provided SIGINT collection. Scouts were also useful to the MFT when advising about camouflage and site selection to increase survivability. In positioning the MFT forward, the troops were able to reduce the lag time getting the MFT involved in tactical-site exploitation (TSE) and give them freedom of maneuver to support interrogations across the battlefield. Overall, this humvee-based organization was able to maneuver across more restrictive terrain than the Strykers, maintain a smaller footprint and thus avoid compromise.

The added benefit of having a multi-disciplined ISR collection organization is that assets were able to rely on each other to create a truly redundant communication, cueing and security network. Each element was able to communicate with each other and provide

logistics support to their sister organizations. LRS was able to conduct reconnaissance pull to support the infiltration of the scouts, who in turn pulled the MFT.

By understanding each other's objectives and tasks, they were able to maintain continuous observation when their adjacent units had to break contact or conduct resupply. When an LRS team had to displace to avoid compromise, scouts were able to shift their observation to include the LRS team's named area of interest (NAI). The same happened when a scout section had to displace. On the objective, SIGINT and TSE could cue the attention of scouts and LRS to pinpoint targets within the NAI.

We task-organized a scout section with the MFT to position the MFT further forward than they were able to in the past, resulting in more rapid TSE and more responsive signal collection. It also provided a ground-based resupply option for LRS and facilitated evasion and recovery. Using the MFT's BLOS Global Rapid-Response Intelligence Package communications system, we were able to conduct a video-teleconference debriefing with an LRS team that had broken contact without having to launch a recovery operation. Finally, by sharing operational understanding, front-line collectors had a better understanding of their objective and could quickly cue from TSE.

Our command post was robust enough to receive multiple types of reports and compile them into one cohesive common operating picture. That picture being close to the brigade gave the staff and commander the option to see and request refinement of all reports, to include full-motion video, pictures and MFT reports. It also enabled us to receive immediate intelligence and keep our collectors updated on the situation in their sector.

Finally, by deploying with an augmented liaison element and co-locating our headquarters with the brigade headquarters, we were able to ensure reports would reach their intended destination. Our liaison element consisted of a field-grade officer, a senior captain and an S-3 Air noncommissioned officer to ensure our intelligence was

properly processed and routed and our ISR assets were properly employed. It helps to have a field-grade liaison officer to let the appropriate decision-maker know when priority intelligence requirements (PIRs) are satisfied, especially as a brigade headquarters deals with the vast quantity of intelligence that comes from having all battalions in contact simultaneously. This ensures PIRs are not lost in the shuffle and decision-makers have all the information they need.

On a side note, augmenting our headquarters with a geospatial-intelligence cell enabled us to employ LRS operations with minimal headquarters support from the brigade. It also maximized our ability to employ rotary-wing assets.

## Mitigating the risk

Creating a small multi-disciplined ground-based ISR asset that may operate outside the battlespace owner's AO comes with inherent risk that must be mitigated. It places regular units in a vulnerable and isolated position that makes direct-fire or indirect-fire compromise a potentially catastrophic event.<sup>14</sup> It also relies heavily on the responsiveness of higher headquarters for fire support and contingency management, and therefore requires risk to be underwritten at a high level.<sup>15</sup>

Just like employing a LRS detachment, the inherent risk in deploying a light element into an environment where it is likely to experience a relative combat-power overmatch makes it important to mitigate such risk with deliberate mission planning. Operating in small groups away from combat power increases the likelihood of destruction or capture upon compromise and reduces survivability in counter-reconnaissance. To mitigate, leaders must conduct very detailed planning with the adjacent unit and contingency coordination. It must include, at a minimum, the evasion plan of action, deconfliction of insertion and extraction, plus direct- and indirect-fire deconfliction. This should also be briefed to the battlespace owner due to the catastrophic nature of compromise.<sup>16</sup> The bottom line is the commander can only employ these forces when the operational tempo allows deliberate planning to

offset the risk of the operation.<sup>17</sup>

As a whole, these risks may dramatically reduce the likelihood of tactically employing such an organization.<sup>18</sup> It is not feasible that this form of light reconnaissance be the only asset available for intelligence collection due to its tie to a deliberate tempo and increased risk. On the other hand, light multi-disciplined ISR in conjunction with heavier capabilities would fill this deficit. The rewards of being able to observe an opponent accurately without influencing his environment makes employing such a capability set compelling.

## Conclusion

The nature of our new enemy requires us to maintain both security capabilities and light, mixed reconnaissance. Our shift to build heavier reconnaissance elements has come at the expense of our light-reconnaissance capability sets. In creating a light reconnaissance element to conduct this role, we have the opportunity to fill gaps in our capabilities.

We can finally give commanders the ability to influence the AoI and push ISR assets toward the FLOT while streamlining collaboration between combat-arms collectors and MI collectors.

Such an organization structure can be easily developed at the corps level as part of the reconnaissance and security construct of the future. However, there are several other ways commanders can create an *ad hoc* capability. In the light-infantry brigades, commanders can task-organize their MI company into a reconnaissance squadron. They can then shield a scout troop from mobility and firepower requirements to focus on low-profile ISR and pair MI collectors with maneuver assets. At the echelon above brigade, they can simply pull limited assets from their subordinate units or request support from the enhanced MI brigade

and pair them with maneuver forces to collect at a higher level.

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## Notes

<sup>1</sup> Gordon Sullivan, "Forward," *The Land Warfare Papers* No. 53, September 2005.

<sup>2</sup> John McGrath, *Scouts Out: The Development of Reconnaissance Units in Modern Armies*, Fort Leavenworth, KS: Combat Studies Institute, 2008.

<sup>3</sup> Sullivan.

<sup>4</sup> McGrath.

<sup>5</sup> Army Doctrinal Publication 3-0, *Unified Land Operations*, Washington, DC: Department of the Army, 2011.

<sup>6</sup> This is based off personal experience while serving in 4<sup>th</sup> Brigade, 1<sup>st</sup> Cavalry, and working with at least four other brigades. While doctrine states we were focused on a full-spectrum opponent, the operational Army was primarily focused on security operations in Iraq and Afghanistan.

<sup>7</sup> BG Leopoldo Quintas, "From the Commander's Hatch," *ARMOR*, July-September 2015. This is also much discussed in 201<sup>st</sup> BfSB but without a specific external source.

<sup>8</sup> Firsthand experience derived from NTC 14-03 and NTC 14-08.

<sup>9</sup> McGrath, supported by firsthand experience in Joint Readiness Training Center

Rotation 13-09 in support of 3/82 and NTC 14-08.

<sup>10</sup> Field Manual (FM) 3-55, *Intelligence Collection*, Washington, DC: Department of the Army, 2012. Pages 1-2 to 1-3 state this, but the practical implementation results in a compartmentalized technical reporting structure.

<sup>11</sup> FM 3-94, *Theater Army, Corps and Division Operations*, Washington, DC: Department of the Army, 2014.

<sup>12</sup> MG T.R. Ferrell, 7<sup>th</sup> Infantry Division sensing session with company commanders, Aug. 27, 2014.

<sup>13</sup> FM 3-94.

<sup>4</sup> Curtis Taylor, "Trading Saber for Stealth: Can Surveillance Technology Replace Traditional Aggressive Reconnaissance?," *The Land Warfare Papers* No. 53, September 2005.

<sup>5</sup> FM 3-55.93, *Long-Range Surveillance Unit Operations*, Washington, DC: Department of the Army, 2013. This is written specifically for LRS but still applies to all elements operating remotely from adjacent units.

<sup>6</sup> Ibid.

<sup>7</sup> Taylor.

<sup>8</sup> Ibid.

## Acronym Quick-Scan

**AO** – area of operations  
**AoI** – area of interest  
**BfSB** – battlefield surveillance brigade  
**BLOS** – beyond-line-of-sight  
**FLOT** – forward line-of-own troops  
**FM** – field manual  
**ISR** – intelligence, surveillance and reconnaissance  
**JBLM** – Joint Base Lewis-McChord  
**LRS** – long-range surveillance  
**MFT** – multi-function team  
**MI** – military intelligence  
**NAI** – named area of interest  
**NTC** – National Training Center  
**PIR** – priority information requirement  
**SIGINT** – signals intelligence  
**TSE** – tactical-site exploitation

# Bridging the Gap – Outfitting Standard Scout Platoons with M113A3s

by retired SFC David J. Neuzil

Armored brigade combat team (ABCT) Cavalry squadrons are setting the conditions to implement the standard scout platoon force-design update (FDU). The FDU fields Cavalry squadrons with six Bradley Fighting Vehicles (BFV) and 36 Soldiers per scout platoon. This configuration has proven to meet operational demands of reconnaissance and security missions more effectively than the current 3x5 BFV/uparmored humvee (UAH) mix. A squad leader is in charge of each of the six scout elements, and the configuration provides versatility, survivability, protection, mobility and firepower to

perform all reconnaissance and security missions required against any opponent in the future operational environment.<sup>1</sup>

However, this transition will take time to complete and may not be implemented across the total force. How then can we provide the ABCT combined-arms brigades (CAB) the benefits of the FDU in the meantime?

A short-term solution could be a scout platoon design that features three BFVs by three M113A3 armored personnel carriers (APC). CAB leadership could reallocate the M113A3s already within their formations. This proposed solution would allow commanders to

begin training in a six-vehicle configuration to expedite the development of internal standard operating procedures and contribute to doctrinal refinements.

The most significant advantage to using the M113A3 APC instead of the UAH is the increased troop-carrying capacity and the flexibility it affords without sacrificing protection, mobility or lethality. In the current 3x5 BFV and UAH mix, a platoon leader has the ability to dismount 12 scouts or two squads. The proposed short-term solution enables that same leader to dismount 18 scouts or three squads to conduct reconnaissance maneuver via

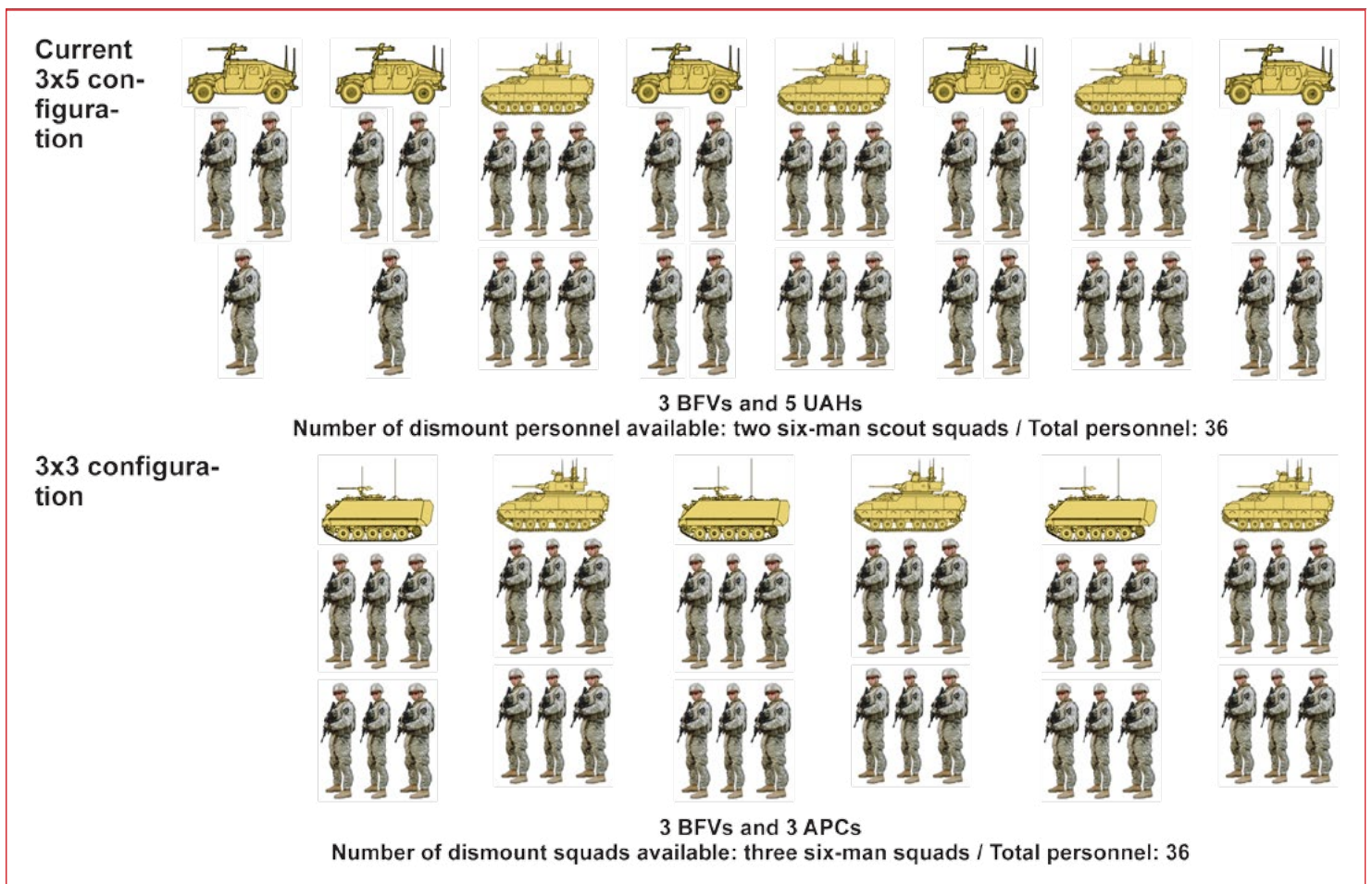


Figure 1. Comparison of current 3x5 configuration to proposed 3x3 configuration.

the substitution of three M113A3s for the five UAHs.

Also, leaders would have added flexibility to transport attached Soldiers and conduct more effective casualty evacuation thanks to the added space inside the APCs, which enables treatment of casualties enroute to the next level of medical care. Treating casualties enroute is not possible with the UAH.

## Lethality or increased recon?

Some argue that the loss of the UAHs decreases lethality of the formation because there would only be six platoons on the battlefield rather than eight (with the current five UAHs). However, the counterargument is that even with the eight vehicles of the current BFV and UAH mix, a platoon has to dedicate at least six Soldiers to move the extra vehicles (without degrading a crew), which leaves fewer Soldiers for dismounted maneuver. Therefore, fewer vehicles actually is a positive for the proposed solution because commanders can maximize reconnaissance elements forward with increased dismount capabilities. Arguably this enhances the ability to inform decisive action and provide mission command.

Also, the potential solution maintains the scout platoon's Long-Range Acquisition System capabilities with only slight modifications necessary to the M113A3.

Another advantage to the proposed solution is the increased survivability for the scout platoon with the use of M113A3s. History demonstrates the UAH has survivability shortcomings in a decisive-action environment against a determined threat. However, the M113A3 provides superior survivability and protection to the scout squad

compared to the UAH. When it's fitted with a rocket-propelled-grenade cage, the squad has a much greater chance to survive first contact in the APC.

The M113A3 also provides more versatile mobility than the UAH. An element with all tracked armored vehicles allows enhanced cross-country maneuver not available in the current 3x5 scout platoon configuration. In addition, the M113A3 still has capabilities similar to the UAH on paved surfaces but with the added advantage of being able to navigate in close quarters. The range of operation is another benefit to the proposed solution because an APC can travel farther than an UAH on a single tank of fuel.

Also, the location of the fuel tanks for both vehicles is another positive for the proposed short-term solution. The APC has the advantage in this area due to its external tank that provides an added safety benefit for the scouts with respect to survivability while maintaining the internal area for cargo.

## Summary

Until the Army can outfit all scout platoons with six BFVs, a potential short-term solution could be to replace the element's current five UAH platforms with three M113A3 APCs. With the reorganization of brigade combat teams across the force, M113A3 platforms are a feasible solution to bridge the gap. The M113A3 provides commanders the ability to adhere to the fundamentals of reconnaissance and security while maintaining troop flexibility, mobility, survivability and lethality in a decisive-action environment.

*SFC David Neuzil is now retired. When he wrote this article, he was a career manager with Office of the Chief of Armor, U.S. Army Armor School, Fort Benning, GA. His previous assignments included operations noncommissioned*

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## Notes

<sup>1</sup> "Standard Scout Platoon Proof of Principle," U.S. Army Training and Doctrine Command Capability Manager-ABCT and Reconnaissance, Capabilities Development and Integration Directorate, Maneuver Center of Excellence, April 16, 2014.

## Acronym Quick-Scan

**ABCT** – armored brigade combat team  
**APC** – armored personnel carrier  
**BFV** – Bradley Fighting Vehicle  
**CAB** – combined-arms brigade  
**FDU** – Force Design Update  
**UAH** – uparmored humvee

# 2016 General Donn A. Starry Writing Competition

The U.S. Army Armor School and Cavalry and Armor Association have announced the 2016 General Donn A. Starry Writing Competition.

The competition will evaluate and recognize outstanding writers from across the Army who demonstrate clarity and vision about the future of the mounted force. Articles for 2016 will address the future armored cavalry regiment and will answer the question: **What would be the optimal design for a modern armored cavalry regiment in**

**Eastern Europe or the Middle East and why? How would it be expeditionary and sustainable?**

Writers will be an Active Duty/National Guard/Reserve Soldier, Department of the Army civilian or retired/veteran. The Soldier or civilian does not have to be in the Armor Branch.

Participation confirmation is due no later than March 18, 2016, with article submission due no later than April 15, 2016.

Recognition of the winning author will occur May 6, 2016, during the Saint George Ball at Fort Benning, GA. He or she will receive a \$1,000 check from the Cavalry and Armor Association, a 1911 commemorative pistol and possible publication in **ARMOR** magazine.

For more information and requirements, see <http://www.benning.army.mil/armor/starry>.

## Send Us Your Manuscripts

**ARMOR** magazine's manuscript suspenses for 2016 are (these are separate from the Starry suspenses):

- **April-June 2016 edition: Jan. 6**
- **July-September 2016 edition: April 6**
- **October-December 2016 edition: July 19**

**For planning purposes, ARMOR magazine suspenses are an average of 10-11 weeks before the first month of the publication cycle. The first month of a publication cycle is January for the January-March edition, for example. Manuscript suspense will therefore fall in the first or second week of October.**

# The Army Reconnaissance Course

by **MSG Jacob Stockdill**

Several years of combat have taught us many things. Combat can be ambiguous; it is also a physically grueling endeavor. Also, our ability as both an Army and a branch to conduct reconnaissance and security operations have been severely degraded. Army leaders should expect that any element conducting reconnaissance forward of the main body should be physically fit, mentally agile and led by tough, capable leaders in both the operational and institutional force.

The Army Reconnaissance Course (ARC) embraces this philosophy and uses it to develop reconnaissance experts who are educated, doctrinally sound and capable of meeting that demand.

Reconnaissance operations require not only the mental agility to think through a problem set and find solutions, but they also require great physical endurance. ARC tests both through a series of three- to five-day field-training exercises. The student is placed in leadership positions that require the ability to maintain cognitive abilities through long, arduous hours in all types of weather. If students do not possess the physical ability to persevere, it quickly becomes clear, as their capacity to retain information or make critical decisions decreases by the minute.

These two attributes, physical and mental, are symbiotic, especially when Soldiers conduct long-term reconnaissance and security operations over extended distances. To gauge physical

acuity up front, ARC has instituted a physical-fitness test.

Many argue that a functional course should not require a physical standard. However, I could not disagree more. We cannot allow our cavalymen to be any less than excellent as we move closer and closer to the scout of 2020, where the expectation of junior leaders will be to fill information gaps at all levels of reconnaissance, conduct operations with indigenous reconnaissance elements and provide security to a multitude of joint formations. How can we expect anything less from our Soldiers and leaders within our community?

The greatest challenge academically in ARC is overcoming a fundamental lack of doctrinal knowledge from all



students. ARC does not teach tactics, techniques and procedures; rather it reinforces these by demonstrating the places where they support doctrinal solutions.

ARC was the first course taught in U.S. Army Training and Doctrine Command using Outcome-Based Training and Education after senior leaders recognized the need for reconnaissance leaders to be mentally tough and agile. Today ARC uses the Adaptive Soldier and Leader Training and Education (ASLT-E) methodology, maintaining its alignment with 21<sup>st</sup> Century Soldier competencies as well as the Army Learning Model 2015.

When students and cadre develop a peer-to-peer learning environment, ASLT-E works and a fuller understanding of doctrine begins. Once the student grasps doctrine in the classroom, the course forces them to execute and continue to learn in a field environment, where the second part of this process begins. By ensuring that each student is assessed academically against six base outcomes and seven leader attributes, ARC is able to clearly identify those who perform with a higher fundamental skill set. The ASLT-E methodology develops adaptive thinking by primarily taking the

traditional Army instructor and placing him or her into a role of facilitator. Cadre members are then charged with being the catalyst for critical thinking in both the class and in the field while reinforcing doctrine.

High standards are a hallmark of our Army; should we not strive to achieve them at all times? Cavalry squadrons, troops and scout platoons are at a critical junction, forcing us to evaluate how we would conduct our role as part of an expeditionary Army deployed to an area that could be austere, contested, politically sensitive and at the limit of lines of communication. Those who graduate from ARC excel both academically and physically in the pursuit of achieving a “higher fundamental” understanding of reconnaissance and security operations. This course unequivocally develops tough, capable leaders who are physically fit and mentally agile. Simply put, ARC requires graduates to be the best reconnaissance Soldiers, ready to lead a scout formation.

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*Headquarters and Headquarters Troop/Troop A, 1<sup>st</sup> Squadron (Airborne), 91<sup>st</sup> Cavalry, 173<sup>rd</sup> Armored Brigade Combat Team (ABCT), Schweinfurt, Germany; platoon sergeant, 1<sup>st</sup> Squadron, 4<sup>th</sup> Cavalry, Schweinfurt; squadron master gunner, 1<sup>st</sup> Squadron, 4<sup>th</sup> Cavalry, Schweinfurt; and scout-section leader, 1<sup>st</sup> Battalion, 15<sup>th</sup> Infantry Regiment, 3<sup>rd</sup> ABCT, 3<sup>rd</sup> Infantry Division, Fort Benning. His military education includes Cavalry Leader’s Course, Red Team, Inspector General’s Course, Bradley Master Gunner Course, Basic Noncommissioned Officer’s Course, Army Leader’s Course, Warrior Leader’s Course and Pathfinder, Airborne, Ranger and Air Assault courses. MSG Stockdill holds an associate’s of arts degree from the University of Maryland and is working toward completion of a bachelor’s of arts degree in homeland security from the University of Maryland.*

### Acronym Quick-Scan

- ABCT** – armored brigade combat team
- ARC** – Army Reconnaissance Course
- ASLT-E** – Adaptive Soldier and Leader Training and Education



# Experiences in International Competition and Opportunities That Follow

by SFC Michael A. Deleon

As missions in theater-specific operations wind down, I believe leaders have identified that, as tank crewman, we need to rebuild the proficiency level that steadily began to decline due to lack of tank usage during nearly 14 years of combat action. With that in mind, development of an armor-crew proficiency competition was determined to be a great way to build camaraderie and *esprit de corps*, and to reinforce training of critical crew skills.

## International competition

From 1963 to 1991, the Canadian Army hosted tank crews from the United States and various countries throughout Europe in a live-fire tank-gunnery competition known as the Canadian Army Trophy. Fast-forward to 2012: the U.S. Army Armor School at Fort Benning, GA, hosted its first tank-crew proficiency competition known as the Sullivan Cup. These type of competitions force units throughout our Army to increase their level of tank-gunnery training to identify highly proficient crews to represent their brigade at the Sullivan Cup.

Due to this international competition, a joint partnership began to open opportunities to noncommissioned officers (NCOs) across the U.S. Army, which has helped challenge crews and strengthen relations with our regionally aligned forces. Through these competitions and shared training methods, our NCOs can further develop themselves and their Soldiers while helping build a stronger relationship with our international partners.

The Armor School's first Sullivan Cup Competition in 2012 was only open to U.S. Army units. Two years later, the Armor School hosted another Sullivan Cup, this time extending the invitation to the Marine Corps and the Canadian

Army. The Marine Corps brought its Tiger Competition winners, and the Canadian Army brought two tank crews from its armor units. As a result of their participation, the Royal Canadian Armoured Corps School (RCACS) invited two American tank crews and two Bradley crews to compete in its own armored-fighting-vehicle (AFV) skills competition known as Worthington Challenge, located in Gagetown, New Brunswick, Canada.

*(Editor's note: The next Sullivan Cup competition is currently scheduled May 2-6, 2016.)*

The invitation was forwarded to the 2014 Sullivan Cup crew winners, which were SFC James Grider and his tank crew from Cobra Company, 2<sup>nd</sup> Battalion, 69<sup>th</sup> Armor Regiment, 3<sup>rd</sup> Armored Brigade Combat Team (ABCT), 3<sup>rd</sup> Infantry Division. The competition also called for a tank section, and I was fortunate enough to have my crew selected as "wingman" for the Sullivan Cup crew. The Bradley crews were chosen throughout our brigade by a Gunnery Table Six shoot-off. At the end of the qualification table, one crew from 3-1 Cavalry and another from 1-15 Infantry were chosen.

## Worthington Challenge

The Worthington Challenge competition spanned four days and was arranged in four "stands." Our U.S. tank team had the competition arranged in the following order: observation stand, drivers and maintenance challenge, march-and-shoot event and platform-specific gunnery.

Day 1 began with the observation stand, at which our crews were individually evaluated on a vehicle-identification test. This was followed by a mounted-crew vehicle-identification test from our tanks. Then a range estimation of random targets observed

from a bunker was conducted.

Finally, the vehicle commanders were individually evaluated with an all-arms call for fire mission. During this event, I was given the 10-digit grid to my location, a map, a compass and binoculars. As soon as the target was raised and I had eyes on it, I had one minute to plot the target, give a 10-digit grid and bearing, and then provide all the elements of a call-for-fire mission. A perfect score for this portion of the event was 15 points. A point was deducted for every 50 meters a vehicle commander was off, in any direction, when the call-for-fire was placed.

Day 2 kicked off with the drivers and maintenance challenge. During this event, each crew lined up at a starting point with a lane walker equipped with a stop watch. On the command "go," our crew sprinted 200 meters to the road-wheel challenge stand. At this stand, event officials marked off a road wheel we had to change in the fastest time possible. Upon completion, we lined up and then ran a mile and a half to the next event, a casualty-evacuation stand, where we had to evacuate a casualty from an M113 vehicle, evaluate the casualty, perform first-aid and move the casualty to a landing zone, all while being timed.

Once we completed the casualty-evacuation stand, we lined up and ran almost a mile to our final event for the day, the driver's challenge. We mounted our tanks and negotiated a two-mile driver's course that had a variety of obstacles and crossings. This was also a timed event.

During Day 3 of the competition, the march-and-shoot event tested our marksmanship and physical abilities. This portion of the competition required our crews to complete a confidence course for time, execute correct drills on the Canadians' C16 Automatic Grenade Launcher System (the

equivalent of our M240B), run four miles to the rifle range and conduct a stress shoot with our M4 rifles and M9 pistols from various positions and ranges. This entire event was conducted wearing a full modular lightweight load-carrying equipment vest load, Advanced Combat Helmet and a protective mask while carrying a “dummy” rifle (training aid).

Next came the final day of the competition. Our crews conducted day and evening tank-section battle runs at Canada’s gunnery range. Each battle run had three stationary and two offensive live-fire challenges. We engaged non-heated, scaled targets that were painted black for the main gun with a cluster of steel knock-down plates painted black for our machine-guns. Each tank section completed the two battle runs while being evaluated for time and accuracy.

At the end of the event, our two Abrams tanks staged with two Leopard 2A4 tanks and loaded up the remaining main gun and machinegun ammo to conduct platoon live-fire gunnery. This was a showcase of firepower and the culminating event of the competition.

Following this showcase, the results were announced during an awards ceremony. Our tank section took 3<sup>rd</sup> place in the “top fire team” portion. In addition, one of our Bradley crews, commanded by SSG Matthew K. Doty from 3-1 Cavalry, 3<sup>rd</sup> ABCT, 3<sup>rd</sup> Infantry Divi-

sion, took “top 25mm crew.”

(See *ARMOR*’s original article on Exercise Worthington Challenge, [http://www.benning.army.mil/armor/eARMOR/content/issues/2015/JAN\\_MAR/Kennedy.html](http://www.benning.army.mil/armor/eARMOR/content/issues/2015/JAN_MAR/Kennedy.html).)

## Building partnership

The camaraderie and mutual respect shown by U.S. and Canadian crews enhanced the success of the entire challenge. It also opened a partnership between the Canadian Army and our brigade that resulted in another invite from the Canadian Armor School to send a tank master gunner and a Bradley master gunner from our brigade to observe their Army Direct-Fire Specialist Course (ADFS). When asked by my brigade command sergeant major if I would like to participate, I immediately jumped on the opportunity to participate in the once-in-a-lifetime experience.

Three months after Worthington Challenge, I returned to Canada along with Doty, a Bradley master gunner, to observe the Canadian ADFS course. The six-week advanced course reinforces the quality of instructors Canada has who teach gunnery in their units. It also certifies these instructors to perform duties equivalent to that of U.S. master gunners on the range.

This opportunity allowed me to observe the training methods used to

train gunnery in the Canadian Army. The size of their armor force in comparison to ours affects the development of their training program. For example, in our brigade alone, we have 58 tanks, whereas their entire army has about 80 tanks. This size difference has an advantage, though, because it allows our Canadian counterparts more control of their armor units’ training plans by their actual armor school.

A good example of this is when a unit prepares a gunnery-training plan. The plan they develop must be sent to their armor school for review and approval. This added control allows them to certify all their tank-crew positions at the schoolhouse. In addition, I noticed the Canadian training aids (such as simulators) are high quality.

The result is that their tank crewmen are certified on each individual position by the schoolhouse before conducting gunnery as a crew. The theory behind this is that each individual crewman is proficient and ready to switch from their present crew to that of any other tank; they are interchangeable. Thus, there’s no need for a set gunner and tank-commander combination like U.S. crews observe. Once a Canadian crewman is certified in a specific position, he is certified until he gets promoted to a higher position.

Tank crewman in the Leopard 2 tank begin at the driver position. After about a year (or two) in that position, they attend a gunner course to be certified to operate the gunner station. The loader is the second in command of the tank in their army. Canadian soldiers can attend a turret-operator course to be certified for the loader station when they attain the rank of corporal. Following that course, they can go to a crew-commander course to certify as a tank commander.

At the unit level, gunnery training is planned and conducted by their instructor of gunnery (IG), a position equivalent to U.S. unit master gunners.

The Canadian unit’s IG conducts classes that cover basic crew tasks very similar to ours, but they teach their classes very in-depth, starting with basic engagement techniques and



**Figure 1. Tank commander SFC Michael Deleon maneuvers his tank into the first firing position during the live-fire shoot-off during Worthington Challenge in September 2014. (Photo by CPL Nick Alonso, Canadian Army Public Affairs)**

progressing all the way to advanced engagement scenarios. Experienced crew commanders teach classes using the following seven-step training principle:

- Review the theory;
- Review the fire order (fire commands);
- Conduct blackboard (chair drills);
- Conduct dry practice (dry practice on the tank);
- Conduct demonstrations (simulator demo);
- Practice on the simulator; and
- Debrief.

These classes are designed to teach gunners the basics in engagement techniques. When all classes pertaining to gunnery fundamentals are complete, the Canadian soldiers go to the range and apply what they learned. There is no qualification criteria during live-fire, but their IGs evaluate the crews to ensure they apply the fundamentals properly while engaging targets. This certifies the crews to move to the next level of gunnery, and it allows them to shoot live-fire with their troop (platoon) and eventually to conduct a squadron (company) live-fire exercise.

The first part of ADFS focused on the instructor portion, with a strict performance evaluation from the instructors on the students' ability to teach, instruct, coach and conduct a valuable debriefing session. They were then taught zeroing procedures, templating of ranges, elements of ballistics, AFV designs and how to conduct a gunnery-training program, range operations and range safety.

Just as in the U.S. Army, the individual unit is responsible for the quality control of the soldiers they send to this course.

During the instructor portion, students were separated by 120mm and 25mm classes. Then they were divided into small groups. The students came back together later in the course to conduct common-core training. I observed one of the small tank groups as they were taught how to instruct and then assigned classes to teach for evaluation. Each student received two classes to

prepare and teach (using the seven-step training principle) before their evaluation.

Upon completion of the instructor evaluations, electrical and optical (EO) technicians taught the students classes on boresighting, pull-backs (recoil exercise) and sight calibration. The Leopard 2 tank requires an advanced support package for its intricate fire-control system, so the crews did not boresight their own tanks. Instead, that was done by the EO techs. Then the boresight was confirmed by the students under the IGs' supervision. Following this training, the class travelled to the University of New Brunswick, where a professor taught them the principles of ballistics.

The next module of the class pertained to surface danger zones. During this training, the students had to template areas as safe-to-fire zones based on the weapons of specific vehicles, including a single fire point, multiple fire points and maneuver-box fire points. This instruction lasted a week and included multiple practical exercises prior to the test.

The ballistics module was next; it focused in-depth on the variety of ammunition the Canadian Army uses. Students were taught the origin of each type of ammunition, including development, purpose and effects on armor in relation to its terminal ballistics (what the projectile does when it strikes a target). Students were given a review and tested the following week on all the information covered.

In the final week of the course, small groups were assigned vehicles, for which they had to conduct a 10-minute briefing on its survivability, firepower, mobility and protection in relation to their own vehicle platform. Just like U.S. courses, the Canadian students



**Figure 2. CPL Taylor Smith (Canadian army direct-fire specialist candidate, RCACS) and CPL Riley Cook (ADFS candidate, RCACS) conduct blackboard shoots (chair drills) during the instructor portion of the Army Direct-Fire Specialist Course in Gagetown, New Brunswick, Canada. (Photo by SFC Michael Deleon)**

finished with a series of closeout tasks and an end-of-course review to help improve future courses.

## Lasting benefits

The opportunity to observe another country's course first-hand while integrating with their students provided insight for me to restructure my training program, in preparation for future live-fire exercises, upon return to my unit. In addition, I learned that the Canadian Army's armored force conducts a very standardized style of instruction, with emphasis on drilling the basics. This provides a very structured and strong basic foundation for their armor crews, which is something I think we need to improve in our Army.

From my observations, a company's success at gunnery is mainly determined by the proficiency and competence of that unit's platoon sergeants. Our master gunners and commanders develop and resource the gunnery-training plan for their unit. Therefore, it's up to the platoon sergeant and subordinate NCOs to fill in gaps of time with meaningful training while ensuring the platoon is prepared before and during gunnery. This is best accomplished by exposing our NCOs to multiple types of training methods. I believe integration of some of the techniques observed in Canada will help increase proficiency levels throughout our force. In the end, the interaction

with another country's army allows our NCOs to share training methods while strengthening the bonds between our Army and that of the other nation.

As we move forward, our armor NCOs have become smarter, more resilient and even more resourceful, thanks to technology. This increase in their knowledge pool results in more creative training methods that improve our NCO corps while helping develop and groom more lethal Soldiers.

In summary, the success of the U.S. Sullivan Cup and Canadian Worthington Challenge opened doors to further improve U.S.-Canadian military-to-military relations. Now 3<sup>rd</sup> ABCT, 3<sup>rd</sup> Infantry Division, offers slots to the Canadian Army to participate in the brigade's best-squad competition. Our brigade also sent NCOs and officers to serve as observer-controllers, and we plan to send an infantry company from one of the battalions to conduct joint training with a unit from their army in Canada. Through such joint training and exchange opportunities, we can better

understand each other's tactics, techniques and procedures. This in turn enables us to operate more efficiently when conducting multinational operations in various regions of the world.

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*Senior Instructor Operator's Course, Joint Firepower/Controller Course, M1/M1A1 Abrams Master Gunner Course, Advanced Leader's Course, Warrior Leader's Course and the Army Recruiter Course. He is pursuing a bachelor's of science degree in computer science at Troy University. Among his awards and decorations are the Order of St. George (black and bronze awards), Draper Armor Leadership Award and member of the Excellence in Armor Program.*

## Acronym Quick-Scan

**ABCT** – armored brigade combat team

**ADFS** – (Canadian) Army Direct-Fire Specialist Course

**AFV** – armored fighting vehicle

**EO** – electrical and optical

**IG** – instructor of gunnery

**NCO** – noncommissioned officer

**RCACS** – Royal Canadian Armoured Corps School

# Sullivan Cup 2016

The U.S. Army Armor School has announced the 2016 Sullivan Cup Precision Gunnery Competition hosted by the Maneuver Center of Excellence. This event is scheduled May 2-6, 2016, at Fort Benning, GA.

The competition will be a physically and mentally demanding world-class event that rigorously tests U.S. Army Soldiers, U.S. Marines and international partners in tank-crew maneuver, sustainment and gunnery skills.

Specific information regarding competitors and the rules of the competition are:

- The competition will identify the top tank crew from a field of crews representing the U.S. Army, U.S. Marines Corps and select international partners. The competition will evaluate crews on physical fitness, problem-solving and tactical and precision gunnery skills.

- Each Active Component Army division is invited to send one tank crew for every armored brigade combat team in its organization to compete in the Sullivan Cup. The 11<sup>th</sup> Armored Cavalry Regiment is invited to send one crew. Also, the Army National Guard is invited to send up to four crews to compete. The U.S. Marine Corps is invited to send one crew to compete.
- Two crews from each selected international partner are also invited to attend the competition. The selected international partners are Australia, Canada, Germany and the United Kingdom.
- Crews must consist of a four-man qualified tank crew. Crews must meet prerequisites for conducting full-caliber live-fire training as specified in Training Circular 3-20.31, Chapter 5, Paragraphs 5-30 – 5-35. Participating units will

not “stack” crews. Teams will consist of qualified battle-roster tank crews currently holding tank commander, gunner, driver and loader responsibilities within their respective organizations. Drivers and loaders will be 19K10 personnel. Gunners will be 19K20 personnel. Tank commanders will be either 19K30/40 or 19A personnel.

- Soldiers selected to compete in the Sullivan Cup should arrive in peak physical condition. Soldiers with profiles or conditions that prohibit them from competing in physically demanding events will not be allowed to participate in the competition, resulting in the disqualification of their crew from participation.

Visit the Sullivan Cup Website at [www.benning.army.mil/armor/sullivan](http://www.benning.army.mil/armor/sullivan) for more information.

# U.S. Army Observes 75<sup>th</sup> Anniversary of Armored Force

## Part 2 of 2

Growing Soviet might and creation of the Warsaw Pact posed new challenges to the Army in Europe post-World War II. American military planners envisioned a possible World War III opening with a rapid Soviet/Warsaw Pact invasion of West Germany on a massive scale. Stopping this mechanized avalanche quickly became the U.S. Army's dominant concern. American armored forces were expected to play the principal ground role in what was likely to be a fast-paced war of maneuver.

Yet American armored formations continued to field the same platforms used in World War II, while Soviet tanks steadily improved in number and capability. Similarly, the rapid demobilization that followed World War II left the Army with only 10 divisions on active service by 1948. Only one was an armored division. Readiness also eroded, leaving the Army with limited means with which to confront Soviet aggression.

In the background of U.S. lack of readiness was a significant breakthrough in Soviet tank design in 1964. The T-64 was produced, which for the first time used an automatic loader, reducing the crew of the tank to three crewmen. Subsequently this model, and the later T-72 and T-80 tanks, introduced further innovations that influenced armored warfare by introducing guided missiles into the tank-ammunition mix, allowing anti-tank guided weapon fire from standard tank guns. The most advanced Soviet tank up until the end of the Cold War was the T-80U, which shared similar characteristics with the M1A1 (turbine engine, advanced fire-control systems, strong armor and fire-power).

Also, infantry fighting vehicles were developed in the 1960s with the Soviet Union's BMP-1, for the first time allowing supporting infantry to accompany tanks on a battlefield when nuclear-weapon use was expected.

During the Cold War, as the

North Atlantic Treaty Organization (NATO) assumed armored warfare to be a dominant aspect of conventional ground warfare in Europe, the light tank was largely discontinued and heavy tanks were also mostly abandoned. The medium-tank design, however, evolved into heavier models due to an increase in armor. The larger-sized main weapon resulting in the main battle tank (MBT) came into existence, combining most of the different types of tanks during World War II. The MBT continued to evolve; by the 21<sup>st</sup> Century, most advanced Western MBTs were built around powerful engines, large 120mm guns and composite armor.

For the most part, NATO armored doctrine remained defensive and dominated by use of nuclear weapons as deterrence. Although most NATO nations began the Cold War period with a large number of U.S.-designed tanks in their fleets, there was a considerable degree of disagreement on the design

of future MBTs among NATO's major nations. Both the United States and Germany experimented with, but abandoned the missile-armed MBT-70. The M26 Pershing basic design of the United States evolved until the M60 Patton MBT was replaced with the gas-turbine powered M1 Abrams in the 1980s.

## Korean War

With the U.S. Army focused on Europe, North Korea invaded South Korea in 1950, just days after the establishment of the Armor Branch. North Korean columns of tanks and infantry quickly overran the small U.S. contingents in their path and routed South Korean forces. Within weeks, the remnants of the American military presence had been driven into the southeast corner of the Korean peninsula, where they formed a final defensive position with surviving South Korean soldiers (the Pusan Perimeter).

There American and United Nations



**Figure 1. A Pershing tank scrambles around the edge of a burning Korean village lately occupied by Communists to get at an enemy tank delaying the U.S. advance Sept. 4, 1950. (Photo by SGT Frank C. Kerr, <http://www.dodmedia.osd.mil>)**

reinforcements began to arrive, including several U.S. Marine Corps and Army tank battalions. These mounted units initially performed defensive actions, counterattacking North Korean breakthroughs and strengthening key positions. They then spearheaded a counteroffensive synchronized with large-scale landings at Inchon. The ensuing drive to the 38<sup>th</sup> Parallel witnessed several tank-vs.-tank actions that generally favored American tank crews and resulted in the destruction of much of the North Korean mounted force.

Reconnaissance elements gathered information regarding enemy dispositions and intent, surveyed terrain, acted as a reserve and provided general security. Their ability to engage enemy armor in the early stages of the conflict remained sharply limited by their reliance on M24 light tanks, which proved no match for North Korean T34/85s.

The war also marked the first operational employment of the new combined-arms reconnaissance platoons adopted as a result of analysis of the World War II experience. These platoons possessed great versatility, but their mix of jeeps, light tanks and armored personnel carriers made command in rugged terrain difficult due to the differences in mobility among these platforms. At times, the tanks of different platoons were combined to form a more powerful armored strike force. Similar actions with the mortar and infantry elements could provide a concentration of fire support or an enhanced ability to operate in complex or urban terrain.

Combat operations in Korea and lingering fears of an outbreak of war in Europe triggered efforts to field new materiel to armor and cavalry organizations. Initially, mounted units dispatched to Korea entered combat with the same M4 and M26 tanks that had fought in World War II. Indeed, the need for tanks in Summer 1950 became so intense that vehicles only recently placed on display at Fort Knox as monument vehicles were pressed back into service.

An upgraded version of the M26 also made its debut in Korea: the M46. The Army, however, also undertook the

rapid design and production of a new tank, the M48. Development began in 1950, and by 1953 the new platform was in full-rate production. The rapid pace of development resulted in many teething troubles, but the Army considered it more important to quickly field a satisfactory tank rather than await perfection of the design. The M48 featured a dome-shaped turret that improved ballistic protection, a 90mm gun and an improved fire-control system. Continuous improvements based on engineering reviews and soldier feedback resolved early problems, resulting in a tank both reliable and popular.

After the Korean War, American armored development focused on building tanks superior to Soviet designs. Throughout the 1950s and 1960s, Soviet tanks became more effective and continued to outnumber their American and NATO counterparts. Hence, the continuous evolution of Soviet tank designs spurred the United States to experiment with advanced technologies and accelerate the pace of tank development. American armored units anticipated being outnumbered in any conflict in Central Europe. Therefore tank systems that improved the ability to hit and kill a vehicle at long range received priority development. This emphasis resulted in a fire-control system that included a rangefinder, ballistic computer, ballistic drive and gunner's periscope. Such fire-control systems marked a major improvement over the optical sights used in World War II, where the gunner's ability to gauge distance and mentally calculate the impact of wind, cant and movement largely determined accuracy. Fire-control systems underwent continuous improvement throughout the Cold War, thereby establishing the technological basis for the fire control and stabilization of the later Abrams tank. Related developments focused on improving guns and ammunition. American tanks also tended to be more spacious and comfortable than Soviet ones. Crew stations were designed to minimize fatigue and prevent the rapid erosion of combat ability through discomfort.

By the late 1950s, the Army had begun design work upon a successor to the

M48, using proven components and technologies. The resultant M60 matched a 105mm gun and diesel engine with the M48's turret and chassis. Combat units first received the M60 in December 1960. Subsequent modifications gave the M60 a distinctive look and resulted in the M60A1. The M60A1 proved popular and largely free of the major teething troubles encountered with the early M48s. The M60-series reflected a steady qualitative increase in component development and armor protection that could be traced to World War II. The M60A3 became the final version of this series and constituted a major systems upgrade that incorporated technologies also used on the M1 Abrams tank.

The evolutionary nature of American tank designs resulted in increasingly reliable tanks generally popular with their crews. However, several efforts were made to build revolutionary designs incorporating leap-ahead technology. In the 1950s, for example, the Army developed the T95 as a potential replacement for the M48. It featured a variety of new concepts, including the Optical Tracking, Acquisition and Ranging System. This device measured the time taken for a pulse of light to travel to and from the target to provide an accurate range. It was the precursor to the laser rangefinder but suffered from being too fragile and prone to generating multiple returns. The MBT-70 design of the 1960s featured an auto-loader, a dual gun/missile main armament, a three-man crew located in the turret and hydro-pneumatic suspension. Both the T95 and the MBT-70, however, proved too expensive and complex. Although they never advanced beyond a developmental stage, they did pioneer new technologies later brought to maturity in the Abrams tank.

Cavalry and reconnaissance organizations benefited first from the fielding of the M41 light tank, which carried a 76mm gun and improved armor compared to the M24. Efforts to field a satisfactory armored car, however, failed. Achieving the right combination of desired qualities proved elusive, as did parallel actions intended to generate a more survivable jeep that did not sacrifice the vehicle's low silhouette and

quietness. The M114 Armored Command and Reconnaissance Vehicle offered armored protection and tracked mobility, but it proved mechanically unreliable and never met expectations.

Organizationally, armored cavalry assigned to divisions and armored-cavalry regiments retained their combined-arms nature, adding air-cavalry components equipped with helicopters. Maneuver battalions continued to include a scout platoon, but the configuration of this unit underwent continuous change in the years following World War II, fluctuating between combined-arms organizations and pure scouts intended for information collection over a broad frontage.

## Vietnam War

Despite its focus on countering the Soviet threat to Central Europe, in the 1960s the Army found itself embroiled in a war in Southeast Asia. In 1965, the United States committed to a major deployment of ground troops to South Vietnam to ensure that nation's continued independence from North Vietnam. Initial terrain assessments suggested little role for armored units. Jungles, swamps, paddy fields and other topographical features seemed to reduce vehicular operations to a

marginal role. The Army also considered difficult terrain and counterinsurgency (COIN) the domain of the rifleman, not the tankner.

Hence the first mounted units to arrive in South Vietnam initially found themselves greatly restricted in their operations, often performing base security. Over time, these restraints disappeared, and armored vehicles became commonly used in many roles, fully exploiting their combination of firepower, protection and mobility.

Since doctrinal guidance remained oriented on a European battlefield, basic principles of combined-arms operations had to be applied to the fundamentally different operational environment of Southeast Asia. Armor and cavalry organizations therefore developed through trial and error their own tactics, techniques and procedures suited to South Vietnam and COIN. In doing so, they stressed the use of firepower and mobility to counter Viet Cong guerrilla tactics. Tanks often accompanied infantry units, frequently leading their advance. They provided fire support, created jungle paths, cleared areas for helicopter landings, performed bunker-busting and carried supplies to forward units.

To disrupt ambush and sabotage of principal roads, armor units conducted "thunder runs." In these operations, armored columns intentionally entered areas known for ambush activity. They deliberately sought contact with enemy forces. Upon contact, the column dashed through the ambush area, regrouped and assaulted the hostile force. Throughout the operation, armor relied on its firepower, armor and speed to obtain a rapid, decisive result.

More mundane but vitally important missions included convoy escort and route security to sustain the flow of supplies throughout South Vietnam.

Mounted units sought to force battle upon elusive enemy forces. Armor and cavalry units used a search pattern in which platoons moved in a clover-leaf formation. Once hostile forces were discovered, "pile-on" became the principal tactic. All friendly units in the vicinity of the target raced toward the contact area, assaulting from multiple directions and employing maximum firepower. To provide security during roadmarches, armored units adopted the herringbone formation when halted. This formation provided all-round security and minimized the chances of being surprised.

For tank and cavalry units, the M48A3 tank and the M113 armored personnel carrier represented the principal armored fighting vehicles. The M48A3 benefited from several improvements over the original M48, including the incorporation of features developed for the M60 series. Crews especially appreciated the M48A3's survivability. Mines tended to throw tracks without destroying the vehicle, while rocket-propelled grenades (RPGs) needed to hit a vital area to destroy the tank. Crews regularly continued to fight their vehicle long after being immobilized or otherwise damaged.

The M113 did not possess the same level of protection, but its superior mobility permitted it to operate throughout South Vietnam. It was often used in a tank-like role, with its crew fighting from the vehicle rather than dismounting to attack on foot. After initial engagements in which M113s suffered heavy crew losses while operating the exposed .50-caliber



**Men of Troop B, 1<sup>st</sup> Battalion, 10<sup>th</sup> Cavalry Regiment, 4<sup>th</sup> Infantry Division, and their M-48 Patton tank in a position in the jungles in the Central Highlands of Vietnam, June 1969. (Photo from U.S. Army Military History Institute, Vietnam Photos Miscellaneous Collection)**

machinegun, the vehicle underwent modification in the field. Two more machineguns were mounted, and gunshields were added to all positions. Thus reconfigured, the vehicle proved a more effective combat platform and became known as the Armored Cavalry Assault Vehicle (ACAV). Against enemy infantry, it relied upon its armor and mobility to attack at close range, where its machineguns proved deadly. However, it remained vulnerable to mines and RPGs, resulting in a variety of improvised measures intended to boost survivability. More heavily armed infantry fighting vehicles such as the M2/M3 Bradley Fighting Vehicle (BFV) would be based on experience with the M113.

The M551 (Sheridan) also made its combat debut in Vietnam as U.S. armored-cavalry units began exchanging their M48A3 Patton tanks for M551 Sheridan Armored Airborne Reconnaissance Assault Vehicles in January 1969. By 1970, more than 200 Sheridan tanks were operating in Vietnam. The Sheridan evolved from efforts to build a light tank for air-assault operations that could also engage armor. To achieve this goal, the vehicle carried the Shillelagh gun/missile launcher. The missile promised the ability to destroy any known tank, while the 152mm gun provided a powerful weapon against soft targets. The gun, however, used caseless ammunition that often left smoldering debris in the gun tube, resulting in the premature detonation of subsequent rounds. It took several years to eliminate this problem. The gun's recoil also lifted the front roadwheels off the ground and damaged the delicate missile fire-control system.

Nevertheless, the M551 deployed to Vietnam in the expectation that it would provide a powerful weapon system to troops entering combat, even though it required further development and testing. It proved a partial success. Its 152mm gun proved devastating to enemy personnel, but the vehicle's light aluminum chassis provided only limited protection. Mine explosions tended to rip open the chassis, detonating the ammunition and destroying the tank.

Armor played an important role

throughout the Vietnam War. From an initial minimal presence, mounted combat elements increased until they represented a significant percentage of the Army's ground-combat forces. Armor capitalized on its own mobility and firepower and the reconnaissance capabilities of the newly developed air cavalry to find and engage an elusive opponent. The combined-arms nature of division cavalry squadrons and 11<sup>th</sup> Armored Cavalry Regiment (ACR) proved highly effective in a COIN environment, validating the organizational and doctrinal principles embedded in their design.

## Cold War to Gulf War

After the Vietnam War, the Army's focus returned to countering the Soviet threat in Central Europe. Lessons-learned in Vietnam tended to be lost or neglected as "special cases." The continued evolution of Soviet capability encouraged this abandonment of the Vietnam experience. In 1973, the outbreak of war between Israel and its Arab neighbors provided the U.S. Army an opportunity to study the capabilities of new Soviet weapons the Arab armies used. The war included the largest clashes of armor since World War II and witnessed the combat employment of American M60 tanks in Israeli hands.

This tank did not prove invulnerable. Israeli tankers preferred the British Centurion tank, since rupture of the M60 hydraulic lines tended to burn crews and turret hits too often ignited the ammunition stored there. Moreover, the high tank-loss rates on both sides indicated that the battlefield had become much more lethal, in part because of the widespread use of anti-tank guided missiles and more powerful RPGs.

This war forced the Army to review critically its assumptions of superiority over the Soviets. The emergence of the T62, *boyeva mashina pekhoty* (BMP) (Russian infantry fighting vehicle) and Sagger anti-tank missile suggested that the U.S. Army might be losing its technical and qualitative edge. By the mid-1970s, the Soviet Union was fielding a new generation of armored vehicles, capitalizing on technical and doctrinal developments since World War II. To

American planners, it became clear that the next war would occur with little warning, negating U.S. plans that assumed several months' advance notice in which to mobilize and deploy more forces overseas. The Army would enter combat with whatever forces were on hand.

These realizations led to a series of sweeping military reforms intended to improve Army readiness and ensure its battlefield superiority. A revolution in training began with the establishment of the U.S. Army Training and Doctrine Command in 1973. Training became more realistic and focused on meeting high readiness standards, epitomized by the opening of the National Training Center (NTC) at Fort Irwin, CA, in 1980.

A parallel shift in doctrine and organization generated more capable and combat-ready organizations collectively described as the Army of Excellence. On the battlefield, implementation of AirLand Battle doctrine oriented combat units toward the destruction of enemy forces throughout their depth through the integrated use of air and ground assets. Central to applying this doctrine at the tactical level lay the fielding of the M1 Abrams tank and the M2/M3 BFV in the early 1980s. Designed to operate together in an environment dominated by Soviet armor and mechanized infantry, these new platforms possessed much greater armor protection, carried more powerful weapons and proved more mobile than their predecessors.

The M1 Abrams was optimized to fight in Central Europe against a Soviet-style threat. Its design reflected the combination of lessons-learned in mounted combat since World War II and the most advanced technology available for fielding. Consequently, the M1 represented a major advance in capabilities, particularly in the areas of lethality and survivability. Armor protection derived from the British development of Chobham composite armor – layers of armor separated by various materials whose precise composition has remained classified. Its gas-turbine engine ensured sufficient power to achieve a high cross-country speed. The use of blow-off panels, an automatic fire-suppression system and the provision of an armored bulkhead



separating fighting compartment and main-gun ammunition all served to ensure the crew's survival. The original 105mm main gun was subsequently upgraded to a 120mm weapon in the M1A1. An array of sophisticated electronics provided much more effective stabilization and permitted a true fire-on-the-move capability. Indeed, when the M1 first participated in NATO maneuvers, it received the nickname "Whispering Death" because of its ability to maneuver quietly and destroy targets consistently without stopping.

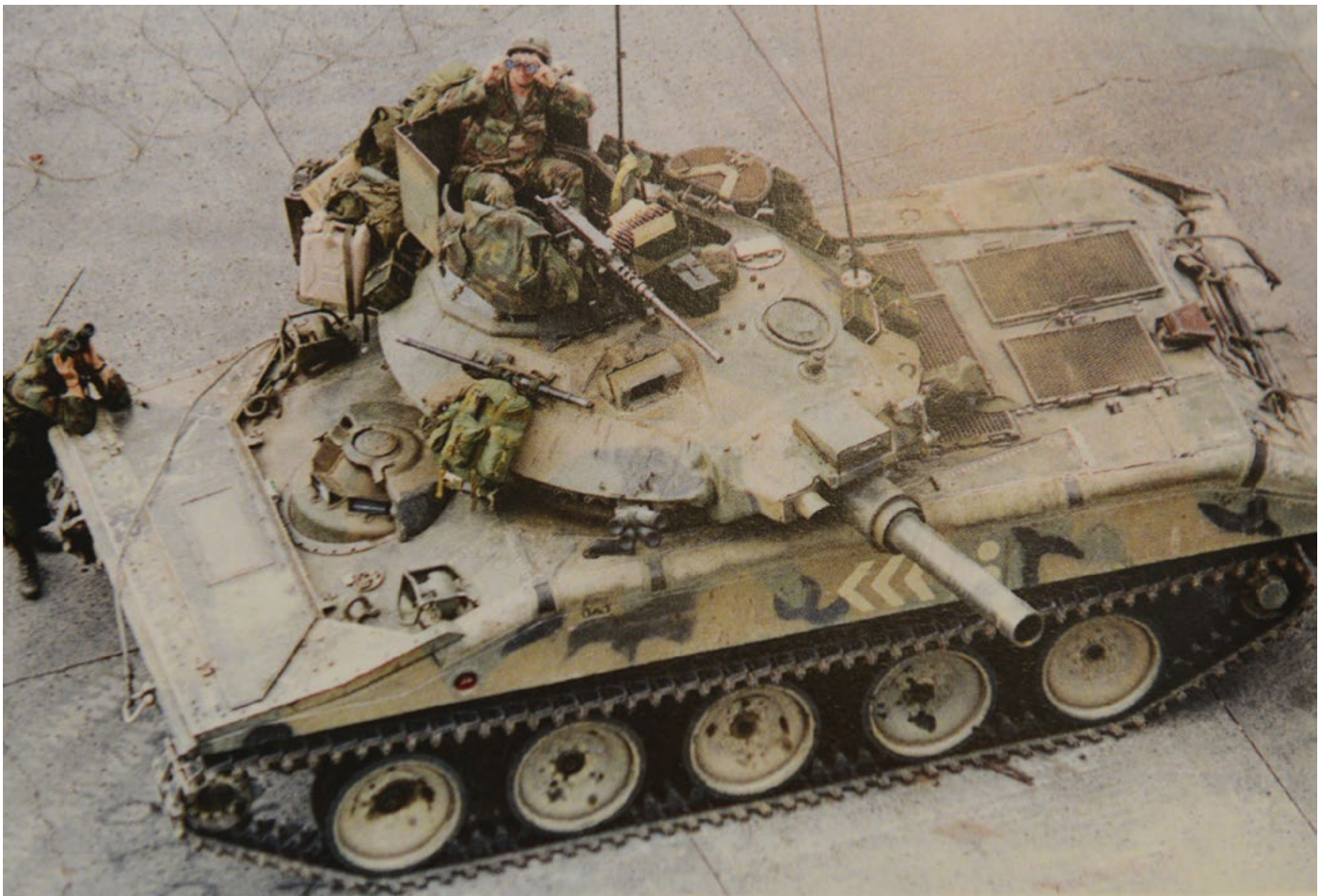
Development of the BFV began in response to the M113's and ACAV's limitations. The appearance of the Soviet BMP further encouraged a vehicle with greater combat capabilities than the earlier personnel carriers. Initially designed as an infantry fighting vehicle, a modified version was adopted for cavalry usage and designated the M3 Cavalry Fighting Vehicle (CFV). Both versions carried a 25mm cannon, a machinegun and a tube-launched,

optically tracked, wire-guided (TOW) missile launcher. The infantry version carried an infantry squad, while the CFV carried a scout team and more TOW missiles. The M3 CFV entered service in 1984.

Initially, every scout and cavalry platoon was to be equipped with the M3 CFV. However, concerns about the vehicle's size, noise and heavy firepower resulted in a desire for a smaller platform better suited to stealth and the avoidance of combat. A series of tests at NTC during the 1980s finally encouraged the Army to adopt the humvee for scout platoons. Initially designed as a general utility vehicle and replacement to the jeep, the humvee's relatively small size, quietness and ease of sustainment made it attractive as a scout platform, although its lack of armor protection raised concerns about its survivability. Nevertheless, in 1990, Army leadership directed the fielding of humvees to all scout platoons. Armored-cavalry platoons retained the M3 CFV.

In 1990, the United States responded to Iraq's invasion of Kuwait with a massive buildup of American and allied forces in Saudi Arabia. In Operation Desert Storm, this force liberated Kuwait and advanced into Iraq, destroying much of that nation's conventional military arsenal. This military action provided the Army an opportunity to apply AirLand Battle concepts and measure the effectiveness of the training reforms and materiel improvements implemented in the 1980s. The result proved a stunning success. The Iraqi army was outmaneuvered, engaged throughout its depth and destroyed in a series of rapid engagements. The application of powerful ground forces, spearheaded by armored units, proved decisive in achieving victory.

The Gulf War demonstrated the effectiveness of the Abrams tank and CFV. Despite pessimistic forecasts of their ability to function in a desert environment, both vehicles proved popular



**Figure 3.** An M551 Sheridan outside the Apostolic Nunciature, the Vatican's embassy, during negotiations for Panamanian President Manuel Noriega's surrender. (Photo courtesy of the Center of Military History)

with their crews and generally reliable. Indeed, many potential problems were identified during pre-war rotations in NTC's desert conditions. The combat power and survivability of both platoons tended to surpass expectations. CFVs proved capable of engaging most targets encountered, including Iraqi tanks. The Abrams tank proved greatly superior to the Soviet-built T-72 in combat. It engaged Iraqi tanks in all weather conditions and at night, thanks to the use of thermal sights. Abrams crews repeatedly began engagements at longer ranges than expected by Iraqi tank crews. Without having to stop to fire, Abrams tanks scored a high rate of first-round kills and simply drove through Iraqi positions. Armored-cavalry organizations performed reconnaissance, security and economy-of-force operations. Battalion scouts still equipped with the M3 CFV proved robust, but those employing humvees operated under leadership-imposed constraints. Concerns about the vehicle's vulnerability led to their use in roles that minimized their exposure to hostile fire.

## Armor in 1990s

After the Gulf War, the Army's structure and mission set began to change. No longer did defeat of the Warsaw Pact dominate military thinking. The Soviet Union ceased to be a threat, and in fact ceased to exist, but the Army's deployment rates reached unprecedented levels for a nation at peace. Humanitarian aid, peacekeeping and stability-and-support operations became regular activities. The use of armor in such missions seemed unnecessary, and in the absence of the Soviet threat, critics questioned the need for a heavy mounted force.

However, armor adapted to the changed circumstances and deployment patterns of the 1990s. The tactical agility and versatility that made mounted units effective on the battlefield proved readily applicable to missions other than high-intensity combat. In peacekeeping roles, the commitment of heavy forces proved a powerful demonstration of America's national will. The presence of armor and cavalry units served to deter potential attacks and provide support to lighter troops responsible for security,

checkpoint operations, escort duties and weapons inspections. The heavier mounted forces possessed the firepower and mobility to destroy those threats undaunted by the simple presence of American Soldiers.

The reorientation of armor away from the Cold War's Central-European focus started before the Gulf War. In 1989, armor participated in Operation Just Cause, which removed Panamanian strongman Manuel Noriega from power and permitted the establishment of a more democratic government in Panama. Sheridans from 3-73 Armor provided fire support, using their 152mm guns to blast Noriega supporters out of concrete buildings. They also eliminated roadblocks, evacuated wounded and used their presence and firepower to discourage escape and counterattack efforts.

In 1994, American forces intervened in Haiti to prevent widespread violence and ensure a peaceful transition to a democratic government. Subsequently, U.S. forces supported a multinational force that remained to ensure peace. The 2<sup>nd</sup> ACR deployed to Haiti as part of this effort. Reorganized after the Gulf War into a light-cavalry force equipped primarily with humvees, 2<sup>nd</sup> ACR performed a variety of security missions that included round-the-clock security patrols in the capital city of Port-au-Prince, convoy security and protection of key sites. Its activities required a mix of mounted and dismounted operations. It also maintained quick-reaction forces possessing more firepower and manpower ready to respond to a sudden eruption of violence.

In the wake of the Gulf War, the Army faced a series of new challenges. With the Cold War ended and military threats to American national interests diminished, downsizing and budget reductions followed. The Army's stance changed from forward-deployment from bases overseas to force projection from the United States. Peacetime deployments reached an unprecedented high as troops deployed to support peace and humanitarian actions worldwide. These commitments placed a drain on the Army's ability to respond to a large-scale conventional conflict. In the absence of more troops and

money, the Army needed to increase significantly the combat effectiveness of its available forces.

The Army initiated a re-engineering of its institutional and operational forces. Known as Force XXI, this process sought to exploit new technology – especially information technology – and command concepts. In particular, it sought to apply new information technology to increase the situational awareness of battlefield leaders. Through reliance upon global positioning systems, a tactical Internet and digital communications, commanders would receive more accurate and timely information regarding friendly and enemy forces. It would then be possible to conduct precision maneuver, massing combat power on critical targets and weak points without necessarily massing men and materiel. Continuous and near-real-time updates of battlefield information would permit operations to occur at a pace faster than the enemy's ability to react.

The inherent armor characteristics of mobility and firepower lent themselves easily to this environment. Indeed, many early Force XXI initiatives focused upon integrating digital technologies into heavy-force organizations. Digitization possessed the dual potential of improving overall combat effectiveness and reducing the danger of fratricide.

Force XXI concepts were tested during a series of advanced warfighting experiments that occurred throughout the 1990s. Collectively, these experiments established the baseline for the creation of a digital force with an enhanced ability to influence the battlespace.

Force XXI concepts remained in a developmental state throughout the 1990s, but tangible evidence of their adoption could be found in the M1A2. This platform constituted the Army's first tank intended to fight in a digital environment. Fielded in 1993, it outwardly resembled the M1A1. However, the M1A2 proved unique in its internal electronics. Its automated architecture comprised multiple linked subsystems associated with navigation, tactical operations and fire control. This information was displayed automatically to the

crew and to other electronically linked vehicles. The M1A2 also ran continuous self-diagnostic tests to determine mechanical or electronic failures. The commander's independent thermal viewer permitted the gunner and commander to search separately for targets, greatly increasing the speed at which targets could be identified and acquired.

An upgraded version, the M1A2 System Enhancement Program, appeared in 1999. It incorporated multiple improvements over the original M1A2. Heavier armor improved survivability, while overall operability increased with a pulse-jet system. Lethality increased by upgrading the commander's independent thermal viewer, including a second-generation forward-looking infrared-imaging capability. Communications also benefited from the addition of Force XXI Battle Command Brigade and Below (FBCB2). This device automatically shared information among elements of a brigade combat team (BCT) and gave them an identical view of the battle area. It dramatically improved the ability to track battlefield developments and share a wide range of data, including graphics. FBCB2 also provided connectivity to a wide range of digital communication systems used by division and brigade components.

The expense associated with procuring new vehicles ensured the Abrams tank would remain in service for the foreseeable future. Hence, sustaining its combat effectiveness became a priority focus. In 1999, the Abrams Integrated Management Program resulted. Under this program, tanks were rebuilt, worn parts replaced and new components inserted. At Anniston Army Depot, AL, each tank was disassembled and its turret shipped to Lima Army Tank Plant, OH. Both turret and hull were separately overhauled and then reassembled at Anniston. This process returned tanks to near-brand-new condition and greatly extended their service life.

Light armored platforms did not fare as well. The M551 Sheridan finally left active service, although it continued to equip the opposing force at NTC. Its replacement, the M8 Armored Gun System (AGS), was ready for fielding in 1996 when budgetary considerations



**Figure 4. M1A1 Abrams main battle tanks of 3<sup>rd</sup> Armored Division move out on a mission during Operation Desert Storm. An M2/M3 Bradley can be seen in background. (Photo by PHC D.W. Holmes II, U.S. Navy)**

resulted in its cancellation. The loss of both platforms eliminated armor support for airborne/air-assault units altogether, symbolized by the deactivation of 3-73 Armor, which performed this role. Similarly, AGS cancellation ended plans to modernize the humvee-equipped 2<sup>nd</sup> ACR. An uparmored version of the humvee began to enter service in 1996. It provided greater protection for its crew and passengers, but it could not replace the capabilities associated with AGS.

In addition to its support for Force XXI and platform upgrades, the Armor Branch played a leading role in the design of a contingency reaction force. The prevalence of stability and support operations in the 1990s often led to the creation of *ad hoc* task forces built from units taken from different division and corps. This solution proved an effective temporary measure, but it disrupted the training activities of the formations involved. The Army therefore sought to create a permanent strike force to which units could be assigned for a given mission. Built on 2<sup>nd</sup> ACR, the strike force incorporated the concepts and materiel emerging from the Force XXI process and related advanced warfighting experiments. Plans for this organization remained in development when they were superseded by Army Transformation.

## Army Transformation

In 1999, Army Chief of Staff GEN Eric K. Shinseki unveiled a new vision for adapting the Army to the expected operational environment of the 21<sup>st</sup> Century. He was particularly concerned about the Army's ability to deploy forces into a real or potential crisis in a timely fashion. He believed early intervention in a crisis could prevent its escalation and reduce overall troop commitments. However, the heavy force possessed combat power but could not deploy rapidly. Light forces lacked survivability, especially if faced with an armored threat. Therefore work began on a medium force that merged rapid deployability with lethality and survivability. This force evolved into the Stryker BCT (SBCT), named for the common platform the unit used. The first Strykers were delivered to the Army in 2002, and the first SBCT became operational in 2003.

The SBCT did not replace heavy or light units. Optimized for contingency and low-intensity combat, the new organization could not function in a high-intensity combat environment without significant augmentation. The SBCT was designed to be self-sufficient for 72 hours – enough time to shape its environment. It possessed a much-reduced logistical footprint, but it exploited digital communications and the tactical Internet to provide an

unprecedented level of situational awareness. The bulk of its combat power lay in infantry battalions. Armor bore responsibility for developing the brigade's communications architecture and the reconnaissance, surveillance and target-acquisition (RSTA) squadron, a cavalry unit whose primary mission lay in gathering information and intelligence. The RSTA squadron proved unique among cavalry organizations. It was not configured to perform traditional security and economy-of-force operations without support.

The wheeled Stryker vehicle made the SBCT distinct from other mounted combat units. It marked a break with the Army's traditional reliance on tracked vehicles. Moreover, the Stryker did not carry the maximum ballistic protection. Its survivability was embedded in the combined-arms nature of the brigade and the latter's ability to secure accurate, timely information on enemy dispositions. The bulk of Stryker vehicles carried infantry, but armor combat developers also worked on the Mobile Gun System (MGS) and a reconnaissance vehicle. The former carried a 105mm gun on a Stryker chassis to support dismounted action. Its unique design, however, delayed the fielding of the first few MGS platforms until 2007. The reconnaissance vehicle possessed a suite of sensors and surveillance equipment to assist information gathering.

Simultaneous with SBCT development, the Army began work on a brigade-size force that could be tailored to fit varied environments and designed to close with and destroy enemy forces. The projected use of unmanned ground and air vehicles, unattended sensors and smart munitions made it possible to envision far fewer personnel simultaneous with improvements in combat effectiveness. The Future Combat System (FCS) constituted the centerpiece of this futuristic BCT. The FCS included 18 different systems all connected through an advanced communications network. Robotic assets and a variety of line-of-sight, non-line-of-sight and beyond-line-of-sight weaponry completed the ensemble of technologies. The FCS intended to package lethality equivalent to or better than that of the Abrams tank with

a reduced logistical support into a platform capable of air deployment.

Armor played a central role in developing FCS. The importance attached to Transformation, however, resulted in increased funding for the SBCT and FCS at the expense of more conventional forces. Planned upgrades to the Abrams and Bradley fleets, for example, were either cancelled or scaled back. This shift in emphasis also narrowed the focus of digitization from the entire fleet of armored vehicles to those organizations in a single corps. In effect, digitized forces would be consolidated in lieu of extending the full range of digital capabilities to all platforms.

## Operation Iraqi Freedom

In 2004, several locations in Iraq considered terrorist strongpoints became the target of major operations by American forces. Fallujah, An Najaf and Sadr City all witnessed significant fighting. In these instances, terrorists sought to use the urban landscape to offset the technological superiority of American troops. The resultant battles occurred at short range amid streets, houses and marketplaces. Terrorists sought to use mosques and holy sites as shields. Such tactics failed when confronted with the intelligent use of combined-arms tactics and aggressive maneuver.

In these battles, the Abrams and CFV team fared well. Tactics were developed to exploit the superior armor protection of both vehicles. Their firepower and survivability made them the weapon of choice to lead attacks into urban areas. They provided effective fire support to the Soldiers charged with clearing individual structures. In locations where artillery and air support could not be employed without significant risk to civilians, Armor was used to provide precision fires.

The proven value of these platforms, even in urban areas, resulted in renewed Army interest. Heavy-force programs began to receive greater attention and funding than they had before the war. Development work on the FCS continued, but its pace slowed as funding shifted to support more

conventional combat vehicles. Upgrade programs previously in danger of cancellation were now restored. Platform modifications based on the Iraq experience resulted, and a canister round for the Abrams main gun entered the theater in 2005.

The Stryker also proved effective in Iraq. It began operations there in late 2003. Its speed and quietness of operation made it ideal for rapid raids on terrorist safe havens at unexpected times. To provide improved protection against RPGs, Strykers in Iraq were fitted with slat armor, which caused the premature detonation of shaped charge projectiles. Mine and suicide-bomber attacks tended to damage rather than destroy the Stryker, enhancing crew survivability.

The humvee, however, proved too vulnerable to terrorist attacks, particularly improvised explosive devices (IEDs). Increased fielding of the uparmored version helped improve survivability of the crew, but the vehicle itself often suffered extensive damage. The Army sought a better-protected vehicle, especially for use in supply convoys, which became frequent insurgent targets. The mine-resistant ambush-protected platforms resulted. These vehicles were fielded in different configurations, but all shared much better ballistic protection and a unique shape that made them less vulnerable to IED attacks. However, these platforms were not intended for tactical operations. Armor sought a more effective scout platform to replace the humvee. In the interim, survivability was improved by integrating the humvee and M3 CFV in the same platoon.

The Army's continued focus on COIN operations and the immediate needs of Soldiers serving overseas led to FCS' cancellation. Although many of the technologies associated with this program continued to evolve, the family of vehicles that constituted its backbone did not. Instead, the senior military leadership sought a new ground-combat vehicle with greater applicability to the types of conflicts in which the Army was already engaged and would likely continue to be into the foreseeable future. This decision underscored the importance of the proven Abrams/BFV team, supplemented

by the Stryker platform.

These vehicles also reinforced armor training efforts intended to ensure that mounted Soldiers retained the ability to execute combined-arms maneuver even as they mastered COIN principles and applied them in Iraq and Afghanistan. This balance found reflection in doctrinal developments and in organizational changes intended to ensure that armor retained its traditional versatility and decisiveness. Army Transformation efforts included the creation of standard BCTs intended either for independent action or as part of a larger formation. These modular organizations made the BCT rather than the division the Army's principal maneuver unit. Armored BCTs included armor and mechanized infantry integrated into combined-arms battalions and supported by a reconnaissance squadron, while infantry and Stryker BCTs provided capabilities suited for light-force requirements. These new brigade elements shaped the nature of training programs and doctrinal developments and helped establish armor's path of future development.

## Now and future

This is a time of significant change in the Armored Force. Not since we traded in our horses for tanks have we made such significant and far-reaching changes to our formations, training and leader development. However, regardless of ongoing changes, the enduring mission sets that have made armor and cavalry forces the "combat arm of decision" will continue to make the Armor Branch an indispensable part of the combined-arms team.

There are key and dynamic areas of change that are impacting the Armored Force: Army Transformation to modular units, restructuring Active Component (AC) and Reserve Component (RC) forces, and establishment of the Maneuver Center of Excellence (MCoE).

**Army transformation to modular units.** The Armored Force is converting from a tank-heavy to a reconnaissance-heavy branch, with the conversion to combined-arms battalions and the inclusion of a reconnaissance squadron in all maneuver brigades. The projected Fiscal Year 2017 endstate is now 15



**Figure 5. Soldiers from 2<sup>nd</sup> Battalion, 5<sup>th</sup> Cavalry Regiment, 1<sup>st</sup> Brigade Combat Team, 1<sup>st</sup> Cavalry Division, scan for threats atop an M1A1 Abrams tank during Exercise Combined Resolve II at the Joint Multinational Readiness Center in Hohenfels, Germany, May 19, 2014. Combined Resolve II is a multinational decisive-action training environment exercise occurring at the Joint Multinational Training Command's Hohenfels and Grafenwoehr training areas that involves more than 4,000 participants from 15 partner nations. The intent of the exercise is to train and prepare a U.S. led multinational brigade to interoperate with multiple partner nations and execute unified land operations against a complex threat while improving the combat readiness of all participants. (U.S. Army photo by SPC Bryan Rankin)**

heavy, 20 infantry and eight Stryker BCTs. In addition, there will be three AC reconnaissance and surveillance brigades.

**AC/RC force mix.** The Army National

Guard (ARNG) is currently undergoing a significant transformation concurrent with the AC. This transformation will result in a significant transition of maneuver formations. The ARNG

## Armor insignia

The original triangular armor insignia was designed in 1918 and was worn by the World War I Tank Corps and subsequent tank units of the infantry. The colors of the shoulder patch were blue for infantry, red for artillery and yellow for cavalry – the three basic components of armor. The insignia symbolized the union of the three forces. The basic design and combination of colors remain in today's armor insignia.

In 1940, the superimposed figures, taken from the shoulder insignia of 7<sup>th</sup> Cavalry Brigade (Mechanized), were added to the triangular design. The tank track stands for mobility and armor protection, the gun represents firepower and the lightning bolt denotes shock effect. These triple characteristics of the tank are embodied in armor's striking power.

The armor shoulder-sleeve insignia was originally approved Oct. 21, 1954. It was redesignated for the Armor School June 26, 1956. The insignia was amended July 16, 1957, to change the wording in the tab's description. On Dec. 3, 1964, the insignia was redesignated for the U.S. Army Armor School. The shoulder-sleeve insignia was amended Nov. 5, 1970, to revise the design to make the insignia and tab one piece.

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



structure will consist of 28 ARNG maneuver brigades. The current proposed mix will be seven heavy, 20 infantry and one Stryker BCT. The transformation has eliminated the “enhanced brigade” concept of the past.

**MCoE.** Based on the 2005 Base Realignment and Closure decision, the Armor School moved to Fort Benning to create the MCoE. This move ensures that we train and develop Soldiers as we fight: as a combined-arms team. Much of the development mission – doctrine, training, organization and materiel systems – will be combined at the MCoE level.

An area that observers have said the United States needs to develop is in our lack of effective short-range, mobile air-defense vehicles to accompany armored units. The United States' reliance on air supremacy is demonstrated in this area, but most other countries accompany their armored forces with highly mobile self-propelled anti-aircraft guns such as the German Gepard or the Soviet 9K22 Tunguska; short- and medium-range surface-to-air missile (SAM) systems such as the SA-6, SA-8 and SA-11; or both on the same vehicle combined (the Tunguska, for example, can also host SA-19 SAM missiles). The usage of anti-aircraft rounds fired from the main gun of a tank has been increasing over the years. An example is the HE-FRAG round from the T-90, which can be detonated at a set distance as determined by its laser rangefinder.

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

## 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](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>.

## Acronym Quick-Scan

**AC** – Active Component  
**ACAV** – Armored Cavalry Assault Vehicle  
**ACR** – armored cavalry regiment  
**AGS** – Armored Gun System  
**ARNG** – Army National Guard  
**BCT** – brigade combat team  
**BFV** – Bradley Fighting Vehicle  
**BMP** – *boyeva mashina pekhoty*  
**CFV** – Cavalry Fighting Vehicle  
**COIN** – counterinsurgency  
**FBCB2** – Force XXI Battle Command Brigade and Below  
**FCS** – Future Combat System  
**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  
**TOW** – tube-launched, optically tracked, wire-guided

# 2015 Marks 2 Important Anniversaries

This year marks the 50<sup>th</sup> anniversary of the Battle of Ia Drang and the 25<sup>th</sup> anniversary of Operation Desert Shield, the precursor to Operation Desert Storm or the First Gulf War.

## Battle of Ia Drang

The Maneuver Center of Excellence commemorated the 50<sup>th</sup> anniversary of the Vietnam War's Battle of the Ia Drang Valley Nov. 23-24. The bloody fights at landing zones (LZs) X-Ray and Albany tested the air cavalry in its infancy. Veterans from 1<sup>st</sup> Battalion, 7<sup>th</sup> Cavalry, and the newly created 2<sup>nd</sup> Battalion, 7<sup>th</sup> Cavalry, were in fierce fire-fights with the North Vietnamese Army (NVA) for the first time in the Vietnam War.

The initial North Vietnamese assault against 1/7 Cavalry's landing at LZ X-Ray was repulsed after two days and nights of heavy fighting Nov. 14-16, 1965. The Americans inflicting major losses on North Vietnamese regulars and Viet Cong guerrillas.<sup>1</sup> In a follow-up surprise attack Nov. 17, the North Vietnamese overran the marching column of 2/7 Cavalry near LZ Albany in the most successful ambush against U.S. forces of the war. Both sides suffered heavy casualties.

The seminal work on Ia Drang remains the 1992 book *We Were Soldiers Once ... And Young* by retired LTG Hal G. Moore and journalist Joseph L. Galloway. Galloway was guest speaker at the commemorative dinner Nov. 24 at the National Infantry Museum, Fort Benning, GA. Galloway is a former United Press International reporter who served 16 months as a war correspondent in Vietnam beginning in April 1965 – shortly after the first American combat troops landed on China Beach in Danang. Galloway returned to Vietnam on three other tours in 1971, 1973 and 1975, when he covered the fall of Cambodia and South Vietnam. On May 1, 1998, the Army belatedly awarded Galloway a Bronze Star with V for rescuing a badly wounded soldier under heavy fire in the Ia Drang Valley

Nov. 15, 1965; this is the only medal of valor the Army awarded to a civilian during the Vietnam War.

## 'Battle that changed everything'

Former leaders from 1/7 and 2/7 Cavalry participated in leadership professional-development sessions at Fort Benning Nov. 24. Leaders from 1/7 included retired COL Ramon "Tony" Nadal, retired CSM Southern "Buddy" Hewitt, retired SFC Clyde "Ernie" Savage, retired COL Walter "Joe" Marm Jr. and retired LTC William Franklin. Leaders from 2/7 who spoke were retired MAJ Joel E. Sugdinis, J.L. "Bud" Alley Jr., James T. Lawrence and S. Lawrence Gwin.

MG Scott Miller, commander of the Maneuver Center of Excellence, spoke to the assembled leaders during the sessions, explaining that the lessons that came out of LZ X-Ray and LZ Albany were timeless. Some leadership points from the sessions follow.

The Battle of Ia Drang has been touted as "the battle that changed everything." For Americans, it was the beginning of a new kind of warfare using helicopters. The battle was also a historical turning point because it changed American involvement from advisers and materiel support to full-scale combat. The battle was also seen as a blueprint for tactics by both sides: the Americans used air mobility, artillery fire and close air support to accomplish battlefield objectives, while the People's Army of Vietnam (PAVN) and Viet Cong forces learned they could neutralize U.S. firepower by quickly engaging American forces at very close range. In fact, North Vietnamese COL Nguyen Huu An included his lessons from the battle at LZ X-Ray in his orders for LZ Albany: "Move inside the column, grab them by the belt, and thus avoid casualties from the artillery and air."

Both sides thought this battle to be a success for them. In fact, Gwin (who

served almost nine months as executive officer for Company A 2/7 Cav – serving under Sugdinis) disputed that the Americans had been beaten at the disastrous encounter at LZ Albany: "We killed more of them than they got us. We got caught with our pants down but recovered enough to kick ass."

The Battle of Ia Drang was also one of the first battles to popularize the U.S. concept of the "body count" as a measure of success. American losses, especially at LZ Albany, were severe.<sup>2</sup>

Galloway later described Ia Drang as "[t]he battle that convinced [North Vietnamese leader] Ho Chi Minh he could win." Moore said, "[The] peasant soldiers [of North Vietnam] had withstood the terrible high-tech firestorm delivered against them by a superpower and had at least fought the Americans to a draw. By their yardstick, a draw against such a powerful opponent was the equivalent of a victory."

With this as the context, the speakers' overall theme was that training saved the day for U.S. Soldiers. The 2/7 speakers emphasized that there were three factors for them as they were ambushed at LZ Albany: bad tactics for the terrain (they were strung out in a line, with the company commanders called away from their units); the terrain itself (the elephant grass cloaked enemy fighters); and 2/7's ragtag nature (Alley said of his unit, "We're not a company, we're a gaggle" and pointed out that 2/7 had never moved as a unit overland). Only training saved the Americans from an even bigger disaster.

**Nadal** – Nadal thought there was one other factor: "The role of the leader in a battle of this intensity [1/7 Cavalry at LZ X-Ray] is essential," he said. He credited Moore with the unit's survival.

Nadal's Vietnam service included command of Detachment A and Camp Nam Dong in the jungles of northwest South Vietnam. Leading a force of 400 South Vietnamese and Nung soldiers, he

conducted patrols along the Laotian border and engaged in ambushes, reconnaissance and an intensive civic-action program. Upon returning from Vietnam, Nadal attended the Armor Officer Career Course and Pathfinder School, then he volunteered to return to Vietnam. Nadal commanded Company A 1/7 Cav and served as S-3 of 2/7 Cav. During his Vietnam tour, Nadal, the only commander with experience in Vietnam, was engaged in heavy infantry combat in the Ia Drang Valley. He received the Silver Star for his actions in the Battle of Ia Drang.

Nadal credited training for Savage's ability to command the "Lost Platoon." "Moore's philosophy was to train two levels down," Nadal recalled, "so when Savage lost his platoon leader and platoon sergeant, he – as an assistant platoon sergeant – was able to assume command."

**Savage** – Savage began the Battle of Ia Drang leading a squad from 2<sup>nd</sup> Platoon, Company B, 1/7 Cav. After the death of his platoon leader and most of his platoon, Savage found himself outnumbered, surrounded and cut off from the rest of his battalion. His swift action and successful leadership of the "Lost Platoon" resulted in many enemy casualties. He demonstrated personal bravery as he called for supporting artillery fire within 50 meters of his location and fought back a number of attacks throughout his platoon's isolation. For his actions that day, he received the Distinguished Service Cross.

Savage reflected on persistent criticism of his platoon leader's actions in pursuing the enemy, becoming separated from the rest of his unit (which created the Lost Platoon). "The lieutenant (LT Henry Herrick) was technically and tactically proficient but did not have experience," Savage recalled. "The lieutenant's mistake was that he did not analyze the consequences of his decision."

Savage said his platoon moved as a well-trained infantry platoon but spotted the enemy moving down a dry creek bed; Herrick pressed forward to intercept them. Herrick's platoon had 27 people, but three did not belong to the platoon: the medic, the artillery forward observer (FO) and the mortar

FO. Savage said that during the exchange of fire, the radio was shot up and jammed open in its frequency. Herrick, the platoon sergeant, the artillery FO and the mortar FO were wounded or dead.

"Artillery saved us from annihilation, but training put us in position to be able to use artillery," Savage declared.

**Marm** – Then-2LT Marm was platoon leader of 2<sup>nd</sup> Platoon, Company A, 1/7 Cav. During the Battle of Ia Drang, he single-handedly attacked an enemy position. When shot in the jaw, he modestly summarized, "That ended my day," but his Medal of Honor (MoH) citation recounts several examples of conspicuous gallantry, some despite being severely wounded. The epitome of a leader, "Marm's selfless actions reduced the fire on his platoon, broke the enemy assault and rallied his unit to continue toward the accomplishment of this mission," according to the MoH citation.

This courageous soldier offered as a leadership point that communication was very important.

**Sugdinis** – As one of the speakers for 2/7 offering lessons-learned about the battle at LZ Albany, Sugdinis criticized his leadership's decision-making that day. Commanding Company A 2/7 during the Battle of Ia Drang, Sugdinis said that when the fighting ended at LZ X-Ray Nov. 16, his unit was ordered to clear out of that LZ, as B-52s were on their way from Guam and there had to be at least two kilometers empty of friendlies around the target area. On



Figure 1. The Chu Pong Massif and Ia Drang.

the way to the next LZ, Sugdinis said 2/7's mission was to check for/recover a downed pilot,<sup>3</sup> then go to LZ Albany. Sugdinis said they didn't have a mission at LZ Albany; they were just told to go. His leadership point here was that Soldiers should ask for more information to ensure they are clear about their mission.

Despite the lack of a clearly defined mission, Sugdinis calmly and effectively maneuvered Company A 2/7 as his company led 2<sup>nd</sup> Battalion in its movement from LZ X-Ray to LZ Albany. As the spearhead, Alpha Company provided security for the battalion command when the rest of the unit was cut off by the North Vietnamese.

Sugdinis also objected to the assertion by Moore and Galloway in their book *We Were Soldiers Once ... and Young* that he had ordered the grass hut burned that likely had alerted the NVA to the Americans' presence. "I did not order that," he declared. "We [my unit]



left the hooch intact.”

As the B-52s were making their bombing runs on the Chu Pong Massif, LT D.P. “Pat” Payne, the reconnaissance-platoon leader, was walking around some termite hills when he came upon a resting North Vietnamese soldier. Payne jumped on the PAVN trooper and took him prisoner. Simultaneously, about 10 yards away, his platoon sergeant captured a second PAVN soldier. As word of these captures reached him, battalion commander LTC Robert McDade ordered a halt as he went forward from the rear of the column to interrogate the prisoners personally, accompanied by his command group. The prisoners were policed up about a hundred yards from the southwestern edge of LZ Albany.

McDade then called his company commanders forward for a conference, most of whom were accompanied by their radio operators, and this is where Sugdinis said McDade erred. Alpha Company (Sugdinis’ company) moved forward to LZ Albany, accompanied by McDade and his command group. Delta Company, which was next in the column following Company A, held in place, as did Charlie Company, which was next in line. Headquarters and Headquarters Company (HHC) followed, and Company A, 1<sup>st</sup> Battalion, 5<sup>th</sup> Cavalry, brought up the rear of the column. The effect was that the American column was halted in open terrain and strung out in 550-yard line of march. Most of the units had flank security posted, but the men were worn out from almost 60 hours without sleep and four hours of marching. The elephant grass was chest high, so visibility was limited. The column’s radios for air or artillery support were with the company commanders. It was at this point the NVA ambushed them.

Sugdinis was also critical of his command’s denial of his request for reconnaissance by fire. “If I was able to still recon by fire [as they approached LZ Albany], this would have caused the enemy to disperse and would have killed many of them,” Sugdinis said. “And the LZ Albany disaster would not have happened.”

**Lawrence** – Promoted shortly before the battle, then-1LT Lawrence served

as the executive officer for Company D 2/7 Cav at the Battle of Ia Drang. He had been the recon-platoon leader 20 days earlier. Wounded during the intense fighting at LZ Albany, Lawrence was awarded a Bronze Star. His book, *Reflections on LZ Albany: The Agony of Vietnam*, is reviewed in this edition of *ARMOR*.

Lawrence’s leadership point was “Trust your gut” – his intuition had told him that the “Green Wall” alongside their corridor of approach to LZ Albany was perilous. The Green Wall referred to an area of small trees and elephant grass. The NVA had allowed the Americans to walk past them as they lay camouflaged in the grass and collapsed on them from all sides as they were strung out in the corridor and into LZ Albany itself. Payne and his sergeant had caught the two NVA soldiers, but three had gotten away and reported to their headquarters – Lawrence believed they were NVA recon. As the Americans were vulnerable, the Green Wall “erupted” with an NVA ambush.

Another leadership point from Lawrence was to perform repetitious training so that actions in combat are automatic. “There’s not *too much* training that goes on in the U.S. Army,” he emphasized.

Lawrence also said that McDade had called ceasefire because he thought his battalion’s Company C was firing on them – he didn’t realize it was NVA – but Lawrence saw NVA coming at him from the Green Wall, so he ignored his battalion commander in battle. Lawrence wryly said he didn’t recommend that, but he said he couldn’t follow McDade’s ceasefire order.

**Alley** – As the platoon leader for HHC’s communications platoon, Alley led his men under fire from North Vietnamese troops at LZ Albany. After being separated from friendly lines, Alley guided a group of mostly wounded soldiers to the artillery position at LZ Columbus. For his valor, Alley received the Silver Star. He is the author of *The Ghosts of the Green Grass*, also reviewed in this edition of *ARMOR*.

Alley emphasized that HHC consisted of all noncombatants at that time and that 2/7 Cav was the “oh shucks battalion.” “We were a green, green unit; we

had not trained together; we didn’t know each other,” Alley said.

A battalion of 500 had shrunk to 300 Soldiers by November 1965, as it was the monsoon season in Vietnam and troops were getting malaria and trenchfoot. Many of the lieutenants were beginning to get sick. By the end of October 1965, 2/7 had a new battalion commander; new S-3, S-2 and S-4 officers; plus two new company commanders.

As much as 2/7 Cav had a leadership vacuum, Alley saw a strong leader at 1/7 Cav. He said that after the battle for LZ X-Ray, reporters came to see Moore. “This stern, stoic man, a man of men, teared up when talking about the heroism of his Soldiers,” Alley said. “This taught me that you can love your men.”

As far as his own part in leading wounded soldiers to safety and escaping LZ Albany, Alley said he crawled all the way to LZ Columbus. Since he and the wounded men with him were outside the perimeter, he feared being shot by friendly fire. “This was the longest night of my life,” Alley said.

**Gwin** – Another author among the group, Gwin demonstrated valor in personally closing with and killing enemy soldiers during the harrowing events at Ia Drang. As the executive officer of Company A 2/7 Cav, he personally repelled a number of attacks on the company’s command group once he arrived at LZ Albany. He was awarded the Silver Star for his valor at Ia Drang. He chronicled his experiences in *Baptism: A Vietnam Memoir*.

As Sugdinis summarized, the battle intensity was such that the most Purple Hearts were awarded for this “one day, one battle”: 250 Purple Hearts.

## Operation Desert Shield/Storm

Operation Desert Shield began after the Iraqi army occupied the small oil-rich country of Kuwait Aug. 2, 1990. Kuwait appealed to the international community for help. President George H.W. Bush deployed U.S. forces into Saudi Arabia and urged other countries to send their own forces; an array of nations joined the coalition, the

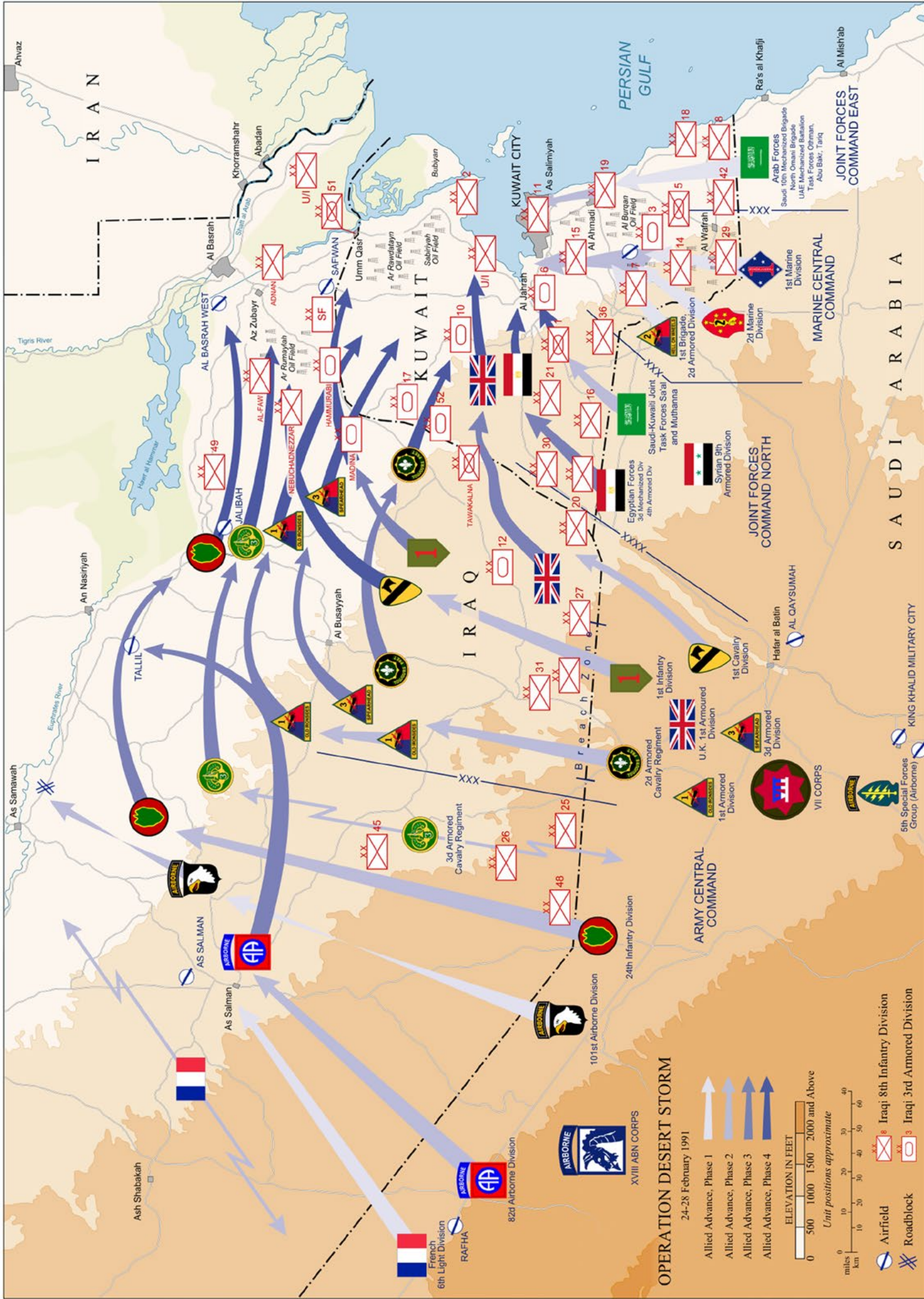


Figure 2. Map of Operation Desert Storm ground operations Feb. 24-28, 1991. Shows allied and Iraqi forces. Special arrows indicate the American 101st Airborne Division moved by air and where the French 6th Light Division and American 3rd Armored Cavalry Regiment provided security. (Map by Jeff Dahl; used under license)

largest military alliance since World War II. Most of the coalition's military forces were from the United States, with Saudi Arabia, the United Kingdom and Egypt as other leading contributors.

An aerial and naval bombardment began Jan. 17, 1991, continuing for five weeks. This was followed by a ground assault Feb. 24. This was a decisive victory for coalition forces, who drove the Iraqi military from Kuwait and advanced into Iraqi territory. The coalition ceased its advance and declared a ceasefire 100 hours after the ground campaign started. Aerial and ground combat was confined to Iraq, Kuwait and areas on Saudi Arabia's border.

To be clear, *Operation Desert Shield* was the U.S. operational name for the coalition buildup of forces and Saudi Arabia's defense from Aug. 2, 1990, to Jan. 16, 1991. *Operation Desert Storm* was the U.S. name of the conflict from Jan. 17, 1991, through April 11, 1991. *Operation Provide Comfort* was the name for the Southwest Asia ceasefire April 12, 1991, and follow-on actions through Nov. 30, 1995.

After diplomatic negotiations with Saddam Hussein failed, the United Nations Security Council passed Resolution 678 Nov. 29, 1990, which gave Iraq until Jan. 15, 1991, to withdraw from Kuwait and empowered states to use "all necessary means" to force Iraq out of Kuwait after the deadline. A coalition of forces opposing Iraq's aggression was formed, consisting of forces from Argentina, Australia, Bahrain, Bangladesh, Belgium, Canada, Denmark, Egypt, France, Greece, Italy, Kuwait, Morocco, Netherlands, New Zealand, Niger, Norway, Oman, Pakistan, Portugal, Qatar, South Korea, Saudi Arabia, Senegal, Sierra Leone, Singapore, Spain, Syria, the United Arab Emirates, the United Kingdom and the United States.

Although they did not contribute any forces, Japan and Germany made financial contributions totaling \$10 billion and \$6.6 billion respectively. U.S. troops represented 73 percent of the coalition's 956,600 troops in Iraq.

After the air campaign, which was dubbed "Shock and Awe" by U.S. leaders and the news media, the main

ground offensive began. Several tank battles took place, but apart from that, coalition troops encountered minimal resistance, as most Iraqi troops surrendered. First Kuwait was liberated, then coalition troops moved into Iraq. The war's ground phase was officially designated Operation Desert Saber.

Elements of 2<sup>nd</sup> Brigade, 1<sup>st</sup> Battalion, 5<sup>th</sup> Cavalry, 1<sup>st</sup> Cavalry Division, directly attacked into Iraq Feb. 15, 1991, followed by in-force attacks Feb. 20 that led through seven Iraqi divisions caught off guard. From Feb. 15-20, the Battle of Wadi Al-Batin took place inside Iraq; this was the first of two attacks by 1<sup>st</sup> Battalion, 5<sup>th</sup> Cavalry. It was a feint attack, designed to make the Iraqis think that a coalition invasion would take place from the south. The Iraqis fiercely resisted, and the Americans eventually withdrew as planned back into the Wadi Al-Batin. Three U.S. soldiers were killed and nine wounded, with one M2 Bradley Infantry Fighting Vehicle turret destroyed – but they had taken 40 prisoners and destroyed five tanks, and successfully deceived the Iraqis. This attack led the way for the XVIII Airborne Corps to sweep around behind 1<sup>st</sup> Cav and attack Iraqi forces to the west.

On Feb. 22, 1991, Iraq agreed to a Soviet-proposed ceasefire agreement. The agreement called for Iraq to withdraw troops to pre-invasion positions within six weeks following a total ceasefire, and for monitoring of the ceasefire and withdrawal to be overseen by the United Nations Security Council.

The coalition rejected the proposal, but said that retreating Iraqi forces wouldn't be attacked and gave 24 hours for Iraq to begin withdrawing forces. On Feb. 23, fighting resulted in the capture of 500 Iraqi soldiers. On Feb. 24, British and American armored forces crossed the Iraq-Kuwait border and entered Iraq in large numbers, taking hundreds of prisoners. Iraqi resistance was light; only four Americans were killed.

Shortly afterward, the U.S. VII Corps, in full strength and spearheaded by 2<sup>nd</sup> Armored Cavalry Regiment (ACR), launched an armored attack into Iraq early Feb. 24, just to the west of

Kuwait. It took Iraqi forces by surprise. Simultaneously, the U.S. XVIII Airborne Corps launched a sweeping "left-hook" attack across southern Iraq's largely undefended desert, led by U.S. 3<sup>rd</sup> ACR and 24<sup>th</sup> Infantry Division (Mechanized).

## Battle of 73 Easting

An example of the speed and surprise U.S. armored forces brought to the battlefield was exemplified by the Battle of 73 Easting. On Feb. 26, 1991, U.S. armored forces from VII Corps squared off vs. the Iraqi Republican Guard's Tawakalna Division's 18<sup>th</sup> Mechanized Brigade and 37<sup>th</sup> Armored Brigade. The battle was later described in a documentary of the battle as "the last great tank battle of the 20<sup>th</sup> Century."

The Battle of 73 Easting refers to the armored-combat action that took place in the final hours of 2<sup>nd</sup> ACR's covering-force operation. During the battle, four of 2<sup>nd</sup> ACR's armored-cavalry troops – Troops E, G and I, with Troop K contributing to Troop I's fight (totaling about 36 M1A1 tanks) – defeated two enemy brigades. (An "easting" is a north-south coordinate line measured in kilometers and readable on Global Positioning System receivers.)

On the one hand was 2<sup>nd</sup> ACR, a 4,500 man reconnaissance and security element assigned to VII Corps. It consisted of three ground squadrons, an aviation (attack helicopter) squadron and a support squadron. Each ground squadron was made up of three cavalry troops, a tank company, a self-propelled howitzer battery and a headquarters troop. Each troop comprised 120 soldiers, 12-13 M3 Bradley Fighting Vehicles and nine M1A1 Abrams main battle tanks. The 2<sup>nd</sup> ACR's three squadrons consisted of about 4,000 soldiers.

Opposing them were the two Iraqi brigades, each consisting of between 2,500 to 3,000 soldiers.

The 2<sup>nd</sup> ACR's job was to advance east as a forward scouting element, led by cavalry scouts in M2A3 Bradleys equipped with highly advanced thermals to detect enemy positions. Following closely behind were M1A1 Abrams tanks covering them from the

rear, ready at a moment's notice to move forward and engage the enemy. The 2<sup>nd</sup> ACR's mission was to strip away enemy security forces, clear the way of significant defenses and locate the Republican Guard's defensive positions so they could be engaged by 1<sup>st</sup> Infantry Division armored forces and artillery.

On the night of Feb. 23-24, 1991, as described previously, VII Corps raced east from Saudi Arabia into Iraq in a maneuver later nicknamed the "Hail Mary." The corps had two goals: cut off Iraqi retreat from Kuwait, and destroy five Republican Guard divisions near the Iraq-Kuwait border that might attack Arab and Marine units moving into Kuwait to the south. Initial Iraqi resistance was light and scattered, and 2<sup>nd</sup> ACR fought only minor engagements until Feb. 25.

However, moving through the Republican Guards' security area along 70 Easting the morning of Feb. 26, 2<sup>nd</sup> ACR encountered Iraq's heavily armored Tawakalna Division in the north and 12<sup>th</sup> Iraqi Armored Division in the center and south. All Iraqi units occupied well-constructed defensive emplacements and had prepared alternate positions that enabled them to reorient to the west to face VII Corps' attack. Despite extensive aerial and artillery bombardment by U.S. forces, most defending Iraqi units remained effective. Sandstorms slowed 2<sup>nd</sup> ACR's movement throughout the day, restricting visibility to as little as 400 meters (1,300 feet).

Near the east-west coordinate line 00 Northing, 2<sup>nd</sup> ACR's Eagle Troop received fire from an Iraqi dismounted outpost, a dug-in Iraqi ZSU-23-4 and several occupied buildings in an Iraqi village. The American scouts returned fire with their tanks and Bradleys, silenced the Iraqi guns, took prisoners and continued east three more kilometers. More enemy fire came in and was immediately returned.

*(Editor's note: Eagle Troop's actions at 73 Easting are the subject of a book review in this edition of **ARMOR: Fires of Babylon** by Mike Guardia. The perspective of Eagle Troop's commander, then-CPT H.R. McMaster, is available in an e-paper, "Battle of 73 Easting," posted to Donovan Research Library's collec-*

*tion, [http://www.benning.army.mil/Library/content/McMasterHR%20CPT\\_Battleof73Easting.pdf](http://www.benning.army.mil/Library/content/McMasterHR%20CPT_Battleof73Easting.pdf).)*

The operation escalated into a full-out battle as Eagle Troop maneuvered to 70 Easting. Heavy combat then spread to the south as Troop I closed the gap between the two squadrons and joined the fight. Troop G's attack to the north of Troop E made contact with defending units farther east, and combat there became intense. Fighting continued into darkness as the Iraqi division commander reinforced 18<sup>th</sup> Brigade with his 9<sup>th</sup> Armored Brigade in the Troop G zone.

The 12 M1A1 tanks of Eagle Troop destroyed 28 Iraqi tanks, 16 personnel carriers and 30 trucks in 23 minutes with no American losses. Then Eagle Troop crested a low rise and surprised an Iraqi tank company set up in a reverse slope defense. The Iraqi troops mounted the first determined defense 2<sup>nd</sup> ACR had encountered in its three days of operations, but they were destroyed by the better-trained and better-equipped American troops.

The Battle of 73 Easting and the movement-to-contact south of the battle brought 2<sup>nd</sup> ACR's covering-force mission for VII Corps to its conclusion. During the operation, 2<sup>nd</sup> ACR covered the advance of three U.S. divisions in turn, moved 120 miles in 82 hours and fought elements of five Iraqi divisions. The Battle of 73 Easting fixed the southern forces of the Iraqi Republican Guard Corps and permitted the VII Corps commander to launch 1<sup>st</sup> Infantry Division into the depths of the Iraqi defenses and on into Kuwait.

The 2<sup>nd</sup> ACR, which advanced between the Iraqi 12<sup>th</sup> Armored Division and the Tawakalna Division, was the only American ground unit to find itself significantly outnumbered and outgunned. Nonetheless, 2<sup>nd</sup> ACR's three squadrons, along with 1<sup>st</sup> Infantry Division's two leading brigades, destroyed two Iraqi brigades. In moving to and through the Battle of 73 Easting, 2<sup>nd</sup> ACR and 1<sup>st</sup> Infantry Division's lead brigades destroyed 160 tanks, 180 personnel carriers, 12 artillery pieces and more than 80 wheeled vehicles – along with several anti-aircraft artillery systems – during

the battle. The equivalent of an Iraqi brigade was destroyed at 73 Easting; it was the first ground defeat of the Republican Guard. Within 24 hours, most of the other Iraqi brigades were gone.

The coalition's advance was much swifter than U.S. generals had expected. On Feb. 26, Iraqi troops began retreating from Kuwait after they had set its oil fields on fire (737 oil wells were set on fire). American, British and French forces continued to pursue retreating Iraqi forces over the border and back into Iraq, eventually moving to within 150 miles of Baghdad before withdrawing back to Iraq's border with Kuwait and Saudi Arabia.

One hundred hours after the ground campaign started, on Feb. 28, Bush declared a ceasefire, and he also declared that Kuwait had been liberated.

On March 10, 1991, 540,000 U.S. troops began moving out of the Persian Gulf.

## Notes

<sup>1</sup> "Viet Cong" was what Western sources called the National Liberation Front, the political organization of the People's Liberation Armed Forces of South Vietnam that fought the United States and South Vietnamese governments during the war.

<sup>2</sup> U.S. estimates of American deaths at LZ X-Ray were 79 killed and 121 wounded; LZ Albany: 155 killed, 124 wounded and four missing; LZ Columbus: three killed and 13 wounded; four helicopters shot down, 55 damaged. The NVA claimed that U.S. casualties totaled somewhere between 1,500 to 1,700 soldiers killed. On the other side of the body-count "ledger," the United States reported the bodies of 634 NVA soldiers were found in the vicinity of LZ X-Ray and estimated that 1,215 NVA were killed a distance away by artillery and airstrikes. Six North Vietnamese soldiers were captured. Six PAVN crew-served weapons and 135 individual weapons were captured, and an estimated 75-100 weapons were destroyed. For LZ Albany, between 403 (body count) and 503 NVA soldiers were killed, and at LZ Columbus, at least 27 NVA soldiers were killed. North Vietnamese figures for their own casualties were 559 killed and 669 wounded. Both sides' estimates of their opponent's casualties are likely inflated. Galloway thought the battle at LZ X-Ray claimed 80 men dead and 124 wounded, "many of them terribly," and that the

death toll for the entire battle was 234 Americans killed and perhaps as many as 2,000 North Vietnamese soldiers.

<sup>3</sup> Sugdinis' unit found the downed

helicopter but the canopy was open and they did not find the pilot. He said the pilot's remains are unrecovered to this day.

## Acronym Quick-Scan

**ACR** – armored-cavalry regiment

**FO** – forward observer

**HHC** – headquarters and headquarters company

**LZ** – landing zone

**MoH** – Medal of Honor

**NVA** – North Vietnamese Army

**PAVN** – People's Army of Vietnam

For more resources on Operation Desert Shield / Storm, see the Donovan Research Library Website, under "Digital Collections, Battles and Engagements after 1980, Student Paper Collection" and the archives of **ARMOR** magazine from 1990-2015.

# Chief of Armor's Solicitation for Doctrinal Feedback

The Maneuver Center of Excellence's Directorate of Training and Doctrine (DOTD) had a busy 2015! To meet the demands of the environment outlined in the Army Operating Concept, we must review and update our doctrine regularly. Doing so will provide the framework on how the maneuver force prevents conflict, shapes security environments and wins wars while operating as part of the joint force and working with multiple partners.

This year, DOTD published the following:

- Field Manual (FM) 3-96, **Brigade Combat Team**;
- FM 3-98, **Reconnaissance and Security Operations**;
- Training Circular (TC) 3-20.0,

**Integrated Weapons Training Strategy**, June 2015;

- TC 3-20.31, **Training and Qualification, Crew**, March 2015;
- TC 3-20.31-1, **Gunnery Skills Test**, November 2015; and
- TC 3-20.31-4, **Direct Fire Engagement Process**, July 2015.

Doctrine is the foundational launch point from which units can design, build, develop and innovate the ways in which they conquer a constantly changing and unknowable environment. I am certain that each of you as leaders have taken an active role in reviewing this year's publications and have formed opinions, both positive and negative. I encourage everyone to share these opinions on the Armor

School milBook site with the community so we collectively have the ability to shape the next iteration.

**BG Scott McKean**

Chief of Armor/Commandant

U.S. Army Armor School

Armor School milBook: ([www.milsuite.mil/book/Armored\\_Force](http://www.milsuite.mil/book/Armored_Force))

Armor School Facebook: ([www.facebook.com/usaarms](http://www.facebook.com/usaarms))

## Acronym Quick-Scan

**DOTD** – Directorate of Training and Doctrine  
**FM** – field manual  
**TC** – training circular

# REVIEWS

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**Reflections On LZ Albany** by James T. Lawrence, Marietta, GA: Deeds Publishing, 2014, 187 pages with photographs, maps and appendix, \$19.95.

**The Ghosts of the Green Grass** by J.L. "Bud" Alley, Signal Mountain, TN: Codi Publishing LLC, 2015, 394 pages with photographs, maps and appendix, \$29.99.

The dictionary defines fear as "a feeling of alarm or disquiet caused by the expectation of danger, pain, disaster or the like." How men master their fear is the focus of two recent publications on the often-overlooked November 1965 engagements at Landing Zone (LZ) Albany. Written by participants, both books explore the battle from different perspectives.

The action at LZ Albany came about as a subset of the larger Battle of the Ia Drang. Fought over a four-day period in November 1965, it was the first combat action involving Americans from the newly arrived 1<sup>st</sup> Cavalry Division and the People's Army of Vietnam (PAVN).

The initial PAVN assault against 1<sup>st</sup> Battalion, 7<sup>th</sup> Cavalry, on LZ X-Ray took place Nov. 14-16, 1965. Under the command of then-LTC Hal Moore, the Americans inflicted heavy losses upon the PAVN. Following the action, the division inserted 2<sup>nd</sup> Battalion, 5<sup>th</sup> Cavalry, along with 2<sup>nd</sup> Battalion, 7<sup>th</sup> Cavalry, into the area.

Both books concern themselves with the actions of 2<sup>nd</sup> Battalion, 7<sup>th</sup> Cavalry, as they moved from LZ X-Ray to LZ Albany for extraction.

James T. Lawrence is the former reconnaissance-platoon leader and executive officer of Delta Company, 2<sup>nd</sup> Battalion, 7<sup>th</sup> Cavalry. His moving account of his Vietnam experience with the battalion during their action on LZ Albany is not so much a battle narrative as a reflection on overcoming personal fear in the midst of the chaos of close combat. He begins his work with an

observation on his encounter with a hotel clerk and waiter upon his return from Vietnam: "And for the first time, the young ex-officer realized that the people back home, with the exception of family and close friends, had no idea what was going on in Southeast Asia, and could care even less." Lawrence takes this phenomenon and writes an amazing narrative about fear, sacrifice and pain. Writing in the third person, he relates that "for the first time, the young lieutenant felt fear, the fear of combat, the fear of death; the fear that he had trained to overcome in Airborne School, in Ranger School, and had thought about a hundred times on the ship coming over and back at base camp; but he had no warning and no idea, no idea whatsoever that this fear would be so all-consuming, that its hold would be so paralyzing, so relentless, so unyielding." These are powerful statements on the thoughts that flash through the minds of people caught in the sudden rush of combat. His writing will cause many to reflect on their own experiences in combat.

Complementing Lawrence's work is that of J.L. "Bud" Alley. Alley approaches the battle from a different perspective. An infantry officer, Alley was the battalion communications-platoon leader. As such, he writes about the action from the perspective of the battalion command group. He begins his narrative as the 2<sup>nd</sup> Infantry Division transmutes into the airmobile 1<sup>st</sup> Cavalry Division.

Alley describes the organized chaos of moving the division from Fort Benning, GA, to Vietnam in exacting detail. Along with tactical employment aspects, the author weaves into the narrative commentaries on housing, pay, staff actions, family life and preparing for the emotional trauma of departing for combat.

Once in Vietnam, the narrative gains momentum as Alley notes, "You cannot imagine dark until you are ten thousand miles from home in a jungle, the likes of which you have never seen before, in enemy territory, where people will kill you if they find you. Throw

in a little rain, noise and wet feet, and staying in one position for hours and you might be able to fathom dark."

His detailed description continues as he takes us on the journey from LZ X-Ray to LZ Albany. The PAVN lie in wait for them after "some bright person" burns some huts along the line of march. Capturing two prisoners, LTC Robert McDade – in command for the past three weeks – called his company commanders together to discuss further moves. The PAVN forces chose this moment to attack the troops, many of whom were low on or out of water and bone-tired in the heat.

Recalls Alley: "I had no idea what to do now, but I wasn't ready to lie down and die. Slumped into the ditch, wounded [PVT] Jimmy Harrison asked me, 'Sir, will you get us out of here?'" How they eventually survive the ambush forms the heart of this spellbinding portion of the narrative.

It would be a simple matter to relate that with the battle over, the wounded were evacuated, the dead mourned and the survivors left with their memories. However, both Lawrence and Alley provide us a sensitive discussion on the notification process, the reuniting with loved ones and the deep respect they have for their fallen comrades.

These are two well-designed and superbly written narratives on the Vietnam War.

The books, however, are not without shortfalls. In both works, there is an attempt to parallel the actions of 2<sup>nd</sup> Battalion with the battle of Little Big Horn. At times, this is a tenuous linkage that distracts from the narrative. Also, Alley's work suffers from unnecessary minutiae. For example, we are given a detailed description of his hitchhiking from Columbus, GA, to his home; a detailed explanation on the use of a forklift to load supplies; and a tedious recounting of shipboard life enroute to Vietnam. This type of data detracted from the overall narrative. However, once Alley begins his battle narrative, the pace of the story gains a

momentum that last until the final pages of the book.

These are two fine works on men in combat. As such, they are a noteworthy addition to our appreciation of how a valiant group of men overcame fear during combat operations in Vietnam.

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

## Acronym Quick-Scan

**LZ** – landing zone  
**PAVN** – People's Army of Vietnam

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***The Russian Army in the Great War: The Eastern Front, 1914-1917*** by David R. Stone, Lawrence, KS: University Press of Kansas, 2015, 359 pages with maps, notes, index and photographs, \$34.95 hardcover.

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The popular image of World War I is lethal stagnation: hundreds of miles of continuous trenchworks, where gains are measured in yards and casualties in thousands. Tanks are only introduced late in the war to break through the interlocking fields of machinegun fire and provide an opportunity for maneuver. This is an accurate portrayal of the war in Western Europe. But World War I was also fought in the Alps, in Southern Africa and on the Arabian Peninsula, where maneuver was decisive. Maneuver also dominated Eastern Europe where the German and Austro-Hungarian Empires battled the Russian Empire, and hundreds of miles of territory changed hands in days or weeks. Tanks were not a factor, but fast-moving horse cavalry played a dominant role.

David R. Stone, a rising Russian/Soviet historian, has produced a remarkable work on a little-studied and less-understood theater of a global war. Using Russian archives, Dr. Stone has produced a clear, concise portrayal of Russian participation in World War I – a fight that destroyed the Russian and Austro-Hungarian Empires and

strongly factored in the destruction of the German Empire. The Soviet Union rose from the ashes of the Russian Empire and factored heavily in the political and military interests of Europe and the United States for 70 years. Now, Russia is again a major political and military interest of Europe and the United States. Lessons leap from the pages of this book on Russia's ability to endure, Russia's bond with fellow Slavic peoples, Russia's ability to mobilize the economy to outproduce more advanced industrial powers.

The first key point I take from the book is that Russia was too faithful an ally. If France was in a jam, Russia would launch a diversionary offensive, regardless of whether or not the Russia army was in a position to do so at that time. The second key point is that Russia would launch an offensive when a deliberate fighting withdrawal made much more operational sense.

Following the collapse of the Russian Empire, the land was torn by a violent civil war, where maneuver dominated the fight. Horse cavalry, armored trains and foot-weary infantry fought across this vast open land. The experiences of World War I and the Civil War greatly influenced the doctrine debates of the 1930s, where the offensive deep battle doctrine of Marshal Mikhail Tukachevskiy finally dominated. It influenced the early love affair of the Soviet army with the tank and the melding of artillery and maneuver power into an operational force that eventually crushed the Third Reich.

The writing and research are first rate. The maps are not. Unfortunately, there are too few maps, and they are printed on a dark grey background, making it very difficult to see the rivers, the towns and the whereabouts of the Russian army. The seas are in white and easy to find, but nothing is going on there. Unless the reader has a 120-watt bulb in the bedside lamp, reading the maps is a chore. I solved this problem by keeping a good detailed atlas beside the bed, but that is not an option during air travel.

Three cheers to Dr. Stone for a usable history. I strongly recommend this book to students of military history, officials dealing with Russia and Central

Europe, and regional scholars.

**DR. LESTER W. GRAU**  
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***The Fires of Babylon*** by Mike Guardia, Havertown, PA: Casemate Publishers, 2015, 248 pages with photographs, \$32.95 hardcover.

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***The Fires of Babylon*** focuses on Eagle Troop's encounter with the Tawakalna Brigade of Iraq's Republican Guard during the Battle of 73 Easting Feb. 26, 1991. Commanded by then-CPT H.R. McMaster, Eagle Troop, 2<sup>nd</sup> Armored Cavalry Regiment, was the lead element of VII Corps' advance into Iraq during Operation Desert Storm. Eagle Troop's mission was to "find and fix the Republican Guard" as the ground phase of Operation Desert Storm began.

Tankers may remember that the mighty M1A1 Abrams main battle tank had not been combat-tested after coming on-line in the 1980s, nor had the Soviet Union's T-72, and the Cold War between the superpowers had waned by 1990. As Iraqi dictator Saddam Hussein fielded Soviet-built T-72s in his invasion of Kuwait Aug. 2, 1990, the tiny emirate collapsed. Saddam Hussein massed his forces along the Saudi Arabian border and dared the world to stop him from next invading the Kingdom of Saud. In response, the United States led the world community in a coalition of nations to eject the Iraqis from Kuwait.

There was apprehension: the Iraqi army, after its long war with Iran, had more combat experience than the U.S. Army. Could the coalition beat the world's fourth-largest army on its home ground?

Guardia sets the scene thus: "The Iraqi version of the T-72 tank, known as 'The Lion of Babylon,' had a 120mm main gun that could destroy targets at more than 2,000 meters. Weighing in at [41] tons and covered in armor up to [12] inches thick, the Iraqi T-72 could reach speeds in excess of [40] miles per hour. Despite the aggressive air campaign,



Saddam still had more than 1,000 of these tanks sitting combat-ready along the Iraqi defensive lines. These T-72s were supported by hundreds of lighter armored vehicles, including the Soviet-made BMP.

“Headed straight for them was VII Corps, with more than 1,000 of their own tanks and hundreds of Bradley Fighting Vehicles. Their M1 Abrams tanks were more than [30] tons heavier than the T-72, but just as fast, and with better armor protection. By sunrise on the morning of [Feb. 26, 1991], these two opposing forces lay only nine miles apart.”

As Eagle Troop took the lead for [2<sup>nd</sup> ACR], “waiting for them were [39] tanks [T-72s and T-55s], [14] BMPs and [40] assorted other armored vehicles and trucks, together with [200] infantrymen sitting in the defense,” recalled Douglas Macgregor, then the squadron S-3.

*Fires* is a day-by-day account of Eagle Troop’s breakthrough of the Iraqi lines. The 12 American tanks – which by any calculation didn’t stand a chance – destroyed more than 50 enemy vehicles within 23 minutes and plowed a hole through the Iraqi front. America’s armored force more than proved itself able to overcome the T-72. Guardia characterizes the Battle of 73 Easting as “the largest tank battle in American history and [it] has since been regarded as ‘the last great tank battle of the [20<sup>th</sup> Century].’”

Frankly, the Iraqis couldn’t fire accurately, and after a number of American kills, “[a]t this point in the battle, most of the Iraqis were confused,” Guardia

writes. “The explosions around them were happening so quickly that the Iraqis thought they were under attack from American aircraft. Yet, by the time they realized what was happening, it was too late – the speed and rapid fire of the oncoming tanks had overwhelmed them. The enemy simply couldn’t believe that a heavy armored force could close on them so quickly.” Within a minute of the opening shot, Eagle Troop had killed seven enemy tanks. The Iraqis panicked; “most of what remained were scattered dismounts, running helter-skelter trying to get a handle on the American juggernaut.” In a matter of minutes, Eagle Troop’s nine tanks had eliminated all 39 tanks defending the Tawakalna Division’s sector.

“The Iraqis had set up a pretty sound defense,” McMaster recalled. “It had a reserve; it had a counter-attack planned; it had a minefield to disrupt our movement. But the fatal flaw was that we gained surprise over them.”

At around midnight Feb. 27, 1991, 2<sup>nd</sup> ACR passed the battle on to 1<sup>st</sup> Infantry Division. The Big Red One passed through 2<sup>nd</sup> ACR’s lines to destroy what remained of the enemy’s defenses farther east.

This book is not a sweeping, through-a-general’s-eyes book on strategy. Perhaps retired GEN Fred Franks captures *Fires*’ value best in his foreword: “Impeccably researched by interviewing those who were there in E Troop, and setting the actions in the context of the [2<sup>nd</sup> Squadron] (and indeed of the 2<sup>nd</sup> Armored Cavalry Regiment and VII Corps), [Guardia] captures the deadly

serious tone of the close-combat arena plus the often frustrating but good-humored accounts and the intense devotion the troopers had for each other and their troop commander, then-CPT H.R. McMaster. He captures the family dimension as well.”

“We surprised the enemy on [Feb. 26],” McMaster summarized. “That surprise and the bold action and teamwork of the troop’s soldiers contributed to the rout that is now known as the Battle of 73 Easting. In general, the Iraqis were unprepared for the [U.S.] Army. Americans are better trained and better equipped. The true decisive factor, however, was the American soldier. He is the best at what he does and absolutely dedicated to serving his country. Our soldiers were aggressive in battle yet demonstrated great discipline and compassion for their enemy.”

Since the book portrays individual men at war, those who want to get right into the tank action may find the personal vignettes at the book’s beginning a bit slowing, and that is the book’s greatest flaw (if “flaw” is what it can be called). A side note that should be of interest is Chris Hedenskog’s unsettling description of the rapid culture change in West Germany when the East/West German border fell and Americans on border duty were confronted by angry West German mobs – it is an aspect of the Cold War of which many are unaware.

Overall, this book is a solid contributor to the lore on Operation Desert Storm.

LISA ALLEY

Supervisory editor, *ARMOR* magazine

# LETTERS

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Dear **ARMOR**,

The Russians are in Syria, committing their forces to back up Bashar al-Assad. America and the West recoils in protest at this support for an odious tyrant, without whose departure they see no hope of an end to the bloody Syrian civil war. Putin takes the opposite view, seeing Assad as the only long-term hope for peace and stability. The question of who is right comes down, in the end, to a matter of psychology.

The popular Western view is that people everywhere are, at the most basic level, the same. Everyone wants freedom, democracy and the rule of law. Thus, if a country is ruled by a brutal dictator, which Assad certainly is, his regime reflects his behavior and that of his henchmen. Logically speaking, therefore, if you remove the dictatorship and provide a level of education and training, the result should be a peaceful democracy. This is why the West so enthusiastically supported the Arab Spring. It is also, of course, a large part of what drove the invasion of Iraq.

Then there is the other view, which sees people in different parts of the world as fundamentally different. Not that everyone in each nation has the same disposition, of course, but that the prevailing temperament varies

greatly from area to area. What this view implies, very crucially, is that governments reflect the prevailing temperament of the people and not vice versa.

Thus if people readily accept and respect democratic, humane governments, governments tend to be democratic and humane. If, on the other hand, they obey only brutal and authoritarian rulers, rulers tend to be brutal and authoritarian. In this view if you remove a tyrant, then the result is likely to be not a peaceful democracy, but a new and equally brutal dictator, or anarchy.

Recent scientific studies support this last position in that they show liberals and conservatives to have deep-seated emotional differences with physiological roots. For example, conservatives tend to have a larger amygdala, a portion of the brain involved with emotion and threat. These differences in turn seem to be epigenetic in origin, epigenetics being the new science showing how the activity of genes is affected by our early life experiences – and even those of our ancestors.

The West believes that “moderate” insurgents can defeat ISIS and Assad and bring peace and democracy, if only backed by enough firepower. This flies

in the face of experience that the only “moderate” forces to do much against ISIS are the Kurds. Thus, in practice, we are teaming up with unsavory groups such as Al-Qaeda affiliates.

In Putin’s view, the invasion of Iraq and Western support for the Arab Spring has undermined brutal but stable governments and brought chaos and bloodshed. It can hardly be denied that the suffering of the Syrian people during the civil war is incomparably worse than anything suffered under the Assad regime.

The same can be said of the situation in Iraq and Libya and elsewhere. Putin believes the only real solution is a regime brutal enough to maintain order, and yet not a threat to anyone else. Assad’s regime is about the best on offer.

Science suggests that he is very likely right.

**DR. JIM PENMAN**

*(Editor’s note: Penman is joint director of a research program into the physiology behind human social behavior. Maneuver leaders may be interested in his book, **Biohistory: Decline and Fall of the West**, published by Cambridge Scholars. Penman’s degrees are in history: bachelor’s of arts degree from LaTrobe University, Melbourne, and doctorate, also from LaTrobe.)*

# 68TH ARMOR REGIMENT



The colors, blue and white, associate the organization with infantry. The lion symbolizes the power of a tank regiment. The motto translates to "With Great Speed." The distinctive unit insignia was originally approved for 68th Infantry Regiment March 23, 1937. It was redesignated for 68th Armored Regiment Sept. 18, 1942. It was redesignated for 68th Tank Battalion Nov. 22, 1943. The insignia was redesignated for 68th Medium Tank Battalion Aug. 29, 1952. It was redesignated for 68th Armor Regiment Nov. 15, 1957. It was amended to update the description Nov. 17, 2010.

