Field Artillery

Professional Bulletin

2022, Issue 2

Headquarters, Department of the Army. PB 6-22-2

Contents

3 Farewell to Brigadier General Andrew D. Preston
By Jamie Southerland

5 From the desk of the CSM
By CSM Michael J. McMurdy

6 The Tip of the Spear: Recruiting and Retaining for the Field Artillery school-house: Why the best Field Artillery officers belong in front of a classroom
By CPT Zak Lankford and MAJ Kate Lungmus

12 Leading with high explosives: the Patriot Brigade's record-setting JRTC rotation
By LTC Jonathan T. Holm and Contributing Editor, Dr. Thomas E. Ward II, U.S. Army (Ret.)

18 Shaping Deep to Combine Arms in the Close: Intelligence Support to Targeting in the Brigade Combat Team
By MAJ Christian Garner, CW2 Christian Wanamaker, and WO1 Mario Wright

22 Managing Theater Airspace and Joint Fires in the Korean Theater of operastions
By SSG Cody Grady, SSG Joshua Hasting, and CW3 Jerid Hitchens

28 1-9th FA Holistic Readiness Approach to New Equipment Fielding and Training
By LTC Joe Handke, MAJ Philip Devera, and CPT Sarrah Hulsey

32 Beyond the Wheel: The need for an Intelligent Counterfire Visualization Application
By CPT Andrew Shaughnessy

36 LSCO: is it, or should it be, AirLand Battle 2.0?
By Dr. John Grenier

46 Today's Battlefield Coordination Detachment: is our doctrine right?
By CW4(P) William Carter, CW3 Nick Esser, and MAJ Adam D. Buchanon

Field Artillery Professional Bulletin
Editor: Jamie Southerland
Assistant Editor: Chris Gardner
Art Director: David Johnson

For more information, contact the U.S. Army Field Artillery School at **(580) 442-1090**

By Order of the Secretary of the Army:

JAMES C. MCCONVILLE
General, United States Army
Chief of Staff

Official

MARK F. AVERILL
Administrative Assistant
to the Secretary of the Army
2211001

ANDREW D. PRESTON
Brigadier General, United States Army
55th Field Artillery School Commandant, Fort Sill, Oklahoma

Purpose

Originally founded as the Field Artillery Journal, the Field Artillery Professional Bulletin serves as a forum for the discussions of all U.S. Army and U.S. Marine Corps Field Artillery professionals, Active, Reserves and National Guard; disseminates professional knowledge about progress, development and best use in campaigns; cultivates a common understanding of the power, limitations and application of Fires, both lethal and nonlethal; fosters Fires interdependency among the armed services, all of which contribute to the good of the Army, joint and combined forces and our nation. The Field Artillery Professional Bulletin is pleased to grant permission to reprint; please credit Field Artillery Professional Bulletin, the author(s) and photographers.

Cover

Field Artillery Soldiers from 1st Battalion, 5th Artillery Regiment of the 1st Armored Brigade Combat Team, 1st Infantry Division, coordinate how to properly resupply their M109 Paladins with ammunition during a field training exercise at the Drawsko Pomorskie training area on March 29, 2019. (*Photo courtesy of 1-5th, U.S. Army)*

Farewell to Brigadier General Andrew D. Preston

By Jamie Southerland

A young lieutenant, walking the corridors of Snow Hall late to class because he couldn't find the classroom, he never imagined 32 years later he would be given the keys to the building.

Over a thousand lieutenants have completed the Basic Officers Leaders Course during Brigadier General Andrew D. Preston's time as the 55th Chief of the Field Artillery (FA). He poignantly points out not one of them had been born when he joined the Army.

BG Preston's story begins at the University of Oklahoma to study pre-medicine. Because he excelled in academics, his parents and teachers encouraged him to pursue medicine, serving in the military hadn't crossed his mind. However, during his senior year, he realized that medicine wasn't what he wanted to do, rather he was merely following the path others set before him.

He spent some time thinking about his future and what he wanted to pursue. He soon realized he was intrigued with law enforcement — maybe a role with the Federal Bureau of Investigation or Drug Enforcement Agency. He contacted both agencies and was informed that his current degree didn't normally feed into law enforcement. They recommended spending time in the military or law enforcement to get some background, which would build his resume to be more competitive.

So, that's what he did.

Because the Army sounded more adventurous and included travel, he enlisted in 1990 as an 11B-Infantryman — and just like that, Specialist Preston began his career as a rifleman. The beginnings of his Army journey are proudly displayed today on the walls of his office. What he hadn't counted on is how much he would enjoy the Army adventure.

His company commander at Fort Benning, Georgia, knew he had a college degree and recommended Officer Candidate School (OCS). In those days, you didn't get a lot of choices — branch preference sheets were filled out but most did not get their first choice. Naturally, his first preference listed was Infantry, second Field Artillery, and next Armor. Any combat arms would work for him although he felt confident he would branch infantry since he was a sergeant by that time.

But the Army had different plans and he branched artillery, which meant Preston was heading to Oklahoma. While not his first choice, he was thrilled with the prospects of Field Artillery because his girlfriend, at the time, lived in Oklahoma. That same girl is living in Butner House right now — his wife of 30 years.

Flash forward as the FA Chief shared one of his milestone memories. Serving as a Company Fire Support Officer with Bravo Company, 1st Battalion, 505th Infantry Regiment, 82nd Airborne Division, his unit made the jump into the Joint Readiness Training Center, Fort Polk, Louisiana for its critical rotational exercise.

After assembling, his unit immediately started analyzing the situation and preparing for an expected armored counter-attack. Preston's Fire Support Team started by identifying where the enemy was expected to attack and where his troops would attack. Based on the rate of movement, they identified when to call for fire. The two were preoccupied with determining where they needed to see Fires. BG Preston remembers thinking, "It's a good thing we weren't on the recon team because as we lay there engrossed in doing the calculus, suddenly a voice behind us says, 'what are y'all doing there?'"

"I turn around and it was Major General Mike Steele, my division commander," said BG Preston. "I had not met a lot of two-stars, and certainly this encounter was unexpected. I can't remember what I said, but I'm sure it wasn't coherent or helpful. I stood up and began to explain to MG Steele what we were doing and how we were assessing anti-armor defense trigger points."

In those days, officers wore branch identifiers on their uniform, so Preston had a lieutenant bar on one side and artillery on the other. However, MG Steele recognized Preston's Expert Infantryman's Badge.

"You're artillery, but you've got an infantry badge. What's going on?" MG Steele asked.

BG Preston, a 2LT at the time, shared his journey from infantryman to FA officer with MG Steele.

Left: Joining CPT Daniel Rogers, commander of A Battery, 1st Battalion, 258th Field Artillery, in affixing an award streamer to the company guidon during a ceremony honoring the unit in New Windsor, New York, Sept. 11, 2021. The Alexander Hamilton Award for 2020 was presented to the battery's Soldiers recognizing them as the most outstanding National Guard Field Artillery Unit in the country. *(Photo by 1LT Steve Bissainthe)*
Middle: Discussing the potential of future leaders of the Army with LTC Shad Satterthwaite (center), director, Executive Business Programs in Aerospace and Defense in the Gene Rainbolt Graduate School of Business, and LTC Ryan Cryer (right), professor of Military Science, University of Oklahoma, prior to the ROTC commissioning ceremony on May 13, 2022. *(Photo by Christopher Wilson)*
Right: BG Preston was the guest speaker for the University of Oklahoma's ROTC commissioning ceremony May 13, 2022. "Your success is very important to me personally. You are the future of our Army and my generation passes the mantle of leadership to you," said Preston. *(Photo by Christopher Wilson)*

BG Andrew D. Preston

Commandant of the Field Artillery School and Army Chief of Artillery

"Well, what are you doing to get branched back into the infantry?" Steele asked.

BG Preston continued the story with a twinkle in his eye. He may have been young and a 2LT, but he wasn't stupid. He knew to be extremely careful with his response. He explained, he was at one of those crossroads where you must consider the impact of saying the wrong thing. In fact, you might get what you asked for. He was also mindful that MG Steele was infantry and he certainly didn't want to insult him.

"I'm really not interested in going back to the infantry because I fell in love with the Field Artillery," BG Preston told MG Steele. "I can go to all the infantry schools and wear all the infantry badges, but I've got a special skill set the infantry will never understand."

MG Steele thought about it for a minute which provided a very uncomfortable pause.

"Well, I guess that's the right answer, Lieutenant, carry on," he replied.

Preston survived that conversation "after the Forward Observer Sergeant with me, resuscitated me," he joked.

"Thirty years in the artillery has been exciting, and even more so, especially right now," BG Preston said. "All of the 1990s were spent training and organizing for large-scale ground combat and then, due to reasons we are all familiar with, there was a need to organize and train for counter-insurgency." That operation, with rare exception, was not an artillery fight as we think about artillery. There was some artillery fire, of course, in the initial invasion of Iraq and quite a bit fired in Afghanistan, but it was from firebases. For example, the battalion Preston commanded was organized as infantry and owned its own battlespace in Iraq for a year, essentially the same thing an infantry battalion would do.

"We only brought our guns to maintain them and practice on our days off, but we certainly weren't employing them at all," the general continued. "Clearly, what is old is new here. We are, again, refocused on large-scale ground combat."

What's changed from the 1990s is the technology available and the ability to shoot artillery precisely, whether it be Excalibur or Precision Guidance Kits, Extended-Range, or some other munitions and systems in development, which allow the FA to engage the enemy at much greater ranges than ever before.

BG Preston spent his life in a Field Artillery branch that was out-ranged by the enemy's artillery. But, he believes that's not going to be the case much longer.

"What hasn't changed is the 155 mm round weighs about 100 pounds. There is technology to measure the weather or calculate firing data, but that doesn't change how big pieces are moved." added BG Preston.

So, BG Preston said, "There will always be a need for Field Artillerymen who are fit and capable of doing their job. What also hasn't changed is the five requirements for accurate fire. However, the ability to meet those five requirements has changed because more data is available at their fingertips."

"We have increased accurate means of computation immediately available," said BG Preston. "The requirements are the same, and we still have to know where we are and where the enemy is. We must know our weapon data and the weather, and we also must be precise in computing our firing data. That hasn't changed. The five requirements are enduring and universal regardless of the weapon system. Just as important, being physically fit is paramount because the 155 round still weighs 100 pounds."

Regarding the Field Artillery modernization efforts, BG Preston did not miss the opportunity to recognize the valuable partnership with the Long-Range Precision Fires Cross-Functional Team and MG John Rafferty. He also added the advantage of being closely tied with the Capabilities Development and Integration Directorate into the equation.

He emphasized the future of the Field Artillery is playing out in Europe right now as Ukraine and Russia are slugging it out with heavy weapons; this is a Field Artillery fight, he said. In his opinion, and the opinion of many others, large-scale combat operations (LSCO) is what makes the branch continue to be imperative.

"The walls around here are littered with quotes from Napoleon to General George S. Patton and others. In the future they will be adorned with quotes of generals from today and future generals who say essentially the same thing," predicted BG Preston.

He assures us that artillery will remain essential to LSCO; there's no other way around it. He believes in the future, we will be able to shoot farther, more accurately, and have sensors available to target precisely at ranges that you can't see with a pair of binoculars. The criticality of the Field Artillery to be on the battlefield will endure.

When asked what advice he would give a young Soldier or officer coming into the Field Artillery today, BG Preston says he often gives this advice. "You must be proficient. Remember, you will be the most knowledgeable Field Artilleryman or woman in whatever environment you are operating in," said BG Preston, "as you better know what you are talking about because that is the expectation, and it's very dangerous if you don't know."

He included additional advice on the importance of being a professional, including staying physically fit. "It's difficult enough to lead without being out of shape, tired and unhealthy. All those things can hinder a person's ability to bounce back from injuries and other things," he said. "Physical and mental resilience is so important and much easier when you're fit!" He expressed the importance of living the Army values and having fun.

According to BG Preston, another thing that has not changed in the Field Artillery, or the Army, is the importance of knowing your people. Be aware of what's going on in their lives. As the Chief of the Field Artillery, he can't possibly have an awareness of everybody in the branch. Yet, the squad and platoon leaders can, and do have the responsibility to know everyone in their organization, which remains imperative.

Everything comes full circle inside Snow Hall and the United States Army Field Artillery School for this FA Chief's career. But now he says it's time to move on and welcome the talent found in the force with their new ideas and fresh energy.

"My proudest moments in the Army are seeing those who have served under my command do well," BG Preston said. "After over 30 years in the branch, the big moments for me are seeing them leading so well and continuing to excel."

From the desk of the CSM

CSM Michael J. McMurdy

Command Sergeant Major of the Field Artillery

"To our 55th Commandant and Chief of the Field Artillery, thank you and Mrs. Gina for over 32 years of service to the Branch, our Soldiers, and our families. The impact of your leadership and efforts have touched our profession from the individual through strategic levels. I'm sure I speak for Redlegs everywhere in saying Team Preston will be missed, but we are grateful you have developed so many others and postured the *King of Battle* for continued success long past the end of your uniformed service."

Michael J. McMurdy

Recruiting and retaining for the FA schoolhouse:

The Tip of the Spear

Why the best Field Artillery officers belong in front of a classroom

By CPT Zak Lankford and MAJ Kate Lungmus

FCoE Vision Statement

"The Fires Center of Excellence (FCoE) creates the world's premier Fires Force; ready to employ responsive cross-domain fires to win in any operational environment."

Winning matters and the Field Artillery schoolhouse needs the best the branch has to offer to make this vision a reality. Broadening opportunities for captains set individuals apart through the professional experiences they offer. Desirable assignments provide networking and mentorship opportunities, operational experience, and doctrinal mastery for a Field Artillery captain, but few offer all three. The best possible place to gain all of those in one place is as an instructor.

Ingrained throughout FCoE is a culture of values, fitness, and resiliency. Instructors build resiliency in students and themselves and improve the branch through mastery, continuity, and depth. On a daily basis, instructors ingrain their students with excellence in the fundamentals through discussion of doctrine, successful techniques, and professional skill development. When the best artillery commanders and leaders become instructors, they have the opportunity to spread their experience to the next generation on a large scale. The Field Artillery branch benefits as a whole when commanders at all levels recognize the value of sending the best and brightest to teach.

Instructors live the Army Values. We ensure we are always the world's premier Fires Force, ready to fight and win through the rapid employment of responsive cross-domain Fires to win in complex operational environments. FCoE enables the development of a professional force by developing high-performing instructors, but it is the instructors who teach and mentor students with their experience, knowledge, and discipline. We build leaders able to integrate into the joint force by providing multi-domain Fires, and we prepare them to reduce harmful behaviors and build positive command climates as junior leaders and commanders throughout the Army.

FCoE Mission Statement

"The Fires Center of Excellence trains, educates, and develops Soldiers and Leaders; creates and develops capabilities; and provides a Fires Force to support the Joint Warfighting Commander across the spectrum of operations in Joint and Multinational environments."

Talent management, doctrine, and Fires capabilities initiatives begin in FCoE at Fort Sill. Instructors return to the force versed in the latest developments that ensure Fires is increasingly data-centric, joint-focused, and able to conduct operations in complex contested environments. Field Artillery Captains Career Course (FACCC) and Field Artillery Basic Officers Leaders Course (FABOLC) instructors are truly the *tip of the spear* in forming an officer corps ready to meet the challenges of Fires integration in a rapidly evolving technology and threat environment.

Field Artillery Captains Career Course: Battery command, but better

Imagine a classroom of 15 experienced lieutenants and you as a battery commander with no responsibilities other than mentorship. From a leadership perspective, serving as a FACCC instructor is an opportunity to have all of the good parts of battery command without competitors for your attention.

FACCC instructors are the tip of the retention spear for quality officers, and only the best should serve here. Most officers attend FACCC at the four-year mark, which means students are staring down the barrel of a critical life decision. Recent experience shows that while many students are toying with the idea of getting out of the Army, very few are sure about their decision. Most are wary about sharing their doubts with senior leaders, making FACCC one of the last opportunities to have an open conversation about it. Nearly every unsure student had one or more negative experiences in their first duty assignment, and often they

can't imagine that other places are any different. A good FACCC instructor facilitates conversations between students to share positive and negative experiences, puts them in perspective, and offers a different view of an Army career. The instructors' role in identifying and engaging with talented students at FACCC makes them the most critical interface the Army has in retaining quality officers.

Every FA officer will come through the FACCC on their way to being a battery commander. Instructors' investment in their students and their relationships benefit the Army and result in highly competent staff officers and commanders when instructors return to the force as S3s and brigade Fire Support Officers (FSOs). It's a win-win for instructors to gain students' trust and have essential and open discussions with junior leaders.

What's in it for instructors?

FACCC is a melting pot of ideas. Instructors will mentor students using their tactical experience but will also regularly discuss doctrine and tactics with fellow instructors with diverse backgrounds. Some of the most important conversations we have as instructors are with our peers, all of whom are experienced and intelligent with well-formed opinions about gaps in doctrine or successful techniques they used as FSOs or commanders. FACCC instructors also regularly meet with the FA pre-command course students to coordinate classroom mentorship or serve on panels about the curriculum. In a two-year assignment as a FACCC instructor, meeting every incoming Division Artillery commander and most FA battalion commanders is not uncommon as they attend the mandatory course. For many of us, this results in a positive networking experience that pays dividends during the post-intermediate level education (ILE) assignment interactive module cycle.

What is it like?

FCoE keeps Fires on a sustainable strategic path amidst an uncertain future. It's an ambitious task, and the only way for FACCC to achieve it is in small groups over an extended duration. As a small group leader (SGL), an instructor teaches about two six-month classes per year, usually with a month or two break in between. Small groups are capped at 15 students, meaning that instructors teach, coach, and mentor anywhere from 45 to 90 American and international students in total, depending on the length of their assignment.

In order to be proficient as an instructor, there is an education and certification process to ensure instructors can effectively manage a classroom and explain complex concepts in their own words using multiple examples, analogies, and methods. Most certification tasks are supervised by experienced senior instructors, ensuring constant sharing of ideas across the instructor cohort. You will also audit and evaluate fellow instructors during your certification, allowing you to build confidence before starting your first class. The most experienced instructors also assist the Directorate of Training Development and Doctrine in creating new classes and revising and updating old ones to ensure they present the most relevant and high-quality material to students. In doing so, instructors can apply for and earn the basic and senior instructor badges to recognize their contributions.

Days at FACCC begin with the group Physical Readiness Program, usually run by a student tasked with managing the fitness plan. Classroom instruction is prefaced with a discussion of current events, also run by students, providing an opportunity to tie classroom concepts to daily news. Instructors then lecture, supervise practical exercises, and assign presentations or group work. FACCC blocks of instruction are designed to allow instructors the freedom to deliver content primarily using teaching methods that work for them, provided students meet terminal learning objectives. Practical exercises in fire support, FA battalion planning, and battery orders production are designed to be open-ended to allow you ample opportunity to coach students on how they think about problems rather than arriving at a single correct answer. Feedback is a group effort, allowing students with specific experiences or low-density backgrounds to chime in. Instructors

Opposite page: A Soldier assigned to Delta Battery, 1st Battalion, 79th Field Artillery Regiment, 428th Field Artillery Brigade, Fort Sill, Oklahoma, maintains security during the batteries culminating field exercise on May 7, 2020, at Fort Sill. *(U.S. Army photo by SGT Dustin D. Biven / 75th Field Artillery Brigade)*

are consistently impressed with the depth of knowledge students have: notable examples are former radar platoon leaders, division airspace managers, and United States Marine Corps fire support BOLC instructors.

Who is a good candidate?

Most students had just graduated college when we were taking our first command, and few students questioned our authority when they realized this. That said, an instructor who manages a classroom with rank seniority does not build strong rapport and influence as a mentor: successful instructors are holistically intelligent, candid, fit, competent, and have a sense of humor. Being an excellent FACCC instructor is not easy, but it is profoundly rewarding on multiple fronts as an individual and in service to the organization.

FA Basic Officers Leaders Course: The first face of Field Artillery

While FACCC instructors deliver a profound amount of information across the spectrum of professional knowledge, they benefit from baseline experience among their students. FABOLC instructors teach the material with a narrower scope, but they are responsible for many other faces of indoctrination. FABOLC students arrive from Officers Candidate School (OCS), Reserve Officers' Training Corps, West Point, or years in the National Guard. Most have never seen a motor pool, have qualified only once on an M4, or have never signed a counseling statement. The instructors' responsibility is to turn all of them into respectable Field Artillery officers who safely coordinate fire support and confidently perform gunnery. In many ways, a more significant challenge, FABOLC is also deeply rewarding and critical to the Field Artillery's tactical success and reputation among maneuver units.

FABOLC instructors are the lieutenants' first engagement with Field Artillery. They have the opportunity to develop their students to be the officers the force hopes to receive.

What's in it for instructors?

Imagine showing up as the most technically proficient officer in your brigade in the basics of fire direction, fire control, and fire support – all of which are the most frequently identified failures in the Fires Warfighting Function at Combined Training Centers (CTCs). FABOLC instructors' marketability as experts is indefinite.

Like FACCC, FABOLC instructors work with other professionals interested in Field Artillery tactics and doctrine. They benefit from a marketplace of ideas and the opportunity to engage in meaningful conversations with successful peers. Unlike FACCC instructors, whose curriculum is broader, FABOLC instructors develop mastery of specific technical tasks while also mentoring students with their tactical experience. In our experience, many field-grade officers with extensive Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) experience are not comfortable with fire control and fire support for large-scale combat operations. Yet, their technical expertise is highly desirable in the United States Army Forces Command units training for today's mission set.

Field Artillery schoolhouse is the ideal assignment for the most competitive officers.

For pre-command captains, FABOLC also offers the opportunity of short command queues on Fort Sill for instructors who require more time for broadening due to their specific career plans.

What is it like?

FABOLC offers instructors an opportunity to have an outsized influence on the FA branch and officer corps. FABOLC is shorter than FACCC, but the classes are larger. Instructors will directly teach between 70-100 American and international students per year and coach over 300 during coordinated live-fire events and simulations.

As true technical masters, FABOLC instructors have a robust certification program and specialize in either fire support or gunnery. New instructor training is more extensive than FACCC due to the

technical nature of the curriculum, but it results in expertise and confidence before starting their first class. BOLC instructors also regularly apply for and earn the basic and senior instructor badges to recognize their contributions.

Who is a good candidate?

FABOLC instructors can run a classroom with an iron fist more than FACCC instructors can, but they are often asked to intervene in different student needs. While FACCC students may have family and career issues or post-deployment concerns, FABOLC students are younger and are often experiencing a much more profound life transition. Good instructors are mature and empathetic, in addition to being intelligent and competent. There is no substitute for genuine compassion when teaching and modeling resilience.

Life at Fort Sill

Officers who aren't from Oklahoma may not immediately recognize the benefits, but they find their opinions change as they get older. Housing at Fort Sill is plentiful and affordable, there is minimal traffic, and duty schedules are reliable. Some of the best childcare centers in the Army are at Fort Sill. Oklahoma City has a busy airport, professional sports teams, and many entertainment options an hour away. Hunting and fishing on and near Fort Sill are excellent, and some of the nearby schools are rated the best in the state. Most healthcare needs are met off-post, meaning that any specialist can see families with specific needs quickly. The schoolhouse is a highly-controlled environment, and instructors can take advantage of and enjoy a stable schedule. It's unlikely to hear of an instructor struggling to manage parental leave or find a peer to cover a class so they can attend a wedding, visit ailing parents, or participate in a school event for their kids.

Show me the numbers

Year Group (YG) 10 to YG12 instructors had a 100% promotion rate to major, with nearly 20% of FACCC instructors achieving merit-based promotion. Several SGLs were selected for sister service command and general staff operations courses, and 98% were resident select for Army ILE. In 2021, an SGL competed for and earned a fellowship at Harvard and is finishing a master's degree in public administration. Former SGLs currently command two of the force's O-6 level Field Artillery commands. The Battalion Commander Assessment Program routinely reports that officers not selected for battalion command lack verbal and written communication skills and emotional intelligence (specifically, empathy and self-awareness). It is impossible to spend several years as an instructor and not improve in every one of those areas.

Quantitative benefits aside, we feel strongly that the most critical aspects of instructors' contributions are qualitative. Networking and mentorship opportunities with students, senior leaders, and peers have career benefits and are profoundly personally rewarding. We are all more confident public speakers with humility and perspective gained from appreciating diverse views about service and operations. We also have extensive opportunities to attend every artillery-specific school that Fort Sill offers, making them even more competitive in future careers.

The Field Artillery schoolhouse wants and needs the best leaders with holistic talent. Commanders should consider how teaching benefits both commanders and the force when advising captains who are considering broadening their choices. Whether you are looking for a broadening assignment that will provide the mastery that CTCs are looking for, a deep dive into doctrine and self-development, a family-focused break from deployments and rotations, or a launching point to other areas of service, teaching at the Field Artillery schoolhouse is the ideal assignment for the most competitive officers.

The views expressed in this article represent the authors and are not the views of the U.S. Army, Fort Sill, The Fires Center of Excellence, or any other organization.

CPT Zak Lankford is currently serving as SGL for the FACCC at Fort Sill, Oklahoma. He holds a Bachelor of Science in Human Geography from the United States Military Academy and a Master of Arts in Financial Planning from Regent University. He has served in an Infantry Brigade Combat Team, Stryker Brigade Combat Team (SBCT), and an Armored Brigade Combat Team with operational experience in OEF and Operation Spartan Shield.

MAJ Kate Lungmus is a former SGL for the FACCC. She is an OCS graduate and holds a Bachelor of Arts and Master of Arts in Anthropology from St. Lawrence University and the University of Montana and a Master of Public Administration from Harvard's Kennedy School of Government. She has served in a Fires Brigade and SBCT.

The Patriot Brigade's Record-Setting JRTC Rotation

By LTC Jonathan T. Holm and Contributing Editor, Dr. Thomas E. Ward II, U.S. Army (Ret.)

On 24 April 2021, the Patriots of the 3rd Brigade Combat Team, 10th Mountain Division (Light Infantry) (3/10 BCT) emerged from their Joint Readiness Training Center (JRTC) rotation. *Geronimo*, the opposing forces (OPFOR), lived up to its reputation of being the last enemy anyone would ever want to fight. They constantly attacked across all domains and fought with agility, tempo, and decisiveness. Seasonal rains and densely wooded training areas added to the difficulty of the training environment.

Despite these challenges and a litany of shortcomings, the brigade's Fires Warfighting Function (WfF) set multiple records during this rotation:

- More Battle Damage Assessment (total number of enemy casualties and damaged or destroyed equipment) from Fires than the previous six rotations combined.
- First brigade to outshoot *Geronimo* with Fires.
- First-ever fully digital sensor-to-shooter fire mission at JRTC.
- Fastest counterfire time in eight years.
- Longest firefight at a Position Area for Artillery (PAA) in recent memory.

This article will describe some of the key decisions and actions that made this success possible, with the intent that other brigades can replicate these successes in the future.

Training Progression

After a 15-month long training hiatus due to a Southwest Border deployment, COVID restrictions, and Hurricane Laura recovery, Soldiers of the 5-25th Field Artillery followed a condensed but fairly standard training progression *(timeline on next page)*.

The brigade made the most of its available training time in two important ways: (1) by leveraging great support from our division, and (2) by having protected windows for After Action Review (AAR)-driven retraining. One other item to note was that the brigade did not merge Artillery Table XV with Company Combined Arms Live Fire (CALFEX). Treating each as a distinct event enabled the battalion to ensure each training audience could train to standard.

It was a fast-paced, aggressive training progression during which three factors were vital to the brigade's success: ideology, deliberate decisions, and culture.

Ideology – Leading with High Explosives (HE)

Before we ever met, COL Matthew Hardman, commander of 3rd BCT, initiated a running dialogue

with all the battalion commanders about how the brigade would fight. COL Hardman wrote and disseminated a "how we fight" document and led Leader Professional Development (LPD) sessions on the topic. By the end of the Leader Training Program (LTP) in November 2020, leaders were all on the same page at every echelon: the brigade would "lead with HE." The 3/10 BCT would do most of its damage to the enemy with HE and then decisively close with and destroy the enemy with lethal rifle platoons. That was easier said than done, but everyone understood the goal. The intent to lead with HE would have implications for multiple WfFs.

Intelligence drives operations, so the brigade could not lead with HE unless the intelligence WfF was ideologically aligned. The BCT had no deployable targeting warrant officers during its rotation, which meant there was no targeting warrant working with the Brigade S2 to transform intelligence into targets. After several LPDs, key players within the Brigade's S2 shop agreed to fill this role and have a "mentality of lethality." They began to think of themselves as hunters.

COL Hardman's guidance was that "We collect for two reasons: to answer Priority Information Requirements and to facilitate targeting. We never do only one or the other, but we always must be clear on which one is the priority." When targeting was the priority, the intelligence WfF was ready to hunt.

Another critical conversation centered on targeting and the Fires WfF. Many months before the rotation, COL Hardman discussed targeting with us. We came in with the mindset that we should only expend ammo and expose ourselves to counterfire for really high payoff targets (HPT); we had to have a disciplined adherence to our HPT List – Attack Guidance Matrix – Target Selection Standards. After listening intently, COL Hardman said, "90% of the time, we will do exactly that."

"Sometimes the targeting team will tell me that two or three particular enemy capabilities are the most important things to destroy, and they'll be right," he said, "but then Murphy and the enemy will vote, and we won't be able to find it. At some point – and I trust you to know when this point is – we need to stop looking for the unicorn and just kill a bunch of infantry."

This intuition-driven balance between a disciplined approach to targeting and an opportunistic approach to "fight the enemy, not the plan" worked well. Several times our Fires landed a haymaker by destroying a critical HPT, but when S2 could not find HPTs, Fires hit *Geronimo* with body blows, neutralizing infantry platoons and reducing enemy combat power with every fire mission.

To repurpose GEN Eisenhower's famous quote, "The Target Synch Matrix is nothing; targeting is everything." The fight rarely unfolded exactly as we anticipated during Targeting Boards. However, by running the targeting process every day, the brigade was able to lock in assets that it could repurpose as needed during execution, thereby fighting the enemy within the commander's targeting guidance.

We also embraced the idea that "if it's worth killing, it's worth overkilling." Commanders at

TIMELINE

AUG-SEP 2020:	Hurricane Laura recovery
SEP 2020:	Artillery Table (AT) VI (Section Qualification)
OCT 2020:	AT XII (Platoon Qualification)
NOV 2020:	Leader Training Program (LTP); AT XV (Battery Qualification); Company Combined Arms Live Fire (CALFEX)
DEC 2020:	Company-level re-training FTX
JAN 2021:	Mountain Peak (BDE FTX); AT XV
MAR 2021:	Brigade Command Post Exercise (CPX); Company-level re-training FTX
APR 2021:	JRTC Rotation

all echelons, Fire Support Teams (FISTs), and Fire Direction Centers became comfortable planning to fire large volumes of HE. The Field Artillery (FA) Battalion (BN) used the JRTC adjudication tables to develop all fire orders and made massing the norm, starting as early as section certification. Training Circular 3-09.8, *Fire Support and Field Artillery Certification and Qualification* establishes minimum requirements for rounds fired during live-fire qualification; we routinely tripled these minimums. The battalion broke the habit of low-volume fire missions that had become common after decades of stability operations.

The "lead with HE" mentality relies upon great sustainment. Since organic indirect fire systems are the most effective way for commanders to shape the fight at echelon, tracking HE ammunition is the commander's business. The FA BN Tactical Operations Center (TOC) tracked every 105 mm and 155 mm artillery round by location and planning horizon, including what each battery (BTRY) currently had on hand; what was at the Combat Trains Command Post (CTCP) and available to shoot within eight hours; at the Brigade Support Area and available within 24 hours; and at the Division Support Area, available within 48 hours. Sustainment is a team sport. Tracking and synchronizing to this level of detail required close coordination between the batteries, battalion S4, the CTCP, the Field Trains Command Post, brigade staff, and 710 Brigade Support Battalion (BSB). LTC Barry Murray, commander of 710 BSB, drove sustainment for the brigade and worked wonders to keep the mortars and Howitzers fed with Class V.

That said, great planning at higher levels falls apart if companies/batteries/troops are not prepared to execute. Early on, Command Sergeant Major (CSM) Nema Mobar, the 3rd BCT CSM, hosted a brigade-wide LPD for BTRY/company/troop command teams. He used C BTRY to demonstrate the resupply process from Logistics Status (LOGSTAT) through the delivery of supplies at the Logistics Release Point. This thorough LPD prepared the brigade's units to resupply themselves, conduct field maintenance, and fuel the fight. Once leaders were educated, accurate LOGSTAT reporting became a key training objective for every training event.

Ingraining the ideology to "lead with HE" early in the train-up ensured brigade-wide understanding of the commander's intent. That shared understanding enabled countless other actions across warfighting functions and echelons that converged with incredible effects during JRTC.

Deliberate Decisions – Manning, Training, Equipping, and Leading with What You Have

Few U.S. Army units are ever fully manned or equipped. Therefore, leaders must make deliberate decisions about how they allocate the limited assets they have. This applies to how leaders man, train, equip, and lead.

"Readiness is about what you have, not what you don't have." - Major General Milford Beagle, commander, 10th Mountain Division (Light Infantry)

Effective talent management is essential when short on personnel. With no deployable warrants, we hand-picked a hard-working, intelligent, and resilient first lieutenant (1LT) as my targeting officer. Short on FIST leadership, we also hand-picked two 1LTs, two staff sergeants, and two specialists who had the smarts and resilience to work the Fires Cell on the Brigade Current Operations floor and take guidance from the BCT S3, BN and the BCT Commander (CDR). Also, since every FA fire mission comes through the BN FDC, we put the best pre-command captain and our Top FDC's Section Chief into the BN FDC. Yes, that one BTRY suffered from the loss of a fantastic section chief, but the battalion as a whole benefited.

The 5-25th FA benefited from ample reps during its train-up. In addition to BN- and BDE-driven training, Division Artillery (DIVARTY) ran two Table XVs and a Battalion Fire Support Element certification. Division also resourced a Mountain

Peak rotation (complete with Observer Controllers [OCs] and OPFOR) as well as a Virtual Mountain Peak CPX. Teams at every echelon could train, AAR, and then retrain, often with the assistance of OCs. The 5-25th FA could not have succeeded without the resourcing, support, and expertise provided by the 10th Mountain Division and DIVARTY.

From an equipping perspective, the battalion needed support from the broader team to succeed. All of C BTRY's ammo trucks were deadlined with faults beyond what 5-25th FA mechanics could repair. LTC Murray prioritized these ammo trucks for passback maintenance and leveraged assistance from the 10th Sustainment Brigade. After considerable effort, five ammo trucks were repaired in time for JRTC, greatly easing the burden on the distribution platoon and increasing the battalion's ability to employ its M777 Howitzers. DIVARTY also allocated funds to help rebuild Howitzer shop stock and fill FIST equipment shortages. Whether at JRTC or in combat, Combat Power = Trained Teams + Fully Mission-Capable Equipment + Ammo + Command and Control. With help from the BSB and DIVARTY, 5-25th FA was able to generate far more combat power than it could have on its own.

Despite careful talent management, help from teammates, and multiple training reps, 5-25th FA still had less combat power than desired. The best thing the battalion could do was be honest with itself and then deliberate about where to apply limited resources. This was most starkly true with the FISTs. The battalion was not manned or equipped to fill all 15 of its authorized FISTs. Rather than allow talent and equipment to be randomly dispersed throughout the FISTs, we deliberately shut down several FISTs and aligned the best equipment with the best-trained, best-led FISTs and ensured that these FISTs were aligned with the best companies in each maneuver battalion. Being unable to give every company a world-class FIST, 5-25th FA at least gave the best FISTs possible to each battalion's best companies.

Positioning leaders on the battlefield was another critical decision. COL Hardman agreed that the BN CDR's primary place of duty needed to be the BCT TOC during the rotation. As COL John (Mike) Barefield, CDR of 10th Mountain DIVARTY, pointed out, the Fire Support Coordinator (FSCOORD) is the only person with the training, experience, and authority to drive the entire Fires Warfighting Function and the best place to do that is the BCT TOC. In the BCT TOC, the BN CDR sat behind the ISR Manager and Fires Desk and within arm's reach of the JTACs (Joint Terminal Attack Controller) and Air Defense Airspace Management / Brigade Aviation Element cell. From that location, it was possible to drive real-time Fires execution.

However, being FSCOORD did not absolve BN CDR of the responsibility to command the FA BN. The FA BN TOC was always one terrain feature away from the BCT TOC. They did not share a footprint, but the FA BN was always close enough that the FA BN commander had reliable comms from the BCT TOC and could quickly move between them for face-to-face engagements.

The most important leader placement decision each day of the rotation was where to place CSM Sean O'Brien, 5-25 FA BN CSM. He was the ace up our sleeve. Wherever we anticipated friction, the BN CDR deployed the CSM. No one in the BN understood the commander's intent better and had the freedom of action to go where we needed him. While the BN CDR spent almost the entire rotation at a command post, the CSM was at the right friction point at the right time.

Culture – Restoring Standards, Discipline, and Accountability

Even with the great leaders in place at the time, the brigade's climate, culture, and identity suffered from fifteen consecutive months of friction spanning the non-standard Southwest Border mission, COVID lockdowns, and a disastrous hurricane. Restoring a culture of standards, discipline, and accountability has been the BCT's number one priority, even while preparing for JRTC.

Training alone does not build readiness; only training to standard does. Leaders at every level must set and achieve high standards, and this requires discipline. The discipline to train and fight to standard is the same as the discipline to do anything else to standard; it is a mindset and an identity. Soldiers that do not have the discipline to clean their weapons to standard cannot be trusted to fight to standard. A leader who lacks the discipline to enforce uniform standards in

garrison cannot be trusted to enforce noise and light discipline in combat. Being disciplined in garrison can sometimes be harder without the life-and-death impetus provided by a lurking enemy. That is why it is so important. If standards and discipline are second nature in garrison, then they will transfer to combat.

For these and other reasons, enforcing standards and discipline has been an enduring top priority for the brigade for two years. This is easier said than done, especially when it requires removing tactically competent leaders. As previously described, manning was a constant challenge. This challenge was exacerbated by having to separate or relieve personnel for cause. A number of Soldiers, including leaders from section to BTRY level, were separated or relieved within as little as one week before the JRTC rotation. The loss of these Soldiers and leaders right before rotation certainly created hardship, but it was more than offset by an increase in motivation as other leaders and Soldiers became aware that technical and tactical proficiency or a perceived need for manning would not shield anyone from the consequences of violating the standard. Everyone saw that leaders and Soldiers in 5-25th FA would be held accountable if they did not adhere to the Army's standards; this built trust and confidence within the unit.

Holding people accountable to standards is necessary but is insufficient to ensure the development of a learning organization, and in a near-peer fight, the side that learns fastest wins. When technology overmatch is negligible, learning overmatch can be decisive. Success in learning ultimately relies upon the self-accountability of the student because the student will never learn unless they take personal ownership of the process. The acronym we developed was to "be CHAD: be Coachable, Humble, And Disciplined." During training, leaders at all levels will interact with coaches from their organization or external evaluators. Learning leaders have to be *coachable* to learn from these coaches. Sometimes leaders make imperfect decisions and have to be *humble* enough to learn from them. None of that matters without discipline. The hardest part of any training event is not the actual training; it is having the *discipline* to implement the "sustains" and "improves" from the AAR, execute the plan of action, and follow through on the retraining. An organization has not truly learned until its behavior has changed, and that behavior change solidifies during retraining.

After Mountain Peak, no one would have anticipated that 5-25th FA would set records for counterfire times at JRTC just a few months later. The battalion's counterfire times were dreadfully slow during Mountain Peak, but the whole team, commander included, learned from the coaches, humbly learned from failure, and were disciplined enough to implement changes. The entire battalion became CHAD. During Virtual Mountain Peak, the battalion conducted dozens of counterfire drills daily. Each time, Soldiers throughout the battalion figured out ways to improve and were coached on how to shave seconds off of response times. Each day, Intelligence Preparation of the Battlefield improved; the team anticipated enemy PAAs, emplaced Call for Fire Zones, developed Airspace Coordination Measures, and laid the designated counterfire BTRY on those enemy PAAs. This is simple in theory but is difficult in practice in a dynamic training environment. The *Thunder team* needed a lot of reps and a lot of coaching from our excellent Division Fires and DIVARTY teammates, but it paid off.

Success in learning ultimately relies upon the self-accountability of the student because the student will never learn unless they take personal ownership of the process.

Another important part of being a learning organization is to avoid self-defeating unforced errors. In this vein, we talked about "the 4x Ss" (safety, standards, sensitive items, and security) for months before JRTC. Nothing derails training as quickly as a significant safety issue, which is exactly what happened when the battalion deployed to the field after Hurricane Laura. Needless to say, when Soldier safety has been put at risk in an accident, the training immediately

takes a back seat. You can make time to retrain, but you cannot un-injure a Soldier. The effect of losing a sensitive item is similar to that of an accident since training grinds to a halt to find the missing item. The third "S" is standards which, as discussed previously, absolutely correlates to training readiness. The fourth "S" is security, discussed at length in the following paragraphs. If leaders intently focus on the 4x Ss, they will avoid those major distractors that greatly inhibit learning.

Near the end of LTP, COL Hardman pulled all the battalion commanders together and said, "We are going to struggle with many things during this rotation, let's at least not struggle with security." The 5-25th FA embraced that guidance. The battalion's soldiers became diggers and tree-dwellers. These Redleg warriors tucked their Howitzers into the wood line and dug fighting positions at every PAA. In fact, during a Table XV, COL Barefield half-jokingly remarked that the battalion should rename all of its batteries after animals known for their digging skills.

The emphasis on security worked. During JRTC, the BTRY commanders deliberately balanced manning allocation between offense (firing capability), defense (security), and special teams (Drone Busters and Stingers). The batteries deliberately sought out undesirable PAAs, avoided the obvious large open fields, and forced *Geronimo* to expend extensive reconnaissance efforts to find the guns. At the final AAR, the OPFOR commander said that he had an especially hard time finding the M119 105 mm Howitzers, that the battalion's "special teams" repeatedly damaged his reconnaissance aircraft, and that the firing platoons would not go down without a significant investment of combat power from the OPFOR. The modern battlefield is a slog, and leaders at all echelons must fight to maintain combat power.

Conclusion

The success of the Patriot Brigade at JRTC resulted from the confluence of multiple decisions at multiple echelons, which began months in advance. After the rotation, CSM Rodney Graves (the JRTC OC for FA BN CSMs) was told of the frustration that we struggled to overcome many of the same trends that other BNs struggle with during their rotations. He said, "Sir, the trends are the trends. What makes the difference between a good or bad rotation is leadership." He is right. Whether it was infantry BNs and rifle COs leading with HE at echelon, the BSB reliably feeding the guns with Class V, FSOs and FSNCOs doing the best they could with what they had, or BTRY commanders doggedly securing the brigade's guns, leaders at all echelons achieved the BCT commander's intent: (1) lead with HE, (2) make tough but deliberate decisions about constrained resources, and (3) foster a culture of standards and discipline. Every unit has its share of struggles at JRTC, and 5-25th FA was no exception, but its success in employing Fires largely stemmed from those three factors.

LTC Jonathan Holm, is currently in command of 5th Battalion, 25th Field Artillery Regiment in 3rd Brigade Combat Team, 10th Mountain Division (Light Infantry). He holds a Bachelor of Science in Military History from the United States Military Academy and a Master of Arts in Leadership from Duquesne University. LTC Holm has served in leadership and staff positions in the 18th Field Artillery Brigade (Airborne), 4th Infantry Division, U.S. Indo-Pacific Command, and 10th Mountain Division. He has participated in four Combat Training Center rotations and has deployed to Iraq three times and Afghanistan twice.

SHAPING DEEP

to Combine Arms in the Close:

Intelligence Support to Targeting in the Brigade Combat Team

By MAJ Christian Garner, CW2 Christian Wanamaker, and WO1 Mario Wright

Any rotation at a Combat Training Center (CTC) offers its unique blend of challenges; however, a Stryker Brigade Combat Team (SBCT) fighting at the National Training Center (NTC) in the middle of the Mojave Desert at scenic Fort Irwin, California, faces its own specific challenges it must overcome. Although Stryker formations possess advantages in speed and dismounted infantry employment in complex terrain, at the end of the day an SBCT is "outgunned" by range and capability against an Opposing Force (OPFOR) Brigade Tactical Group. In an effort to "level the playing field" against the OPFOR during *Ghost's* NTC 22-03 rotation, 1st Battalion, 2nd Regiment SBCT received the dictum to create a framework across Warfighting Functions enabling responsive Fires to shape deep and combine arms close, facilitating operational success. As part of this challenge, the brigade's Intelligence Warfighting Function (IWfF) focused its energies on enabling deliberate and dynamic targeting at the brigade level. The *Ghost* IWfF found success in these endeavors through a mixture of deliberate preparation for the rotation, systems inter-operability, and processes across the staff, specifically in conjunction with the brigade's Fire Support Element (FSE).

The maneuver battalion's success, particularly the cavalry squadron, in prosecuting their respective missions can be directly tied to timely intelligence that integrated bottom-up refinement and the fusion of that information with multi-discipline intelligence reporting within the Brigade Intelligence Support Element (BISE). A nearly fully functional intelligence systems architecture across all phases of the training operation enabled the success of the BISE Targeting Cell in collecting and processing the massive amount of information available. The embedded Field Artillery Intelligence Officer (FAIO) in the BISE and integration with the Information Collection team set conditions for deliberate targeting. Both dynamic and pre-planned fire support plans were better integrated with the combined arms operation because of this collaborative approach between Intelligence and Fires. Single source disciplines, electronics maintenance, and tactical unmanned aircraft systems all provided critical support to the brigade IWfF through all phases of the operation. While successful, yet far from perfect, 1-2nd SBCT's IWfF performance supporting brigade-level targeting during NTC 22-03 validated best practices and identified other areas for future refinement.

Deliberate Preparation

The 1-2nd SBCT's IWfF entered NTC 22-03 Military Intelligence Training Strategy (MITS) Tier III certified based on an unconventional and consolidated training progression. While the MITS training circulars dictate Tier I certification prior to a CTC rotation, the brigade leadership determined, this was an unrealistic benchmark to achieve based on the time available. Instead, the IWfF leadership focused on other efficiencies and processes that

could be leveraged within the identified constraints.

Following a trip to NTC to observe 2nd Battalion, 2nd Regiment SBCT's 21-09 rotation, the Brigade S-2, Collection Manager, and BISE Chief began a targeted program to build shared understanding in the IWfF, specifically within the 35F, all-source analyst community throughout the brigade. One of the first tasks identified as a critical shortfall across FORSCOM formations was the lack of functional SIPR tokens by IWfF personnel assigned to the BCT. In order to navigate the intra-post bureaucracy of security management, the Brigade S-6, NETCOM, and the use of the brigade's Command & Staff briefing updated leadership on the status of each echelon's statistics (i.e., accounts, read-ons, token provisioning, etc.) and placed appropriate command emphasis on a chronic issue.

With the capability to now fully utilize its SIPR network at home station, the IWfF leveraged National Technical Means communications (COMINT) and electronic (ELINT) intelligence signatures to begin understanding the OPFOR it would face at NTC. Becoming subject matter experts on Fusion Analysis Development Effort Multi-Int Spatial-Temporal, BISE analysts conducted historical analysis on six previous east-to-west NTC rotations against regular Army BCTs. Identifying the signatures of High Payoff Target List (HPTL) systems, the analysts plotted the locations and movements of key Air Defense, Fires, and Electronic Warfare systems in time and space. While the OPFOR fought each rotation differently, the BISE gained a greater appreciation of how the enemy would likely emplace its key systems in "The Box." Taking the data from the BISE, the brigade Geospatial-Intelligence section utilized its 12Y- and 35G-series Soldiers to conduct analysis and pull imagery on the locations most consistently identified in the historical data. This process resulted in a detailed understanding of the terrain and its associated mobility corridors and line-of-sight considerations. Leveraging this now more refined data, the Brigade S-2 and BISE Chief were then able to template enemy reconnaissance, maneuver, and support formations based on the likely presence and location of HPTL systems. Following this step, the Brigade S-2, BISE Chief, and Collection Manager built out the draft version of Annex L, Information Collection, identifying Named Areas of Interest and Target Areas of Interest based on the historical indicators and templated enemy disposition. As a result of these actions, the 1-2nd SBCT IWfF found itself with a relatively clear understanding of the OPFOR. Gaining insight on how the enemy would likely array itself utilizing terrain; and where to look for enemy detection, targeting, and determination of the OPFOR's course of action prior to arrival at NTC.

Systems Interoperability and Structure

To enable its targeting support, the IWfF recognized the importance of its intelligence architecture and its functionality to the overall success of the brigade. Following the completion of the brigade's MITS Tier III event in June of 2021, it became apparent to the IWfF leadership that the Intelligence and Electronic Warfare (IEW) section had the ability and expertise to manage the intelligence architecture and "push the envelope" on organic intelligence system capabilities. Based on this evaluation, the Brigade S-2 made the determination that the BISE—and specifically all targeting capabilities—would be primarily run off the Trojan Data Network-1 (TDN-1) instead of the typical Warfighter Information Network-Tactical/ Tactical Network Transport (WIN-T/TNT) backbone provided by the Brigade S-6.

During the brigade's training cycle and Command Post Exercise in October of 2021, the IEW section validated its ability to maintain connectivity within the BISE via TDN-1, providing dedicated bandwidth to the BISE's systems. Additionally, the IEW section demonstrated its ability to establish Upper Tactical Internet (T/I) connectivity more rapidly than the Brigade S-6, thus minimizing the time the BISE was down following Tactical Operations Center (TOC) jumps. Following numerous iterations of setting up the Trojan at both home station and NTC, the IEW section was able to consistently establish connectivity in under thirty minutes following site occupation, with its personal record being 22 minutes.

Based on this success, the Brigade S-2 and BISE Chief, in conjunction with the brigade Fire Support Officer and Targeting Officer, established a "strike cell" within the BISE to prosecute dynamic HPTL targets. Although established prior to NTC, the "strike cell"

underwent several adjustments to its layout during the rotation to maximize its capabilities and gain efficiencies. The cell contained analysts monitoring the following capabilities: full-motion video (FMV) from various aerial sensors; ground movement target indicators (GMTI); ELINT; and COMINT. Additionally, two all-source analysts provided fusion support to the processing, exploitation, and dissemination conducted in the cell. The FAIO, collocated, utilized the Joint Automated Deep Operations Coordination System to digitally pass targets to brigade Fires for processing. Based on the above personnel and capabilities, the "strike cell" possessed all of the required resources to internally execute both tipping and queuing of collection assets to confirm both deliberate and dynamic targets.

Other units throughout the Army have developed a similar "strike cell" capability in some form or fashion at the brigade level, which leverages necessary systems and capabilities for intelligence support to targeting. However, the importance and distinction of 1-2nd SBCT's use of the TDN-1 to provide the bandwidth backbone should not be discounted. Utilizing the systems fielded by the Army for its intended purpose, the *Ghost* IEW section provided dedicated bandwidth to the IWfF's targeting efforts. It maximized the amount of time the "strike cell" utilized Upper T/I, all the while not being reliant on the WIN-T/TNT structure being utilized by the rest of the brigade TOC. In the ever-evolving, communication-degraded environment that characterizes large-scale combat operations (LSCO), the ability to provide multiple avenues to Upper T/I capabilities must be aggressively maintained.

Trust the Process

With a firm understanding of the OPFOR and an established intelligence architecture to ensure system functionality, the *Ghost* IWfF now faced the not-so-simple task of executing its support to targeting during NTC 22-03. The IWfF quickly found out that due to its work prior to arriving at NTC, it met overwhelming success, but not in a good way. Combined with its detailed research on the terrain and OPFOR, the IEW section's network success allowed the IWfF analysts access to additional capabilities and simulation feeds that most rotational units are not able to utilize due to system inoperability. The resulting cascade of data quickly overwhelmed the BISE and "strike cell," resulting in target saturation and an inability to rapidly prioritize targets based on importance.

As the rotation developed, the brigade Fire Support Officer (FSO), Targeting Officer, and S-2 made deliberate choices to help tailor the targeting process and better synchronize deep shaping effects. One of the first decisions made was to reduce the number of brigade HPTL categories, cutting the number from five to three. This decision enabled both the "strike cell" and the FSE to better manage which targets needed to be serviced by the brigade's organic M777s and which needed to be routed to division for echelon above brigade prosecution. Targets that need to meet the selection standard of this truncated HPTL were "pocketed" by the FAIO and BISE Chief. As organic indirect systems became available, the BISE Chief revalidated the viability of these targets and passed to the FAIO as applicable. Although the brigade made use of its organic indirect systems, to include 120 mm mortars, to shape the battlefield, the staff also quickly realized that it would be necessary to fully leverage all additional assets to shape in support of the close fight.

While the brigade conducted its standard battle rhythm Target Working Group (TWG) in accordance with doctrine and the Air Tasking Order cycle, the staff quickly determined that the dynamic nature of the fight required additional synchronization closer to delivery execution. As a result, the key members of the TWG made the decision that an additional, impromptu TWG would be required prior to any close air support (CAS) platform checking in on station. Usually occurring approximately 30 minutes prior to CAS arrival, the S-2 section provided an updated Integrated Air Defense Systems (IADS) situation update to the supporting Joint Terminal Attack Controllers (JTACs) located in the brigade TOC, as well as a list of HPTL targets and their most recent locations based on single-source intelligence. The brigade FSO and S-2 then helped prioritize these targets with the JTACs based on existing battlefield geometry, the approved HPTL, and the current operating picture. This communication allowed the JTACs to better understand the current brigade efforts and priorities, and communicate with the supporting Air Force pilots. Contracts made pre-rotation with the A-10 Fighter

Squadron fell in line with this prioritization effort. They enabled the pilots to maximize survivability and neutralize the OPFOR IADS while at the same time staking and prosecuting targets throughout their station time to ensure the expenditure of all available munitions.

Additionally, the brigade became much more deliberate in its use of Army Attack Aviation (AAA) throughout the course of the rotation. Instead of utilizing the AH-64s in a reactionary role, the TWG worked to incorporate AAA in a deliberate manner to conduct deep attacks. Utilizing predictive analysis and its ability to detect OPFOR HPTL signatures, the IWfF could provide an accurate IADS threat picture to the Apache pilots, as well as the composition and disposition of the targets. By packaging AAA with various forms of Suppression of Enemy Air Defense, the brigade experienced success by the end of the rotation in utilizing the IWfF to provide predictive analysis to enable AAA to prosecute OPFOR mechanized formations. While better aligned to the overall targeting process, this deliberate manner provided benefits to the aviators, as they were able to better prepare for their missions and target sets.

Way Forward

NTC 22-03 offered the 1-2nd SBCT IWfF the ability to clearly see itself, its capabilities, and areas for further improvement and refinement in intelligence support to targeting. Correctly functioning intelligence architecture and access to SIPR-based platforms can quickly produce large amounts of data that can rapidly outpace the analytical capacity of a BCT-level BISE. Time is at a premium, and the rapid nature of LSCO makes information irrelevant within moments of receipt.

While targeting doctrine and the associated cycle provide a clear framework for intelligence support and input, it is clear that future systems and the operating environment can rapidly outpace decision making. A BCT-level IWfF with access to functional systems can detect and decipher enemy actions via sensors ranging from cavalry scouts to NT platforms. As a result, it is imperative that BCTs effectively resource, prioritize, and enable multiple delivery platforms to synchronize effects deep in the battlespace to enable the combining of arms in the close fight.

MAJ Christian Garner recently completed his Key Developmental time as "Ghost 2" for 1-2nd SBCT at Joint Base Lewis-McChord (JBLM). He is now serving as the brigade Deputy Commanding Officer for the 201st Military Intelligence Brigade, JBLM.

CW2 Christian Wanamaker has spent the past three years serving in 1-2nd SBCT. Having spent time as both the BISE Chief and Collection Manager, he is now helping to establish the 3rd Multi-Domain Task Force in Hawaii.

WO1 Mario Wright recently completed his first year in 1-2nd SBCT, serving as the BISE Chief for NTC 22-03; he is now the brigade Collection Manager and looks forward to codifying all of the hard-fought lessons learned from the previous year's training.

U.S. Army M1126 Strykers assigned to 1st Stryker Brigade Combat Team, 25th Infantry Division, Fort Wainwright, Alaska, maneuver through the desert terrain towards an objective during Decisive Action Rotation 19-04 at the National Training Center (NTC), Fort Irwin, California, Feb. 9, 2019. Decisive Action Rotations at NTC ensures Army Brigade Combat Teams remain versatile, responsive, and consistently available for current and future contingencies. *(U.S. Army photo by PVT Brooke Davis, Operations Group, National Training Center)*

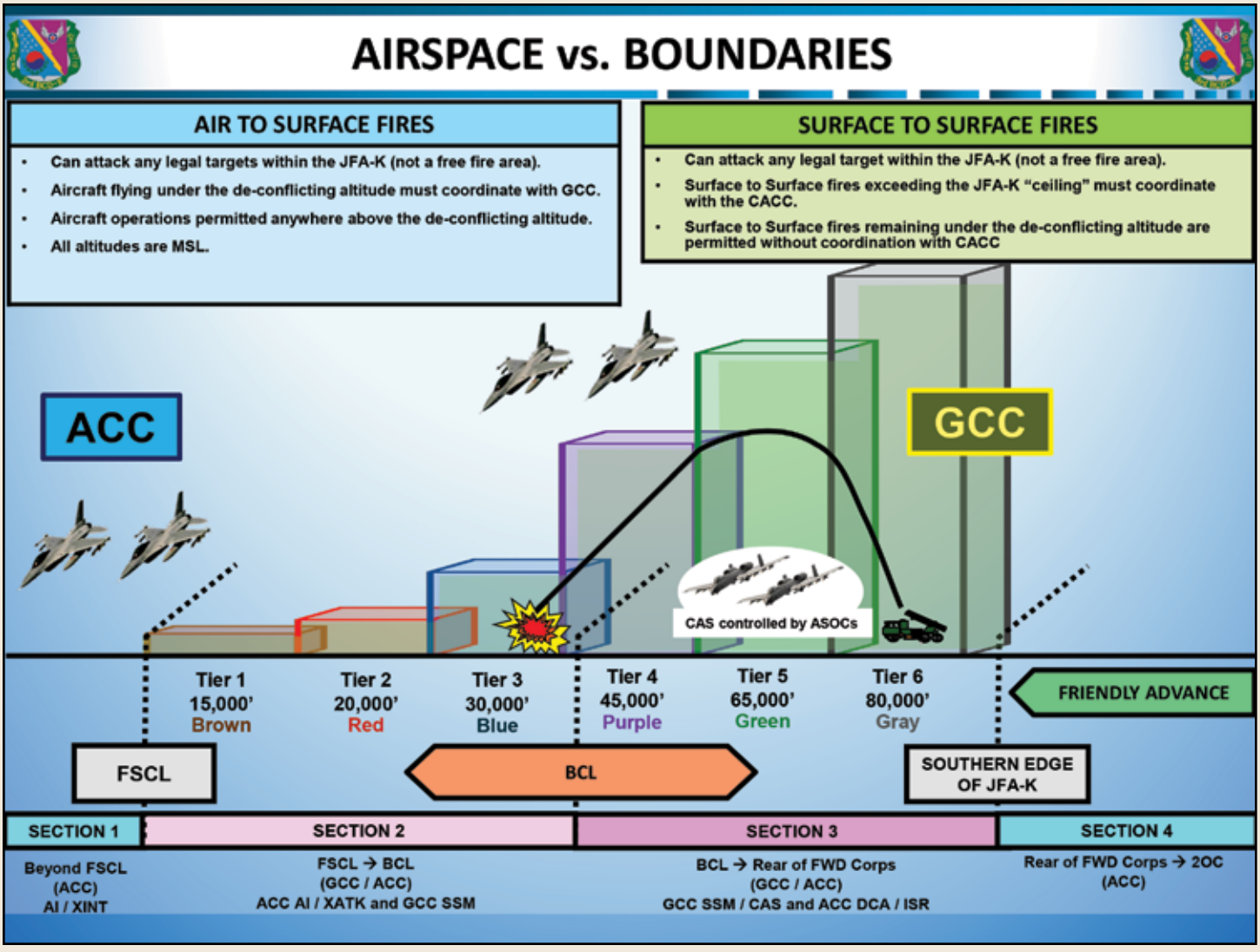
Managing Theater Airspace and Joint Fires in the Korean Theater of Operations

3rd Battlefield Coordination Detachment – Airspace

By SSG Cody Grady, SSG Joshua Hasting, and CW3 Jerid Hitchens

Airspace Command and Control (AC2) is a critical part of large-scale combat operations. The Korean Theater of Operations (KTO) has a uniquely high density of surface-to-surface Fires and aircraft in a relatively confined space. The adage "big sky, little bullet" is more accurately stated, "small sky, many bullets." It illustrates the complexity of airspace management in an area of operations that is only 150 miles wide. Given this density, the integration of airspace coordination measure requests (ACMREQs) – any request for an airspace coordination measure (ACM), fire support coordination measure (FSCM), or maneuver control measure – into the Airspace Control Order (ACO) challenges airspace managers across components. The 3rd Battlefield Coordination Detachment – Korea (3BCD-K) Airspace Section and the 607th Combat Plans Division Airspace Management Team (CPD AMT) pursued the most efficient and effective methods to ensure that the airspace available in the KTO safely reaches its maximum potential. Those recommended changes to airspace management procedures in Combined Forces Command (CFC) Publication 3-2.1 *Air Ground Operations*, November 2019, are currently under review at CFC.

Figure 1. Joint Fires Area – Korea, JFA-K Concept



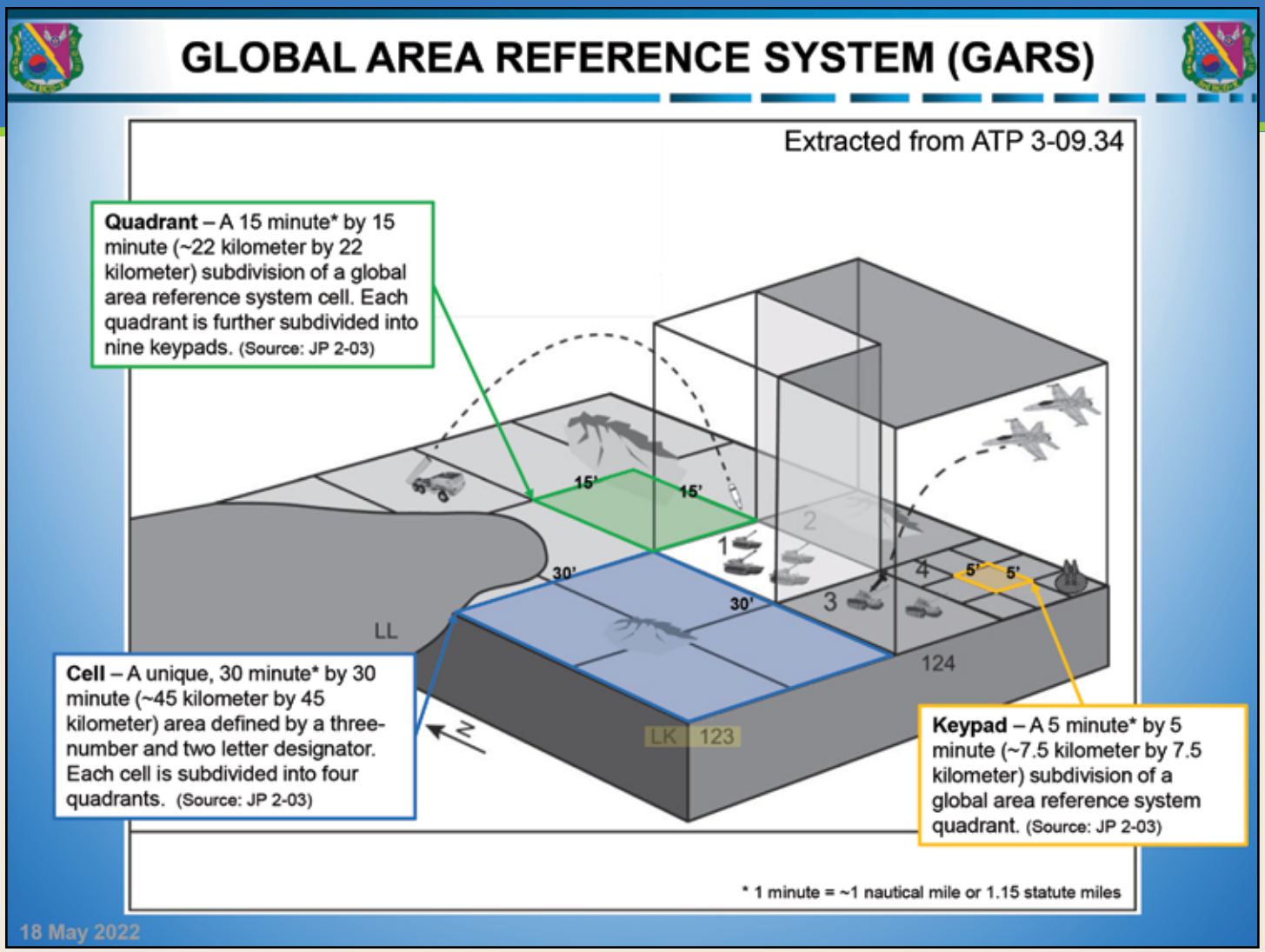


Figure 2. Depiction of GARS Quadrant, Cell, and Keypad

CFC Publication 3-1 defines a Joint Fires Area – Korea (JFA-K) as a "Three-dimensional FSCM, used to deconflict air and other assets, maximizing Joint Fires." JFA-Ks maximize the integration of Joint Fires by allowing the Ground Component Command (GCC) to employ Fires beneath the specified altitude tier and enabling aircraft to fly above, mitigating the risk of fratricide. The GCC requests JFA-Ks in the area between the Fire Support Coordination Line and the rear area of the forward Corps.

JFA-Ks operate in six different tiers of altitude similar to a Coordinating Altitude but limited to specific Grid Area Reference Systems (GARS) Boxes: cell, quadrant, or keypad. They process requests to the CFC through the Republic of Korea 3BCD-K Airspace Section via the Joint Automated Deep Operations System (JADOCS). Once approved, the JADOCS transmits the JFA-K to the 3BCD-K Tactical Airspace Integration System (TAIS) for distribution to subordinate echelons. This processing time may vary drastically based on the volume of air traffic inside the requested airspace, but it previously lasted upwards of 50 minutes to complete. Using the preplanned AMCREQs and refinement of the immediate ACMREQ process, the 3BCD-K reduced the technical coordination and processing time to an average of six minutes.

Preplanned ACMREQs/Fires Request

Preplanned requests are ACMREQs submitted to the CPD AMT no later than 15 hours the day before the commencement of the applicable ACO. Preplanned requests are essential to the airspace development process because they ensure each AC2 element screens the ACMREQs for completeness and correctness before review by

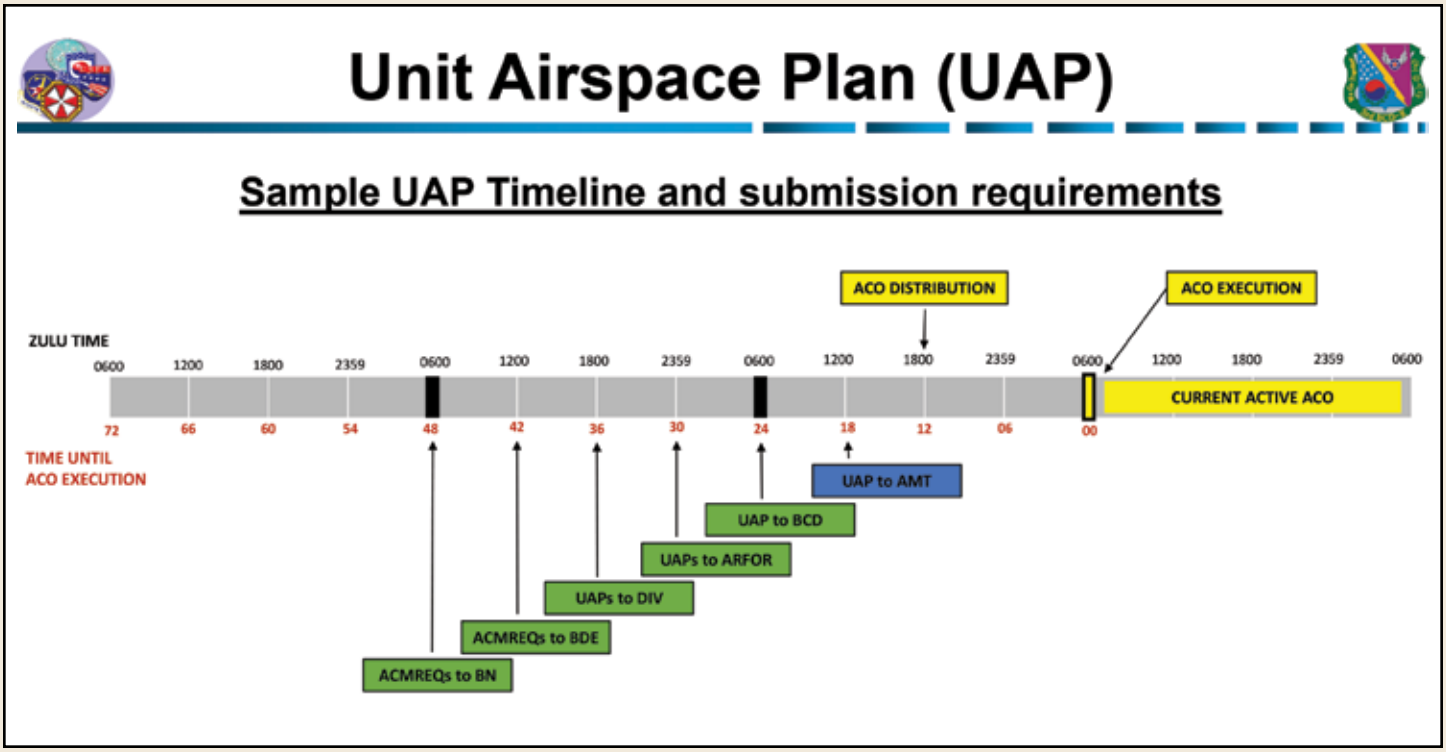


Figure 3. Sample UAP Timeline and submission requirements

the CPD AMT. Preplanned requests allow the CPD AMT to identify conflicts with preexisting ACMREQs or requests between components and enable them to balance and maximize the use of airspace.

Suppose the 3BCD-K Airspace team receives a Unit Airspace Plan (UAP) after the preplanned submission suspense. In that case, they must coordinate the ACMREQs with the 607th Combat Operations Division Airspace Management Team (COD AMT) to process the following ACO change. Changes to the ACO may require deconfliction with existing ACMs, increasing the likelihood of processing delays or modifications to the request. Over the last three Combined Command Post Training exercises, enforcing the timely submission of UAPs submitted to the CPD AMT for inclusion in the next ACO enabled the 3BCD-K Airspace Section to work more closely with the COD AMT. The shift in focus from processing unplanned requests to developing ACO changes enabled the Air Operations Center (AOC) to achieve military deconfliction (MILDECON) in an average of five minutes or less.

ACO Change Request

Currently, an immediate ACMREQ falls into two categories: a preplanned request that did not meet the 15-hour preplanned cutoff for inclusion on the next ACO or a request requiring processing and activation within minutes. The current draft of CFC Publication 3-2.1 is under review and defines an ACO change as any immediate requests the AOC receives within 15 hours of the corresponding ACO/Air Tasking Order execution cycle, but more than three hours from execution time for the connected mission. The 3BCD-K Airspace recommended this change to reduce confusion from different utilizations of the term "immediate ACMREQ." By differentiating the terminology, this change in the CFC Publication mitigates confusion and clarifies requirements. AC2 elements at each echelon screen ACMREQs submitted for accuracy,

completeness, and deconfliction to minimize risk and processing time. The 3BCD-K Airspace team processes ACMREQs and submits them to COD AMT for inclusion in the next ACO change. Once approved, ACO changes allow the requesting units to execute preplanned missions without the need for manual deconfliction with the Command and Control Duty Officer (C2DO) or Tactical Command and Control (TAC C2).

Immediate ACMREQs

The current process for immediate ACMREQs – artillery is the most common request – involves units sending the request through 3BCD-K to the C2DO. The C2DO then forwards the request to the appropriate TAC C2 element based on the fire mission's location data. Upon MILDECON, the information travels along the same chain back to the unit. Immediate requests that utilized this sequence took upwards of 10 minutes or more to MILDECON. It is common to see upwards of 2000 immediate requests for a two-week exercise. To mitigate the processing delay, 3BCD-K and the COD AMT determined the most efficient way going forward is for the requesting unit (no echelon lower than brigade) to transmit requests directly to the TAC C2 with C2DO oversight. The recommended CFC Publication 3-2.1 change now defines immediate ACMREQs as any requested mission within three hours of execution. Units submit these requests through tactical chat directly to C2DO and TAC C2. This decentralization dramatically reduces the time necessary to achieve MILDECON by removing unnecessary nodes along the request process. Throughout this process, the 3BCD-K monitors the immediate requests enabling them to arbitrate conflicts instead of processing requests.

Conclusion

Airspace management in the KTO is a complex process between multiple components. For the last year and a half, the airspace managers across the KTO have taken great strides in improving the timeliness and effective utilization of the limited available airspace. The updates to CFC Publication 3-2.1 and airspace management standard operating procedures will enhance coordination and shared understanding of the air picture. Along with these changes, 3BCD-K implemented a semi-annual Airspace Working Group which allows airspace managers across the KTO to maintain a shared understanding of procedures, develop operators at each echelon on TAIS operations, and discuss ways to manage airspace together with the AMT. Another training opportunity is the Eighth Army weekly Digital Sustainment Training, enabling major subordinate commands to participate in scenarios and allow airspace managers to maintain proficiency in their battle drills and validate TAIS connectivity across the KTO. In conjunction with continued coordination and review of our procedures, these training events will ensure the theater is ready to "fight tonight and win."

SSG Cody Grady is a 15Q (Air Traffic Controller) born and raised in South Bend, Indiana. He enlisted in April 2016 and is a recipient of both the Honorable Order of St. Barbara and the Honorable Order of St. Michael. SSG Grady currently serves at the 3rd Battlefield Detachment-Korea as an airspace noncommissioned officer and has served in additional airspace positions to include the 101st Division Joint Air Ground Integration Cell. A large contribution of his time at 3BCD-K has been directly related to improving the Field Artillery Airspace Request processes and coordination with the Air Component Command.

SSG Joshua Hasting is also a 15Q from Provo, Utah. He enlisted in July 2013 and is a recipient of both the Honorable Order of St. Barbara and the Honorable Order of St. Michael. SSG Hasting currently serves at the 3rd Battlefield Detachment-Korea as the Airspace noncommissioned officer in charge and has served in Tactical Air Traffic Control units leading up to his time at 3BCD-K. A large contribution of his time at 3BCD-K has been directly related to improving the Field Artillery Airspace Clearance processes and procedures of the Air Component Command.

CW3 Jerid Hitchens is the 3rd Battlefield Coordination Detachment Airspace Management Technician and section officer in charge. He is from California and is on his 20th year of active-duty service, with over half of that time in Korea. He is an Order of St. Michael recipient for his service to the Aviation community and a candidate for the order of St. Barbara. He is directly responsible for the improved processes of Immediate Fires Requests from Ground Component to the Air Component in the KTO and continuously works to improve all aspects of the Air-Ground Operations at all echelons of airspace management.


AIRBORNE

PFC Jolene Harvey, a cannon crewmember with A Battery, 3rd Battalion, 320th Field Artillery Regiment, 3rd Brigade Combat Team, 101st Airborne Division (Air Assault), receives a 105 mm round during a direct fire live-fire on a range at Fort Knox, Kentucky, April 25, 2022. The purpose of this training is to execute a decentralized division training density from dispersed field environments in order to enhance readiness, while stressing communications and sustainment systems across extended distances. *(U.S. Army photo by SSG Michael Eaddy)*

1-9th FA Holistic Readiness Approach to New Equipment Fielding and Training

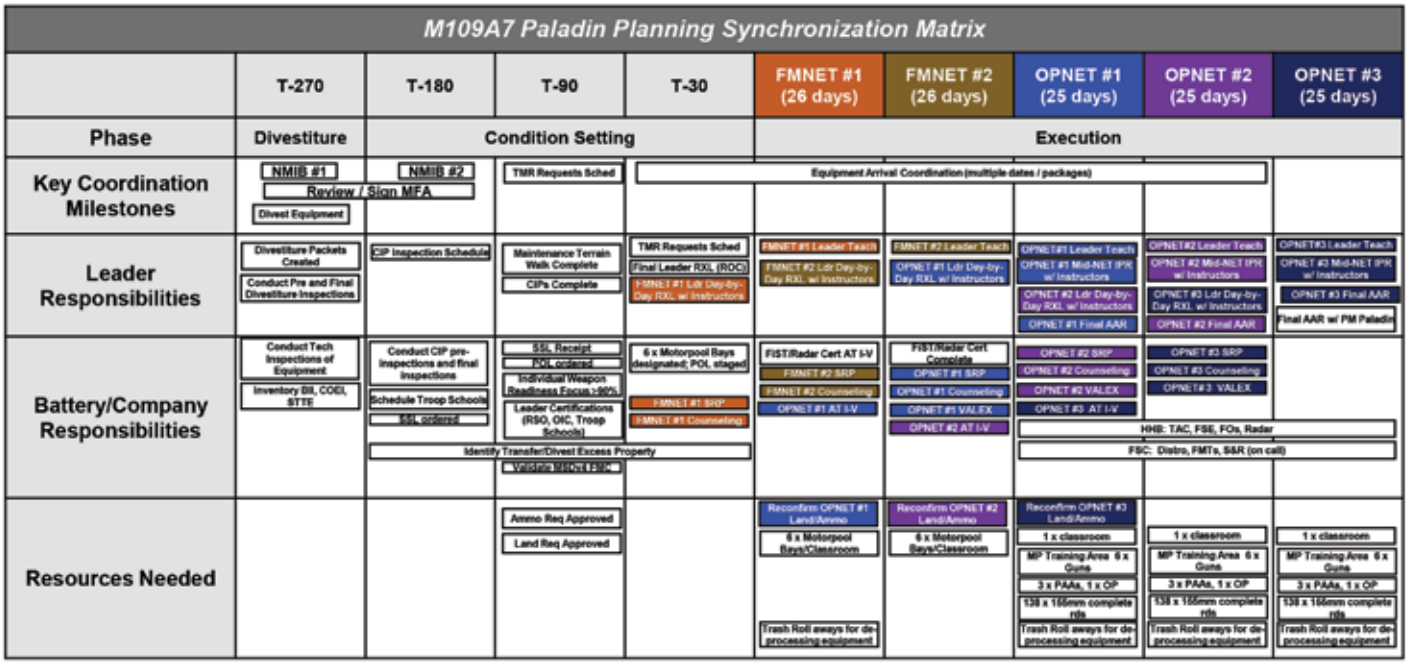
By LTC Joe Handke, MAJ Philip Devera, and CPT Sarrah Hulsey

The recent completion of the M109A7/M992A3 Field Maintenance New Equipment Training (FMNET) and the Operator New Equipment Training (OPNET) by 1st Battalion, 9th Field Artillery (1-9th FA), 2nd Armored Brigade Combat Team, 3rd Infantry Division (3ID) proved - an approach that leverages FMNET/OPNET as a holistic readiness mechanism, and can result in a successful modernization that not only maintains, but improves readiness and deployability across the formation. As the sixth artillery battalion to field the Army's new M109A7 self-propelled Howitzer and M992A3 Field Artillery ammunition support vehicle, 1-9th FA took a deliberate, phased approach to operationalize the battalion's modernization plan, focusing on certifying organizational systems and processes prior to NET, setting conditions in Training, Personnel, Maintenance, and Equipment before training, and emphasizing the importance of leadership presence and iterative rehearsals throughout each training period. This approach ultimately resulted in a successful modernization completed on time with no loss of training days in a COVID-19 contested training environment and enabled the battalion to conduct simultaneous requirements and seamlessly continue along its training glide path immediately upon completion of OPNET.

Our Approach

The battalion's planning approach began nine months before receipt of new equipment when the unit was forward deployed in support of Operation Atlantic Resolve in the United States European Command's area of responsibility. Our initial New Materiel Information Brief (NMIB) with the Program Management (PM) Paladin team was the catalyst for our planning process, allowing the command to begin developing relationships and contacts, understand responsibilities and requirements, and gather best practices from previous equipment fielding. The Materiel Fielding Agreement outlined the specified tasks for the battalion and provided our organization

Figure 1: M109A7 Paladin Planning Synchronization Matrix



Definitions: NMIB New Materiel Information Brief. MFA: Materiel Fielding Agreement.
TMR: Transportation Movement Requests. SSL: Shop Stock Listing. MSD: Maintenance Support Device.

with the structure needed to develop a plan. Ultimately, we designed our operational approach in three well-defined phases with sequenced tasks and prerequisites: legacy equipment divestiture, condition setting, and execution of NET *(see Figure 1: M109A7 Paladin Planning Synchronization Matrix).*

Divestiture

Up front, we acknowledge that the divestiture timeline for each battalion is different, depending on operational and training timelines. For the 1-9th FA, our divestiture began in October 2020 as the battalion was planning redeployment from Europe. The battalion received disposition instructions directing the battalion to divest the equipment in Germany during redeployment operations. Establishing communication early and often between our division modernization lead in the 3ID G3 back at Fort Stewart and the Army's M109A6 Fleet Manager at the Anniston Army Depot was critical to gaining a clear understanding of our requirements within the disposition instructions. Specifically, it was imperative to understand the equipment common to the M109A, which we were required to retain for our upcoming new equipment fielding (Basic Issue Items [BII], Components of End Item [COEI], and Special Tools Test Equipment [STTE]) and the condition and technical standards of the equipment required for disposition.

We formalized our divestiture process at the battalion, led by the battalion Executive Officer (XO) and Master Gunner, by creating divestiture packets for each Howitzer and Field Artillery Ammunition Supply Vehicle. These packets included the disposition instructions, completed maintenance Technical Inspections (TI), lists for BII, COEI, and STTE to turn in, and the Weapon Record Data (DA Form 2408-4) for the Howitzers. Prior to the turn-in date, the battalion scheduled pre-inspections by the battalion XO and final inspections by the battalion command team using the packets to ensure the equipment turn-in was efficient and successful. Planning and preparation resulted in no issues during turn-in, and our Howitzers were divested and shipped from Bremerhaven Seaport of Embarkation straight to Anniston Army Depot.

Condition Setting

When the staff began planning for modernization in Europe, a plan which we named *Operation Genesis*, we realized that the battalion had several major requirements to complete to set conditions for a successful Howitzer fielding. These included a redeployment of the formation in a COVID-contested environment, reconsolidation of the battalion's rear-detachment and attached fire supporters, revalidating command programs and completion of command inspection programs, ordering Petroleum/Oil/Lubricants (POL) and Shop Stock Listing (SSL) for NET, turn-in excess equipment, validate our motor pool and maintenance program in garrison, and reserve land and ammo required for each FMNET and OPNET iteration. Below, this article will review the major categories of condition settings that enabled our battalion throughout NET/new equipment fielding (NEF).

Condition Setting – Maintenance

Maintenance conditioning setting was a key aspect and one of the most time-intensive condition setting tasks we undertook. Internally, the battalion scheduled a Division Maintenance Terrain Walk and several pre-inspections, which allowed us to ensure our facilities and systems complied with Army and division standards before entering modernization. It was also a great mechanism to identify excess equipment and review our maintenance standard operating procedures to ensure they fully comply with the requirements of our new equipment. After ensuring that the maintenance enterprise was able to order parts for the new M109A7 through Global Combat Support System (GCSS)-Army, we began ordering our new SSL in GCSS-Army. This step must be completed prior to receiving any M109A7/M992A3 to ensure that the requisition request for parts is funded through ZPARK properly, especially depending on where modernization falls throughout the fiscal year.

A key lesson learned was not to order the entire SSL at one time. Ordering the entire SSL generated over 300 lines of the Overaged Reparable Item List (ORIL), and all our SSL came at the same time to the Supply Support Activity (SSA). That situation required us to turn in over 300 lines of ORILs while receiving new parts from the SSA. Most SSAs in the Army can only process 10-15 lines of ORILs a week, and it took our battalion approximately five months to turn in over 300 lines of ORILs. A recommendation for future iterations is to manage the release of ordering SSLs based on ORIL turn-in throughput.

Another maintenance lesson learned was to ensure that the gaining unit has the Maintenance Support Device (MSD) version 4 for compatibility with the M109A7/M992A3 and that MSDv3s are fully mission-capable and ready for divestiture.

Lastly, the Material Fielding Agreement (MFA) requires very specific requirements for FMNET, including a requirement for 6x vehicle bays, an overhead lift, a classroom, and motor pool space for 2x 20 foot MILVANs, and pre-positioned POL. We ordered our POL at approximately T-120 and had it on hand months before receiving our first vehicle. At T-30, we prepared and reserved an entire section of our motor bays (six total) with a 25K overhead lift. Attached to that bay was a large room we converted into a classroom capable of seating 20 Soldiers in training and instructors. Having the classroom in the bay helped with transitions from classroom portion to hands-on during FMNET.

Condition Setting – Rehearsals

We used the MFA between the Project Manager Self-Propelled Howitzer System (PM-SPHS) and our battalion as the source to identify specific and implied tasks and the NMIB to conduct azimuth checks and present requests for information to the PM-SPHS. At approximately T-45, we began conducting rehearsal of concept drills for equipment reception, both by rail and Commercial Line Haul, and had pre-designated convoy commanders, HMMWV convoy escorts, crossing guards, validated routes, and maintenance support. Equipment may arrive outside anticipated schedules, and we found that having teams on standby that were already trained and rehearsed made it very seamless to receive equipment on short notice, even on the weekends.

One week prior to each major training event (FMNET, OPNET), we conducted a tabletop exercise with the PM Paladin team, staff, and every company/battery leader from section chief to commander in the room, using a day-by-day synchronization matrix to align personnel, activities, and resources providing a predictable snapshot of activities in space and time. It was a good forum to flatten communications and to create shared understanding down to the first line supervisor on the expectations from the command on training accountability, leader involvement, and synchronization of support efforts. For OPNETs, we also conducted a mid-NET synch before the batteries deployed to the field for the final 10 days of NET that occur entirely in the field (driver's training, Artillery Tables I-IV, and the Table V dry and Table VI live-fire portions).

Condition Setting – Resourcing and Validation Exercises

Securing training areas, ammunition, and developing the range scenarios in accordance with installation range control guidance and the NET schedule was a critical aspect of setting conditions for successful training and required forecasting out at T-120. Our battalion Master Gunner, Digital Master Gunner, battalion Fire Direction Center (BN FDC), and S6 identified training areas for OPNET to ensure digital and voice communications were effective between the OP, platoon FDCs, and the gun line and could support driver's training. Ideally, the same training areas would be used in all three OPNETs. However, due to training constraints, our battalion had to use a different set of training areas on OPNET #3. A best practice is to identify several training areas that can support driver's training, live-fire training and conduct a validation exercise between the fire supporters/radars, the BN FDC, and the platoon FDCs before NET to ensure communication capability. By the time that we began OPNET, we had already validated digital/voice communication, on-hand equipment readiness, and had processed fire missions with "ghost guns" from our future Position Areas for Artillery to targets within our impact area safety box.

Condition Setting – Personnel Readiness

Another key aspect of our preparation for NET/NEF was that we treated the process like a deployment since a stipulation in the MFA was that each Soldier would be dropped from training if they missed more than four hours of training. To mitigate medical/personnel training distractors, we ensured each Soldier participating in NET was assigned a stabilization code of "W" in the personnel system of record, that each battery/company attained a 90% individual and crew-served qualification rating, completed the required troop schools, completed a battalion-internal Soldier Readiness Program (SRP) to update all personnel and medical readiness requirements, validated and processed security clearances for all personnel, and if necessary, validated their Family Care Plans. Finally, every Soldier participating in

NET was counseled in writing following validation of their SRP completion on their requirements for attendance and place of duty throughout the training.

Execution

We began FMNET #1 in August 2021, five months after we began *Operation Genesis*; the battalion was ready and eager to train on the new equipment. Leader involvement from the beginning had an immediate and lasting impact on our NET. There is no doubt that when leaders are at the point of friction, they can make decisions and take action to ensure mission success. Our mantra was "Leaders with the Led." That was the expectation, regardless if they were in the training audience. The PM Paladin trainers were very supportive of leadership above the required training audience being present for training. If there is a single factor that led to our successful NET/NEF, it was without question engaged and present leaders.

Daily engagements with the PM-SPHS instructors were also key to maintaining the momentum going forward. FMNET/OPNET operates in a condensed timeline where every training event is scripted to ensure training objectives are met within the allocated time and standards; therefore, it is critically important to execute as planned.

We conducted two FMNETs to train our 91Ps and our maintenance leaders and three OPNETs to train and qualify our Howitzer crews between August 2021 and February 2022. Although NETs training audience is the 91Ps and 13Bs, it is really a battalion effort that includes all elements of the Fires enterprise, our sustainers, maintainers, and staff. By all measures, it was a success. We fired 414 High Explosive rounds safely, no training time was lost due to personnel or resource shortcomings, our maintainers were on-site to provide maintenance support, and our personnel had a sense of purpose and ownership. The synchronization matrix in Figure 1 shows the coordinated efforts required during each NET transition to ensure that our battalion stayed forward-focused throughout NET. The PM Paladin trainers are phenomenal and will give your Soldiers world-class instruction, but they are not responsible for synchronizing, resourcing, and validating your battalion's training plan. Moreover, leaders must continuously stay engaged and fight the threat of complacency. We used every opportunity during OPNET to build field craft, reinforce the 8-step training model, and develop good training habits. Specifically, we focused on daily priorities of work, uniform standards throughout field problems, and rehearsals to standards, especially Artillery Table V (dry fire) with the entire Fires enterprise from observer to shooter. Over three OPNETs we became a better organization each time we trained.

Conclusion

Command and leader emphasis from the first NMIB to the final after action review was the key to success for 1-9th FA's M109A7/M992A3 modernization efforts. While no operation is 100% executed as planned, understanding requirements, identifying friction points before they become issues, and creating shared understanding throughout the formation, early and often, worked for our battalion. The results speak for themselves. Throughout two FMNETs and three OPNETs over six months (during both Delta variant and Omicron COVID surges), our battalion only had two Soldiers that had to be recycled due to unforeseen medical circumstances. We had no loss of training days and found efficiencies within the schedule. We kept all 18 Paladins operational during NET, despite unscheduled maintenance conducted during our field problems, thanks to our dedicated and well-trained Paladin maintainers.

For those battalions approaching their modernization, we hope that this article is helpful in your planning efforts and helps as you prepare to receive this incredible new equipment. The enhanced capabilities and lethality of the M109A7 SPHS, matched with the dedication and esprit de corps that a successful NET, planned and executed using a holistic approach, creates in a formation, will give any Field Artillery battalion the edge needed to fight and win against our Nation's enemies.

Battlekings - Keep the Fire!

LTC Joe Handke is the battalion commander for the 1st Battalion, 9th Field Artillery, 2nd Armored Brigade Combat Team (ABCT), 3rd Infantry Division. He has served in assignments from Platoon to Theater Army level in the 25th Infantry Division, 1st Cavalry Division, and U.S. Army South.

MAJ Philip Devera is the executive officer for the 1-9th FA, 2nd ABCT. His last assignment includes Division Artillery Effects Officer, an instructor at the Field Artillery Captain Career Course, and as an Observer, Coach, or Trainer at the National Training Center.

CPT Sarrah Hulsey is the 1-9th FA S4. Her last assignment includes Company Fire Support Officer and a Platoon Leader.

Beyond the Wheel:

The need for an Intelligent Counterfire Visualization Application

By CPT Andrew Shaughnessy

Pattern analysis in support of counterfire is currently an analog and subjective process. While the Army has a suite of geospatial software available, it is not currently fielded to support pattern analysis to inform counterfire planning. To remedy this, the Fires community needs to invest in a dedicated Counterfire Visualization Application. Creating an application designed to plot counterfire radar acquisitions over a digital Fires Modified Combined Obstacles Overlay (MCOO) would serve to visually display trends in adversary firing behavior. With most indirect fire (IDF) assets limited to certain terrain, a digital MCOO would highlight viable enemy firing points. This visualization, combined with plotted radar acquisitions over time, could be a powerful tool to assist in the positioning of radars, radar zones, and firing units in support of the counterfire fight. Rather than relying on pure intuition, the counterfire officer would be able to leverage a clear visualization of patterns and trends superimposed over the limitations of geography. This would facilitate more accurate radar zones, more deliberate friendly firing unit positioning, and ultimately more effective counterfire against enemy IDF assets. As this application evolves, it could eventually feature a machine learning component that assesses patterns in enemy firing points and behavior, predicting likely future firing points. This application would both modernize pattern analysis and facilitate the transition to predictive analysis in support of targeting adversary IDF assets.

Problem: Absence of tools to assist in counterfire pattern analysis

Despite the critical significance of counterfire to large-scale combat operations (LSCO), there are no tools designed to assist counterfire officers in visualizing, tracking, and predicting trends in enemy IDF. Current approaches are largely analog, cumbersome, and fail to leverage the abundance of modern digital tools.

Field Artillery (FA) Weapons Locating Radars (WLR) are used to detect the Points of Origin (POO) and Points of Impact (POI) of hostile IDF systems. Fires planners will designate radar zones as a means to prioritize WLR sectors of search by importance. A Call for Fire Zone (CFFZ) is a radar zone where WLRs scan for enemy artillery POOs to detect and target. CFFZs are designated over areas that the counterfire officer has assessed as the most likely enemy firing points. Accurate CFFZs facilitate vastly more effective and timelier counterfire missions.

The counterfire officer determines enemy firing points by assessing the enemy's most likely targets, weapon system ranges, historic Tactics, Techniques and Procedures (TTPs), Forward Line of Own Troops, and terrain. As it currently stands, there are no specialty systems, software, or even doctrinal best practices to assist in this process. IDF received is tracked either on analog products like whiteboards or on Excel spreadsheets. As the WLR picks up acquisitions, counterfire officers will often plot POOs and POIs and track the density of IDF received over time to

try and discern patterns. These are also tracked on a spreadsheet or on a pattern analysis wheel (non-doctrinal) that has circulated throughout the counterfire community. Counterfire sections will have an Advanced Field Artillery Tactical Data System (AFATDS) computer, but it is limited to showing where recent acquisitions plot on a standard military map.

While the pattern analysis tracking wheels can help show trends as to when friendly forces receive IDF, they do not display enough data to draw useful conclusions. At best, a counterfire officer can intuit that the enemy likes to employ IDF most at a certain time of day. This may offer some small insight into enemy TTPs, especially in a counterinsurgency environment, but offer little for an LSCO scenario where an adversary's IDF is correlated with larger operations. At the vanguard of best practices, the counterfire officer would maintain a wheel like this and an overlay or series of overlays showing POOs/POIs over time, superimposed on a map or AFATDS. This would facilitate a greater degree of analysis but is cumbersome to maintain and still falls short of what is possible in the digital age.

These techniques only offer to show past trends in enemy IDF behavior. To intuit likely scenarios moving forward, a counterfire officer would need tools like an MCOO to understand what is possible later in the battle. An MCOO is a map or overlay that shows how the terrain affects mobility. For example, if significant swaths of terrain are impassible, the MCOO would highlight that allowing a planner to easily visualize viable mobility corridors. With most large IDF assets being constrained to only traveling on and firing from certain terrain, an MCOO often offers a visualization of what is possible in terms of artillery employment. In the best-case status quo scenario, a counterfire officer would have an accurate MCOO, built on assumptions based on the mobility of friendly artillery systems, and use that map to plot historic POOs/POIs. This is currently viable but is contingent on the counterfire officer having a physical MCOO copy for the Area of Operations (AO) and then still requires a cumbersome set of overlays to be useful. Ultimately, these techniques fall far short of the visualization and analytic tools that exist in the modern age. Given the criticality of the counterfire fight, this is unacceptable.

Solution: Create a Counterfire Visualization Application

There needs to be a dedicated software or application to assist counterfire officers in visualizing enemy IDF patterns and performing the predictive analysis to select effective CFFZs. If this software were compatible with Windows, it could plausibly run in the background on the AFATDS laptop.

This software should pull an MCOO for the AO and allow the counterfire officer to digitally plot POOs/POIs. There is no shortage of existing military mapping software used by Army Geospatial Engineers ranging from Distributed Common Ground System-Army to Digital Topographic Support System-Light to various commercial Geographic Information System (GIS) software. This would likely just be a modification of or require imported data from one of these existing utilities. The MCOO visualization would offer insight into visualizing where possible enemy firing points could be. While the default visualization should be based on the known parameters and limitations of U.S. artillery platforms, this MCOO should be toggleable to offer customization based on the threat weapon systems being employed. This map would essentially shade open areas within terrain gradient limits, not affected by hydrology, excess vegetation, etc., and capable of serving as firing points. Furthermore, the counterfire officer should be able to identify where the enemy is likely to target, draw

reverse range rings based on enemy weapons platforms, and then highlight the viable firing areas within that arc. This would serve to identify the most likely firing points to be used by the enemy and serve as a useful planning factor for establishing initial CFFZs. This feature alone would offer significant value added to the counterfire process by giving the counterfire officer an easy visualization of where likely enemy POOs are going to emerge.

As the WLRs pick up acquisitions, the counterfire officer should be able to input the acquisition data into this system. This would include acquired POOs, POIs, time, and identified weapon system characteristics. Inputting this data would then plot the POOs and POIs over the digital MCOO. POOs could be color-coded to show how long since they were input into the system, such as dark red to show enemy POOs acquired in the last hour, light red to show enemy POOs acquired in the last twenty-four hours, and grey to show all historic POOs. These points would be fully toggleable based on what the user wanted to see displayed. Selecting an individual POO or POI would provide a pop-up with the time stamp characteristics and connect the POO and POI with the Gun Target Line. In a best-case scenario, the POOs and POIs could be toggled on the map via a sliding scale as a means to assist in displaying temporal data. This would be an especially powerful visualization tool as the counterfire officer could drag the sliding scale and see the change in firing points and density of firing points over time. This should yield a general trend in the direction of movement, location, density, and firing intensity from which he or she could readily intuit where likely future firing points would be. This system would thus be providing the insight not to do merely pattern analysis but predictive analysis in anticipation of where future enemy firing points might be.

As acquisition data was collected, the system could report back information to inform the counterfire officer's running estimates. If the enemy was firing at a consistent average range, the counterfire officer should look to adjust their reverse range arcs accordingly. If the enemy was risk-averse in only using firing points of a certain size, such as large open fields, the counterfire officer may want to adjust their preferences over what is defined as a viable firing point. Toggleable features thus allow the counterfire officer to refine their working assumptions over time based on the measured acquisition data from their radars.

At higher echelons, the input of data from additional intelligence disciplines such as Signals Intelligence, Electronic Intelligence, and Measurement and Signature Intelligence could also feed the quality of this analysis. Limiting the data input to just time, location, and general accuracy of sensor information without additional technical data is desirable to avoid elevating this platform to prohibitive classifications. If this system were networked, operators at the brigade and above S2 cells could feed in any hits related to IDF platforms, with minimal reference to the sensor of origin, to support tactical counterfire analysis.

Machine Learning potential

While the initial iteration of this software should focus on being a visualization tool, later updates could incorporate Machine Learning (ML) to forecast likely enemy firing points. Data from Combat Training Centers could be used to train an underlying algorithm that predicts subsequent firing locations based on measured trends. While this would reflect U.S. TTPs and equipment, it would provide a starting point to train and refine the software. Eventually, the desired goal would be software that predicts future enemy firing points by assessing the TTPs of a specific enemy Fires unit.

As acquisitions are collected, they could be categorized by terrain, time, distance from targets, distance from previous acquisitions, distance from other firing units, etc. With enough data, this could inform how the enemy Fires formation aspires to fight by automatically measuring and answering a series of questions. What terrain does the enemy consider suitable for a firing point? What is the effective range of the munitions they have on hand based on how far they are firing? How far away do they like to position firing assets from targets? How frequently do they displace? How long after firing before they occupy and fire from a new position? How far away do they move to occupy subsequent firing locations?

Suppose this software could answer these and similar questions by analyzing the inputted POO/POI/Timestamp data. In that case, it is imaginable

that the behavior of an enemy Fires unit can be predicted. If the enemy consistently displaces within a certain time and distance after firing and is limited to firing from certain terrain, then the enemy's options for subsequent optimal firing points should be quite finite. So after a friendly WLR acquisition, this software should be able to identify and box in the enemy's most probable subsequent firing points. This information would inform refined CFFZs, could be used to guide other collection assets or Close Air Support to future locations, or even trigger unobserved Fires after a certain time on highly probable subsequent locations.

Without this software, counterfire based on radar acquisitions is inherently reactive. Modern artillery platforms are capable of quickly displacing, so it may not be feasible to counterfire quickly enough after an acquisition to affect those platforms. However, if subsequent locations could be predicted with some fidelity, counterfire artillery units could instead sit in a "Do Not Load" status on firing data targeting that location. These units could either fire unobserved after a certain amount of time or are positioned to fire immediately once a subsequent acquisition confirms that new location. Incorporating ML into counterfire analysis makes it more viable to target modern, highly mobile artillery platforms.

Furthermore, airspace clearance and deconfliction of Fires are often major chokepoints in the counterfire battle drill. Any foresight into future enemy firing points allows friendly units to begin clearing ground and air before that subsequent acquisition ever occurs. Even if these predictions are only vaguely accurate, they would still expedite counterfire by allowing much of the deconfliction battle drill to occur before the actual acquisition.

Two additional use cases for this software are also worth exploring. If it were networked across units and between echelons, this software could become the backbone of a counterfire Common Operating Picture. It could also plausibly be networked to communicate within the existing Fires architecture alongside the likes of AFATDS and Joint Automated Deep Operations Coordination System, giving other systems awareness of the real-time enemy Fires Situation Template. Furthermore, if this system were available to FA battalion operations staff, its terrain visualization features could also inform the selection of friendly Position Areas for Artillery.

Conclusion

Counterfire officers must be empowered with modern tools given the criticality of effective counterfire in LSCO. An intelligent counterfire visualization software would go a long way in improving the quality of the pattern and predictive analysis needed to effectively target enemy IDF systems. The Army's Fires stakeholders should fund the modification of existing geospatial engineering software to create this Fires MCOO. Alternatively, the Army should hire a third-party expert to create an ArcGIS App that performs this function and purchase additional ArcGIS licenses to scale it across the force. Achieving a Minimum Viable Product using either modified existing software or ArcGIS sets conditions to eventually explore Machine Learning-based counterfire analysis.

CPT Andrew Shaughnessy is a Field Artillery Officer currently serving as a Team Leader in 5th Security Force Assistance Brigade (SFAB). He has previously served as a Battalion Fire Direction Officer in 5th SFAB as well as a Platoon Fire Direction Officer, Platoon Leader, and Executive Officer in 3rd Brigade Combat Team, 101st Airborne Division (RAKKASAN). He commissioned out of Georgetown University in 2016.

References

1. Doctrinal References inform this article are FM 3-09 "Fire Support and Field Artillery Operations" April 2020, ATP 3-09.12 "Field Artillery Counterfire and Weapons Locating Radar Operations" October 2021, and ATP 3-34.80 "Geospatial Engineering" February 2017. All three publications are unclassified, approved for public release, distribution unlimited.
2. An overview of how to display temporal data in ArcGIS can be read here, "Working with Temporal Data in ArcGis," esri, by Aileen Buckley, Spring 2018, https://www.esri.com/about/newsroom/arcuser/working-with-temporal-data-in-arcgis/
3. GIS software is already leveraging Artificial Intelligence to improve analysis, see "Where Deep Learning Meets GIS" by Rohit Singh, esri, June 2019, https://www.esri.com/about/newsroom/arcwatch/where-deep-learning-meets-gis/
4. I extend my thanks to CW3 George Morris for reviewing and providing feedback on a working version of this concept.

LSCO: Is it, or should it be, AirLand Battle 2.0?

By Dr. John Grenier

LSCO (Large-Scale Combat Operations): The Army's newest mantra has catalyzed Army-wide reforms to prepare for battles and wars against peer and near-peer competitors. From the Field Artillery (FA) Branch's perspective, the possibility of war against Russia, the People's Republic of China (PRC), Iran, and/or the Democratic People's Republic of Korea (DPRK) has driven significant matériel and non-matériel changes. These include, for instance, the creation of new/modified long-range artillery systems such as ERCA (Extended Range Cannon Artillery) and PrSM (Precision-Strike Missile) and re-standing up DIVARTYs (Division Artillery) for each of the Army's active-component combat divisions.[1]

But LSCO, in the broadest sense, is nothing new for the Army. LSCO is perhaps best understood as occupying one end of what the Army (and the entire U.S. military structure) formerly called the Spectrum of Conflict. The spectrum engrossed multiple varieties of conflict, and the Army generally placed wars between and among nation-states at the "high-intensity conflict" (HIC) end of the spectrum and wars against insurgents/guerrillas/terrorists and non-state actors at its "low-intensity conflict" (LIC) end. Frankly, the Army gave little thought to LIC and counterinsurgency (COIN)… which partly necessitated the creation of the United States Special Operations Command (USSOCOM) in the mid-1980s. Conflicts such as the one in Vietnam (which required 550,000 troops at its height to fight *both* North Vietnam Army regulars and Viet Cong guerrillas) sat somewhere near the "mid-intensity conflict" part of the spectrum. A possible war against the Union of Soviet Socialist Republics (USSR) and the Warsaw Pact took up most of the space at the spectrum's HIC end.

The end of the Cold War in the late 1980s and early 1990s, coupled with the quick and relatively easy defeat of Iraq's military in 1991—only 100 hours of land battle that followed 40 days of around-the-clock air attacks on Iraq's fielded forces, second echelon units, and Command and Control (C2) network and infrastructure—convinced the Army that future HIC against a competent near-peer competitor was unlikely. The subsequent emergence of new cyber and space-based "information warfare" technologies and American policy makers' preference to turn to the precision-strike capabilities of the United States Air Force/United States Navy (USAF/USN) and/or specialized operators (as their name denotes) from USSOCOM to deal with post-Cold War problems of force employment, of which counter-terrorism proved the most intractable, left the "Big Green" Army looking for a mission set. Some thought modularization and presenting forces on the battlefield in brigade combat teams—vice divisions and corps—to focus on "contingency operations" against non-peer competitors offered an answer. Yet victory in Iraq and Afghanistan—LICs in which battalions and echelons *below* them should have made their most impact—proved elusive. The Army, understandably, looked to move on to something "new" in the mid-2010s. Enter LSCO.

With the focus now intently on Russia and other

1 See John Grenier, "DivArtys in 2021 and Beyond: Much More Than Everything Old is New Again," *FA Journal* 3 (2021): 37-39.

near-peer competitors, some have suggested that LSCO is merely a warmed-over version of the doctrine for HIC that the Army developed for war against the USSR in the 1980s: AirLand Battle.[2] Others have said that AirLand Battle offers a roadmap to the future. Before either accepting or rejecting out of hand that LSCO is, or should be, AirLand Battle 2.0, we might be well served with understanding the historical context—the impacts of continuity, contingency, and change in a particular time and space—in which the Army created AirLand Battle, the doctrine that it latched on to as its *raison d'être* as it tried to emerge from defeat in Vietnam. The macro question at the end of the day for us in 2022 is to what extent will LSCO crystalize into a doctrine that shapes the Army through the rest of this decade and into the 2030s? With that in mind, there's much to learn, and more to understand, about the "why" and the "how" of the Army's effort to develop AirLand Battle in the 1970s and 1980s.

AirLand Battle was, at its core, the doctrine that the Army hoped the Joint Force could use to build the strategy and operations it needed to win the land-war component of World War III. It broadly focused on the strategic lay of the land at the time. It also addressed the fundamental problem that the Army faced at the operational level of war: the Red Army and the Warsaw Pact greatly outnumbered the U.S. Army and its NATO partners in Europe. Detailed analyses of annual REFORGER (Return of Forces to Germany) exercises convinced many American strategists of the notion that the Army could "ship" three corps/six divisions to reinforce V and VII Corps in Germany was little more than a pipe dream.[3] This realization grew more disconcerting after the USN (and the United Kingdom's Royal Navy and the Royal Canadian Navy, to whom the USN delegated most the "scut work" of anti-submarine warfare) quietly questioned whether it could defeat the Soviet Navy's massive surface and submarine fleets to keep open the shipping lanes through the GIUK (Greenland, Iceland, United Kingdom) Gap to the continent.[4] "Ivan's submarines," albeit most significantly his "boomers" that could launch ballistic missiles with nuclear warheads, profoundly worried American policy makers and strategists. A historical artifact from the time, Tom Clancy's *The Hunt for Red October*, speaks to a preoccupation with the Soviet Navy that led the Reagan Administration to call for a 600-ship USN, which in turn threatened to consume significant portions of the DoD budget. Although Western Europe lived under the protection of the U.S.'s (and to some extent the UK's and France's) nuclear umbrella, questions abounded whether a nuclear deterrent even remained viable. Deterrence was (and is) based on capability times (not plus) will: if either capability or will is zero, so is deterrence. In that light, would the POTUS *really* risk the obliteration of Chicago, or the British Prime Minister sacrifice Liverpool, if the only option to keep the USSR and Warsaw Pact out of Berlin or Bonn devolved into the nightmare scenario of a nuclear exchange between the USAF/USN and the Soviet Strategic Rocket Forces and air force?[5] Although the French military seemed perfectly willing to defend *La France* to the last-standing West German and hold the line on its eastern border, that hardly comforted the people of the Federal Republic of Germany, or U.S. commanders who must prepare for battle at the Fulda Gap, the lowlands between West and East Germany through which planners predicted the Warsaw Pact intended to storm to gain the Rhine River.[6] In the late 1960s, the Army contended that its and NATO's technological superiority over Soviet and Warsaw Pact armies helped deter a non-nuclear war, and if deterrence failed, it proved enough to win on the battlefields of Central Europe. Soviet armored, long-range artillery (LRA), surface-to-air missile (SAM), and fighter-aircraft technologies, however,

2 That said, LSCO has yet to be codified into a formal doctrine like AirLand Battle.

3 While the Army spoke of moving three corps and six divisions across the Atlantic, REFORGERs between 1969 and 1993 tested capability to transport only one division-plus

4 One might question whether the 6,000 Soldiers who participate in today's Atlantic Resolve exercises go to Europe more for public relations and confidence-building messaging than to train and exercise combat capability. See https://www.europeafrica.army.mil/AtlanticResolve/ (accessed 23 FEB 2022).

5 "New-q-lure combat, toe-to-toe with Ruskies," in the immortal words of the fictional MAJ T.J. "King" Kong in *Dr. Strangelove*. https://www.youtube.com/watch?v=qXp8SnXUvEo (accessed 23 FEB 2022).

6 French Soldiers' attitudes perhaps originated in the trauma that the Germans' occupation and partition of their nation between 1940 and 1944 inflicted on them and their citizens.

improved almost at a geometric pace in the early 1970s.[7] Nevertheless, the U.S. and NATO won the war in Clancy's second novel, *Red Storm Rising*, without resorting to nuclear or chemical weapons to overcome the Russian hoards now equipped with state-of-the-art weapons. In another artifact of the time, the protagonists—the American tank crews and infantrymen fighting at the company level in the Fulda Gap—of MAJ Harold Coyle's technothriller *Team Yankee: A Novel of World War III* survive (not necessarily win) a conventional battle against the Red Army. In the denouement of *Team Yankee*, the Soviets "nuke" Birmingham, and NATO retaliates by destroying Minsk, which implausibly leads to a ceasefire. Still, the hero of the novel, the fictional CPT Sean Bannon paraphrases the Duke of Wellington's apocryphal explanation for his army's victory over Napoleon at Waterloo in 1815, and he claims that the Warsaw Pact "came on in the same old way, and we saw them off in the same old way." Military professionals recognized Coyle's story as mediocre fiction despite its popular success, including a series of comic books and video games. It certainly was no basis for strategy or doctrine. Though time proved that the Politburo's massive expenditures to modernize the Red Army contributed to bankrupting the USSR, without the benefit of hindsight, the U.S. Army in 1980 faced acknowledging that it looked over a radically changed strategic and operational landscape in Europe compared to the one it saw only a decade earlier. Clearly, Ivan harbored no intention of coming on in the same old way, and instead, problems for the Army abounded.

Possible solutions, or at least lessons to learn, also seemed available, provided the Army looked in the right place, and just as importantly, took the time to think deeply about them. It rightfully focused on the Israel Defense Forces (IDF) and the lessons that might have come from its experiences in the Yom Kippur War from 6 to 25 October 1973. The IDF, tasked with protecting a small nation with a relatively small military against enemies who might attack at any moment, traditionally had been extremely casualty averse. Through the previous Arab-Israeli Wars (1948-1949, 1956, and 1967), the IDF managed the attrition of its forces quite well, despite facing opposing armies that, in theory, should have been able to maul it with overwhelming numbers. Much of the IDF's pre-1973 success originated in Israeli warfighting doctrine, which pivoted around a central tenet that airpower served both as a force multiplier and protector of IDF ground formations.

During the Yom Kippur War, airpower initially failed the IDF. Egyptian SA-6 SAM batteries and MiG fighters, which President Anwar al-Sādāt convinced the Soviet Union to give him, covered their ground forces' operations over the Suez Canal and across the Sinai Peninsula. Syrian SAMs (also courtesy of the USSR) were similarly protected from Israeli Air Force (IAF) attacks and armored thrust into the Golan Heights. Syrian tanks initially made significant gains. While IDF armor and FA quickly regrouped, they badly bloodied both the Egyptian and Syrian ground forces and then drove the overextended Syrians (who wildly burned through their Russian SAMs) from the Golan Heights. The losses the Israelis suffered in the first three days of the war were unsustainable: over 100 aircraft (or nearly a quarter of the IAF inventory) and 300 armored fighting vehicles were destroyed.

The first 72 to 96 hours of the war demonstrated that modern weapons systems could produce staggering lethality and attrition, far beyond the worst predictions of the most vocal doom-and-gloom prognosticators. Both the USSR and the U.S. government tried to rush their clients' matériel. The Americans' Operation Nickel Grass suggested that provided the USAF/USN maintained local air

An American-produced and the signature IAF desert camouflage paint pattern during the Yom Kippur War.

7 FA professionals noticed the 2S35 Koalitsiya-SV when the Russians unveiled it at the Moscow Victory Day Parade in 2015: the 2S35's range and rate-of-fire far surpasses that of the legacy 2S19 Msta, and it threatened to significantly complicate future counter-battery fights for U.S. artillerists.

superiority, it was possible to sustain by air a ground force engaged in corps and field army-sized combat operations. It required a Herculean effort, but over 32 days, the USAF's Military Airlift Command (MAC) ferried over 23,000 tons of matériel of all sorts to Israel. The IAF, in particular, received air-to-air Sidewinder missiles, fresh off the assembly line F-4 Phantom II fighters and other combat aircraft from USAF and USN fighter and attack wings. It was then up to the IDF and IAF to make the best use of the American-supplied matériel.

On the political front, Israel could not wait to act offensively while MAC's buildup of supplies and planes progressed. Any long pauses in the fighting threatened to leave Arab armies inside Israel's hard-won (in the previous wars) buffer zones, a possibility the Israelis could no more brook than NATO allowing the Red Army to remain in Hessen near the Fulda Gap if a hypothetical war in Europe went badly in its early hours. But Israeli commanders also understood all too well that the IAF could not operate west of the Suez Canal as long as large numbers of Egyptian SAMs remained operational: the IDF, therefore must "bite the bullet" and cross the Suez to conduct SEAD (suppression of enemy air defenses). The IDF offensive across the canal (led by MG Ariel Sharon, the "Hero of the Yom Kippur War" and later president of Israel) essentially was a ground-force operation to support an air campaign. Once the IDF overran the SAM sites, the IAF (reinforced with nearly 100 USAF and USN aircraft) quickly swept Egypt's MiGs from the sky. The IDF, now benefiting from air supremacy, encircled the Egyptian Third Army near Suez City and prepared to destroy it, just as the Red Army annihilated the German Sixth Army at Stalingrad in World War II, but only faster. Meanwhile, on the Golan Heights front, IDF FA, which had accompanied the Israeli counter-offensive that penetrated deep into Syria, began to shell the outskirts of Damascus. The USSR recognized that its Arab clients had lost yet another war to the Jewish state, and it instructed both the Egyptians and Syrians to accept the United Nations' proposed cease-fire.

The Army, in 1974, could look to either Vietnam or the Yom Kippur War for the most recent lessons about the future of battle.[8] Training and Doctrine Command's (TRADOC's) first commander, GEN William E. DePuy, picked the Yom Kippur War, primarily because he saw in the IDF's experience a simulacrum of the primary operational situation that U.S. and NATO forces faced in Europe: qualitatively superior/quantitatively inferior infantry formations that would be drawn onto fast-moving, armor and air-power dominated battlefields. DePuy adopted a back-to-basics training approach to reinforce the skills advantage of U.S. Soldiers at the tactical level, and he also encouraged his doctrine writers at Fort Monroe to think creatively and boldly about air power as much as ground power as they prepared the Army's operational doctrine to carry it through the rest of the 1970s and into the 1980s.

In July 1976, the Army published its latest iteration of FM 100-5, *Operations*. The document made clear the assumptions that most shaped its authors:

We cannot know when or where the U.S. Army will again be ordered into battle, but we must assume the enemy we face will possess weapons generally as effective as our own. And we must calculate that he will have them in greater numbers than we will be able to deploy... Because the lethality of modern weapons continues to increase sharply, we can expect very high losses to occur in short periods of time. Entire forces could be destroyed quickly.[9]

FM 100-5 was a large and complex document ripe for possible interpretations, but in a nutshell, it substituted firepower for manpower at the tip of the Army spear. The imperative for more firepower meant the Army needed more self-propelled FA to keep up with and support its maneuver forces, better-mechanized infantry, more aviation assets that could deliver anti-armor weapons, and more close air support aircraft.[10] FM 100-5 also made suggestions that verged on Army heresy. First, it essentially said that

8 The Paris Peace Accords on 27 January 1973 signaled the end of U.S. combat operations in Indochina.

9 Quoted in John Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine 1973-1982* (Fort Monroe, Virgina: TRADOC Historical Office, 1984), 6.

10 The appearance of the USAF's A-10 Thunderbolt II (aka the Warthog)—the much beloved, at least by the Army, "tank killer"—in 1975 and the AH-64 Apache—initially intended as an aerial anti-tank platform—in 1986 spoke to the quest for anti-armor aviation assets in both the USAF and the Army.

the Army could not win the land battle without the Air Force. Second, it replaced the primacy of the offensive with "Active Defense"—limiting offensive action and counterattacks to denying the enemy contested areas or positions—and it concluded that commanders should attack "only if he expects the outcome to result in decisively greater enemy losses than his own, or result in the capture of objectives crucial to the outcome of the larger battle."[11]

For an army schooled in warfare, that centered on offensive maneuver, to read an operational-level doctrine that emphasized defense and stressed firepower at the expense of manpower, raised hackles. GEN Donn Starry, who succeeded DePuy as TRADOC commander in July 1977, noted the disquietude within the Army, and he tried to smooth the roiling waters by proffering the concept of the Central Battle, the part of the battlefield where the elements of firepower *and* movement come together in a maneuver to produce a decision. Part and parcel with the Central Battle concept was the criticism of FM 100-5's focus—some said obsession—on winning the "First Battle," the "one and done" mentality of the doctrine. Warsaw Pact's second-echelon and follow-on forces (which the U.S. and NATO lacked) surely could make moot any initial U.S.-NATO battlefield successes. Thus emerged a focus on a much deeper battlefield (stretching into East Germany, Poland, and Belarus, for example) than assumed in the active defense of the Fulda Gap. Through several processes and analyses, an "air-land battlefield" consensus, in which air forces "stretched the battlespace," emerged. The new constructs compelled the Army to think deeply about FM 100-5 rather than simply criticizing it.

Through most of 1979, the Division 86 program at the Combined Arms Center (CAC), the Field Artillery School (USAFAS), and other branch schools fleshed out concepts of how Army divisions might interdict a second- or third-echelon attack from Warsaw Pact formations in the "deep battlespace."[12] Battlefield interdiction traditionally had been a focus of the USAF: the efforts along the Ho Chi Minh Trail had failed to produce the results promised, but the success of U.S. Army Air Forces' March to mid-August 1944 "Transportation Plan" that successfully isolated the Normandy beachheads from the Luftwaffe and Wehrmacht armor offered a more positive precedent. The Army's proponents of interdiction thus argued that ground force could similarly neutralize the Warsaw Pact's overwhelming firepower and numbers advantages before they could bring them to bear on U.S.-NATO forces in western Germany. Wholly in line with the *weltanschauung* of the Army at the height of the Cold War, much of their work focused on finding ways to employ "tactical" nuclear as well as chemical weapons.[13] Of course, the USAF's Strategic Air Command (SAC) scoffed that there was no such thing as a tactical nuclear weapon: once either side let the nuclear genie out of the bottle, SAC argued, Minuteman Intercontinental Ballistic Missiles (ICBMs) and B-52 Stratofortress bombers with nuclear payloads, and the Soviet's SS-18 ICBMs and their Tu-95 Bear bombers would surely dominate the war and make pointless the movements of ground forces.[14]

Nevertheless, in October 1979, TRADOC presented at a meeting of the chiefs of staff of the Army and USAF, the Army's vice chief of staff, the commander of the USAF's Tactical Air Command (TAC), and GEN Starry, a view of a future battle in which U.S. ground forces pre-emptively employed tactical nuclear and chemical weapons. The "Twenty Star Meeting" and several meetings that followed kick-started a rush to determine how the Army might combine tactical-nuclear and chemical-weapons strikes, ground-maneuver operations, and LRA Fires to interdict enemy forces in their rear areas. The USAFAS's particular contribution to the evolving body of thought centered on the Nuclear System Program Review (NSPR), held at Fort Sill in December 1979. At the NSPR, USAFAS staff officers briefed a concept of an "integrated battlefield" that included several FA-delivered tactical nuclear

11 Quoted in Romjue, 9.

12 Division 86 was part of the CAC's analysis and war-gaming effort that studied alternative structures to the Army's organization of its divisions. The goal was to recommend a template the Army could use for its divisions in 1986.

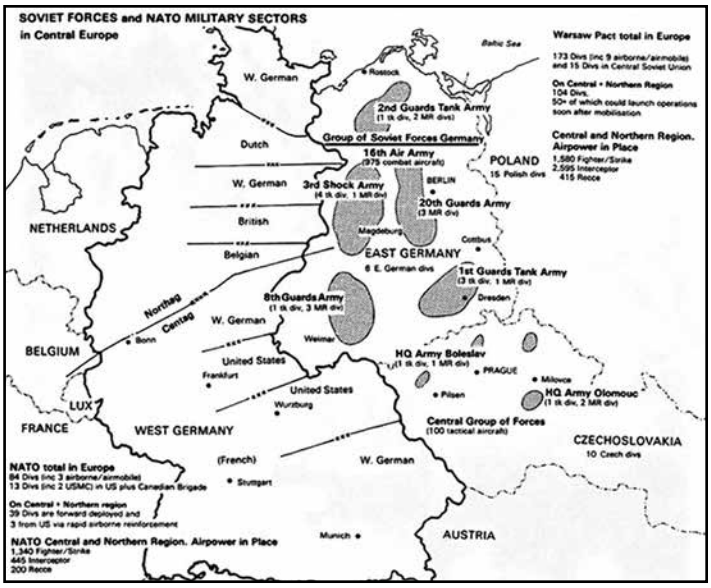
13 The United States began a secret biological weapons program in 1943, but it discontinued it in 1969. In 1975, the U.S. ratified the 1925 Geneva Protocol and 1972 Biological Weapons Convention that outlawed biological weapons.

14 The USAF's Ground-Launched Cruise Missile did not enter service until 1983; Peacekeeper ICBMs followed in 1986.

options, beyond those TAC could offer with its mid-1960s-vintage F-111 Aardvark low-level penetrators, each loaded with only six "small" nuclear bombs and missiles. The school's position was that a threat of accurate, persistent, timely, and all-weather tactical-level nuclear strikes from 8-inch cannons that employed "ultra-low yield" (.1 megaton, or 100 kilotons) warheads might deter the Warsaw Pact from forming its units in the dense formations that breakthrough operations required.[15] This was, if nothing else, bold thinking.

The question then became how to include in doctrine all the different concepts and products of the "out-of-the-box" thinking that the likes of USAFAS and other Army organizations offered. In the late 1970s, the Army's home for tactical and operational problem-solving resided at Fort Leavenworth with the CAC and responsibility for writing FM 100-5 sat with TRADOC at Fort Monroe. GEN Starry recognized many shortcomings in this arrangement, not the least of which was that Professional Military Education (PME) instructors, the cadre responsible for teaching and explaining doctrine to the Army's future leaders, and perhaps those who best understood how to clarify its more esoteric concepts, had no part in formulating and writing doctrine. He, therefore, directed that the Army must include doctrine writers among the instructor community throughout the PME system. When in March 1980 the Army announced that it intended to revise FM 100-5, the Department of Tactics (DTAC) at the Command and General Staff College (CGSC) at Fort Leavenworth received the assignment. Publication of TRADOC's "Operational Concept of the AirLand Battle" a year later gave DTAC a name for the doctrine it intended to write. It was then up to DTAC's small team of lieutenant colonels—Huba Wass de Czega as lead author and L.D. Holder and Richmond Henriques as assistants—to produce a document the entire Army could buy off on. As CGSC faculty members, Wass de Czega, Holder, and Henriques almost instinctively turned to classics of military thought and theory, particularly the writings of Carl von Clausewitz, Basil H. Liddell Hart, and J.F.C. Fuller, as they contextualized their work. They also readily embraced suggestions from the field: the German concept of mission-type orders (*Auftragstaktik*) found its way into the doctrine and to this day remains a constant of U.S. operations.

The Army published its revised FM 100-5 in August 1982. Although titled *Operations* like its predecessors, it quickly became known as AirLand Battle for a good reason. Its central premise read that "The AirLand Battle will be dominated by the force that retains the initiative and, with deep attack and decisive maneuver, destroys its opponent's abilities to fight and to organize in-depth."[16] Rapid movement and high-volume Fires, the doctrine added, promised to blur distinctions between forward and rear areas. Furthermore, the range and lethality of Red Army/Warsaw Pact, PRC, DPRK, or perhaps Iranian or Iraqi weapon systems promised to match or exceed the Army's. Fortuitously, American advancements in C2 and Intelligence, Surveillance, and Reconnaissance (ISR) gave U.S. commanders the almost instantaneous knowledge—perhaps a silver bullet—they needed to win across the battlespace.[17]



V and VII Corps stood on the west side of the Fulda Gap, opposite the Soviet 8th Guards Army in East Germany, for much of the Cold War. Soviet and Warsaw Pact rear-echelon forces in East Germany and Poland threatened to overwhelm U.S. and NATO forces.

15 Little Boy, which the U.S. dropped on Hiroshima, produced a blast yield of 15 kilotons; Fat Man, the atomic bomb with which the U.S. struck Nagasaki delivered a blast yield of nearly 21 kilotons.

16 Quoted in Romjue, 66

17 Those advances reached a significant milestone in 1996 when the USAF's E-8 JSTARS (Joint Surveillance Target Attack Radar System) took to the skies. JSTARS provide ground-moving target-indicator information to commanders

Soviet armor in a parade in 1983 commemorating the October Revolution of 1917.

U.S. forces, the doctrine continued, must expect the enemy to employ nuclear and chemical weapons, but the Army must not permit the use of such weapons to decide the conflict. Instead, it must recognize that "On the modern battlefield, nuclear Fires may become the predominant expression of combat power, and small tactical forces will exploit their effects."[18] Because of the lethality of modern weaponry, future battle will be short and violent. A decision could come in hours or days, on the model of the Yom Kippur War, vice weeks or months, as was the World War II norm.

The USSR and Warsaw Pact fell apart before the Army could use either its 1982 or slightly revised 1986 AirLand Battle in Europe. Saddam Hussein, however, gave the Army the perfect arena in 1991 to prove in action the doctrine's validity. Operation Desert Storm witnessed history's most successful combined air and land campaign.[19] Airpower (both new platforms such as the F-117 Nighthawk "stealth" fighter and legacy systems such as the F-111 and B-52, albeit carrying only conventional weapons) both interdicted the battlefield and protected maneuver forces and multiplied their effects. American C2 and ISR capabilities, and the nearly complete destruction of the enemy's C2 network, from Saddam's palaces in Baghdad through Iraqi platoons in Kuwait, gave American commanders total information dominance, just as the doctrine prophesized. The U.S. Army refused to allow Saddam to decide the conflict with either the threat or the employment of chemical or biological weapons: the Soldiers of the 24th Mechanized Infantry Division kept their MOPP (Mission Oriented Protective Posture) gear ready as they raced across the western desert to gain the Iraqi rear and encircle the enemy in Kuwait. The Army was determined to fight and win quickly and decisively, and it did.[20] No wonder, then, that the Desert Storm Special Study Group titled its official history of the Gulf War *Certain Victory*. With AirLand Battle as its operational doctrine, there was never any doubt in the Army's mind about the battle's outcome.[21]

Tomorrow's LSCO/HIC will demand a doctrine different than AirLand Battle. Most significantly, the nuclear variable (or at least the employment of tactical nuclear weapons by the U.S. Army) is missing in discussions of the LSCO equation. That said, concerns about out-gunned, out-ranged, and out-manned formations remain. RAND's 2019 *Army Fires Capabilities for 2025 and Beyond*, which USAFAS sponsored to provide an independent assessment of the Fires capabilities the Army needs as it transitions from COIN to LSCO, made stark

---

at all echelons, but they have never been deployed against a peer competitor with advanced snit-access/area denial capabilities.

18 Quoted in Romjue, 67.

19 Some outside the U.S. military have argued that Desert Storm better demonstrated the application of NATO's FOFA (Follow-on Forces Attack) operational sub-concept than the use of AirLand Battle. They point to the absence of nuclear weapons in the Coalition's plan or execution. That said, FOFA was (and is) primarily a defensive doctrine. It was "designed to attack with conventional weapons those enemy forces which [*sic*: that] stretch from just behind the troops in contact to as far into the enemy's reach as our target acquisition and conventional weapons systems will permit" in order "to reduce to a manageable ratio … *the number of enemy forces arriving at our General Defensive Position*" [italics added]. Quoted in Michael Diver, "NATO's Follow-On Forces Attack (FOFA) Concept: Past, Present, and Future," student paper (Rome, Italy: NATO Defense College, 1990), 1.

20 For contemporary reporting on the Army in Desert Storm, see https://www.c-span.org/video/?16751-1/24th-mechanized-infantry-division.

21 Robert H. Scales, *Certain Victory: The United States Army in the Gulf War* (Washington, DC: Office of the Chief of Staff, U.S. Army, 1993).

the imperative to counter Russian overmatches in distance, volume, and rate-of-fire among FA assets. At the same time, the Suwalki Gap, the stretch of land between the Russian enclave at Kaliningrad and the Russian client state of Belarus, looks eerily similar to the Fulda Gap. Airpower will certainly take a central role in any new doctrine for LSCO. But the USAF recently has quietly questioned its ability to provide air superiority, even with fifth-generation fighters such as the F-22 Raptor and F-35 Lightning II, in the face of Russia's "double-digit" SAMs in the S-300 series (the SA-10, the SA-12, and the SA-20).[22] U.S. Field Artillerists today think of using long-range precisions Fires (LRPF) to first win the counter-battery fight; the Army of tomorrow may need to devote early on a significant portion of its LRPF, and the new Mid-Range Capability, to SEAD missions. The Army may find itself supporting the air campaign before the air campaign can support the ground campaign, à la Ariel Sharon's operation across the Suez Canal in 1973. The draft "Army Concept for Fires," which aims to provide a conceptual foundation for developing future capabilities and, just as importantly, engendering doctrine development and ideas about future armed conflict, might help, just as the 1981 "Operational Concept of the AirLand Battle" brought into focus the mid-and late-1980s' tasks. Of course, one might question if future operations really will support two (or more) distinct campaigns because the U.S. military and its partners will have benefitted from decades of Joint and interoperability training. But even at the acme of AirLand Battle in Desert Storm, there were distinct air and land campaigns, despite what the doctrine's cobbled together name implied. Reverberations from the past—both the troubled times of the late 1970s and early 1980s and the victorious days of 1991—continue to rumble through Army doctrine-writing and planning circles. Today's Army should listen attentively to the echoes of AirLand Battle.

Dr. John Grenier is the FA Branch/USAFAS Historian.

22 Russia sold, at bargain prices, S-300s to Iran in 2016.

SGT Joseph Kammerer, a cannon crewmember with C Battery, 3rd Battalion, 320th Field Artillery Regiment, 3rd Brigade Combat Team, 101st Airborne Division (Air Assault), shouts commands during a direct fire live fire on a range at Fort Knox, Kentucky, April 25, 2022. The purpose of this training is to execute a decentralized division training density from dispersed field environments in order to enhance readiness, while stressing communications and sustainment systems across extended distances. *(U.S. Army photo by SSG Michael Eaddy)*

Today's *Battlefield Coordination Detachment:* is our Doctrine Right?

How the 5th BCD supports USARPAC as both the TJFLCC and the JTF CDR

By CW4 (P) William Carter, CW3 Nick Esser, and MAJ Adam D. Buchanan

"You can't effectively prosecute a campaign using MDO (Multi-Domain Operations) if it is not Joint. Headquarters are going to be increasingly purple in the future – with any sensor, any shooter, through any command and control node in near real-time, with sufficient authorities. What we're comfortable with and what we're used to in campaigns of the past is the Air Force might go in initially to prep an objective followed by a significant campaign of ground maneuver. The opposite may be true in the future and not only in Europe, but also in this case, in Asia. Imagine the Army effectively securing airspace and waterways by long-range precision Fires or air missile defense. ...at different times a certain domain or multiple domains can be leveraged in order to create space for another service or another capability. And I think this validates the Joint nature of all of this."

- LTG Eric Wesley (Ret.)
Deputy Commander, Army Futures Command

Introduction

The Battlefield Coordination Detachment (BCD) is arguably the most misunderstood organization in the Field Artillery community, the Army at large, and within the Joint Force. Due to its small size and the behind-the-scenes nature of its coordination role between Army Forces (ARFOR) and Air Force commanders, the BCD often flies under the radar.

This article aims to inform the aforementioned audiences regarding the current mission set of the BCD, the need to update the current BCD doctrine to capture all the roles the BCD must perform for its wartime mission, and why the BCD is the only entity that can represent the ARFOR Commander to the Theater Joint Forces Air Component Commander (TJFACC), whether the commander is wearing a "green" hat as the Joint Forces Land Component Commander (JFLCC) or "purple" hat as the Joint Task Force (JTF) Commander.

Current Mission of the BCD

Army doctrine states, "The BCD staff clearly articulates the ARFOR commander's requests for air operations support for the ground operations to complement the Joint Forces commander's (JFC) end state."[1] This statement barely scratches the surface with regards to the critical mission the BCD shoulders for the ARFOR. In addition to coordinating air support requests such as air interdiction (AI), close air support (CAS), and strike coordination and reconnaissance (SCAR), the BCD must coordinate, synchronize and deconflict cyberspace, space, electromagnetic warfare (EW),

special technical operations (STO), information operations (IO), and the employment of Army long-range precision Fires with the rest of the Joint Force.

Currently, the Air Force's Air and Space Operations Center (AOC) is the only operations center capable of coordinating across all components and domains. This cross-component/cross-domain coordination is made possible by the presence of component and functional representatives within the AOC, including the following: BCD, Marine Liaison Element, Naval and Amphibious Liaison Element, Special Operations Liaison Element, Director of Space Forces (DS4), Director of Cyberspace Forces (DC4), Non-Kinetic Duty Officer (NKDO) and Director of Mobility Forces. The aforementioned coordination occurs in the AOC due to the authorities that are delegated by the JFC to the TJFACC, which will be discussed later in this article.

Additionally, the BCD coordinates airlift requirements pertaining to Joint Forcible Entry Operations (JFEO), HIMARS Rapid Infiltration as part of Flexible Deterrent Operations (FDO), and a plethora of sustainment operations in support of the ground scheme of maneuver (SoM). Furthermore, the BCD provides intelligence support to Joint targeting by supplying additional capability to the Distributed Ground Stations (DGS) – leveraging the units that are responsible for the bulk of intelligence exploitation on behalf of the Air Force, increasing the effectiveness of the intelligence gathering of the DGS while sharing situational awareness gained with the ARFOR. These are just some of the tasks the BCD fulfills. There is a laundry list of other tasks that doctrine does not account for concerning the BCD's contribution to MDO and the role the BCD plays as the liaison between the two four-star headquarters of the United States Army Pacific (USARPAC) and Pacific Air Forces. Figure 1 below provides a graphical depiction of how the 5th BCD staff currently integrates with the TJFACC AOC in order to show the numerous linkages between the BCD and the AOC.

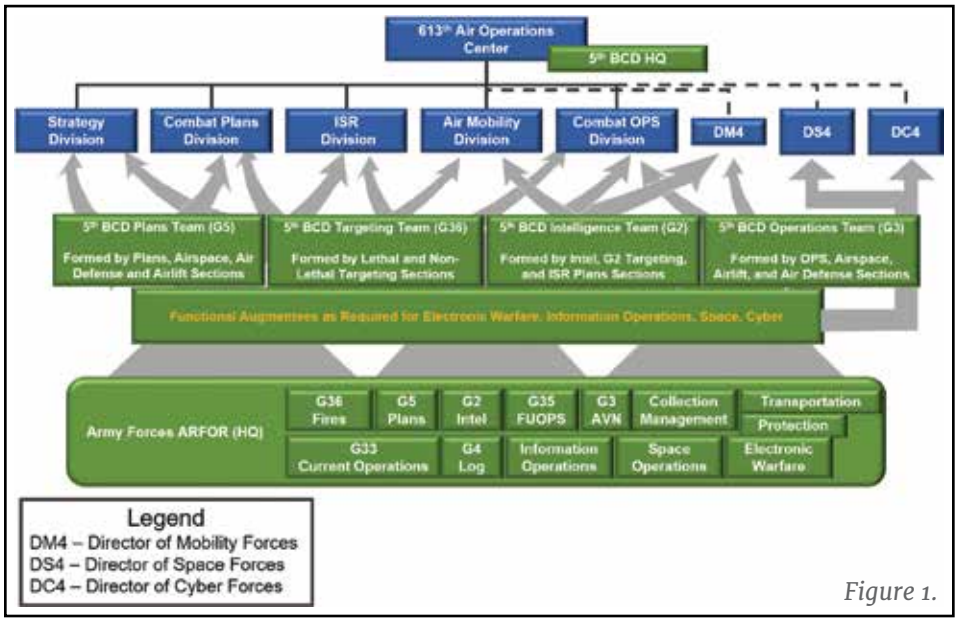


Figure 1.

BCD Force Laydown

There are currently four active-duty BCDs and two Army National Guard (ARNG) BCDs located across the globe. The 3rd BCD is located at Osan Air Force Base (AFB) in Korea and is responsible for supporting ground operations on the Korean peninsula. The 3rd BCD coordinates with the 607th AOC. The 4th BCD is split between Shaw AFB in South Carolina and Al Udeid Air Base in Qatar. They are responsible for the United States Central Command (CENTCOM) Area of Responsibility (AOR) and coordinate with the 609th AOC. The 5th BCD is located at Hickam AFB, Hawaii, and is responsible for the U.S. Indo-Pacific Command (INDOPACOM) AOR and coordinates with the 613th AOC. It is noteworthy to mention that the 5th BCD provides support to CENTCOM as well. CENTCOM support comes in the form of Ground Liaison Detachments from various Fighter Wings rotating into the AOR to support wing deployments in support of combat operations. The 19th BCD is located in Germany and is responsible for the U.S. European Command AOR. They coordinate with the 603rd AOC.

The two ARNG BCDs, 251st BCD and 560th BCD, are located in California and Georgia, respectively. Their primary mission as a BCD must often compete with other missions given to them by their State

National Guard chain of command, such as wildland firefighting. Despite the competing requirements, both ARNG BCDs provide support to the 5th BCD and 19th BCD and align their training with active component BCDs as often as possible.

Regardless of the Combatant Command (COCOM), the ARFOR Commander relies heavily on the BCD to ensure all requirements are understood and represented in the AOC. All BCDs ensure ARFOR's SoM, scheme of Fires, commander's intent, and guidance are also represented in a timely and accurate manner to the TJFACC, JFC, and other service components.

Doctrine versus Reality

According to doctrine, "A geographic combat commander, or JFC, may establish multiple Joint Task Forces within his AOR. In this case, a single JFACC and his Joint Air Operation Center may simultaneously support several JTFs. This option is known as a theater-wide JFACC (TJFACC)."[2] Due to the air component's limited resources in manning and equipment, it is a safe planning assumption that only one JFACC will exist in a given theater.

In the CENTCOM AOR, the Army has learned counterproductive habits with regard to air operations that form misconceptions across the force. For example, the current operations model used by a forward-deployed JTF headquarters relies on direct coordination with the TJFACC in which the Joint Fires cell articulates the JTF commander's guidance and intent, targeting objectives and effects to be achieved against those objectives. Therefore, the JTF is attempting to control the timing and tempo of operations. This worked because there was only one JTF and one AOC conducting operations tied to counterinsurgency efforts in an environment where the U.S. military was not contested in any of the five domains. However, this would not work if multiple JTFs stood up in the CENTCOM AOR and the mission required conducting concurrent ground operations against a near-peer/peer adversary that has the capability to heavily degrade and/or deny U.S. military operations. The Air Force does not have the "bandwidth" to create multiple JFACCs for each JTF as they are stood up, nor does the TJFACC's weapon system – the AOC – have the capacity to coordinate directly with each additional JTF, especially during large-scale combat operations (LSCO) against a near-peer/peer adversary.

In the INDOPACOM AOR, there is only one TJFACC. That said, the potential exists to create various JTFs in support of operations during a crisis, contingency, or conflict. When USARPAC – the Theater Joint Forces Land Component Commander (TJFLCC) – is not serving as a JTF, it still must articulate priorities to the 5th BCD in order to properly coordinate with the TJFACC in their role as JFLCC wearing the traditional "green" hat. Meanwhile, the TJFACC must support multiple JTFs that are conducting concurrent operations inside the Joint Operations Area (I/JOA). Doctrine addresses this normal role, but it does not take into account that the TJFLCC could also serve as a JTF. In that capacity, the TJFLCC would be responsible for conducting operations I/JOA and outside the JOA (O/JOA). Thus, doctrine paints a false picture that the BCD only supports the ARFOR when serving in a "green" capacity as a JFLCC and not a "purple" capacity as a JTF.

While wearing the "purple" hat, the JTF commander (USARPAC) would expect the BCD to advocate for all of its equities (i.e., Fires, Intel support to targeting, etc.) to the TJFACC in order to facilitate MDO for the entire JTF I/JOA. Additionally, the 5th BCD would assist with O/JOA on behalf of ARFOR operations, such as coordination of airlift for the reception, staging, onward movement, and integration (RSOI) mission and FDOs. Keeping this scenario in mind where the TJFLCC is also wearing the purple hat as the JTF commander, what other organization if not the BCD would the JTF commander rely on to coordinate with the TJFACC and Air Component Command to ensure that the support they both provide matches their priorities as both the JTF and TJFLCC? No organization other than the BCD can do this.

The BCD has placement and access to the coordination authority – the TJFACC – and is postured to coordinate and synchronize ARFOR equities with Joint and multi-national partners. Therefore, the BCD would be double and, at times, triple-hatted depending on the command relationship of the Multi-Domain Task Force (MDTF). The third hat would be representing MDTF while it is operational control (OPCON) to the Joint Force Maritime

Component Commander (JFMCC). This problem set is not specific to INDOPACOM but applies to all other COCOMs as well.

The Air Force's largest risk to the mission is supporting multiple JTFs that are responsible for different AORs I/JOA while simultaneously conducting air operations O/JOA as the TJFACC due to its limited number of fighter, bomber, ISR, and lift platforms. As one examines the constraints that the Air Force faces, the fact becomes clear that the chances of creating multiple JFACCs within any COCOM are small. Within the single TJFACC construct, the only conduit that the ARFOR commander - no matter what color hat they are wearing - can utilize to coordinate, synchronize and deconflict air operations, cyberspace, space, IO, EW, and STO in support of ground SoM both I/JOA and O/JOA with the Joint Force is by, with, and through the BCD.

JFC Delegated Authorities to the JFACC

Joint Publication 3-0 states that the JFC *normally* delegates coordination authorities to the JFACC.[3] The Joint Force has a misconception concerning this statement. Although the JFC may reserve all authorities, the likelihood of that occurring is extremely unlikely. For example, in the INDOPACOM AOR, the JFC has delegated multiple authorities to the TJFACC including: Targeting Coordination Authority, IO/Non-Kinetic Coordination Authority, Space Coordination Authority, Electronic Attack Coordination Authority, Airspace Control Authority, Collection Coordination Authority, Intelligence, Surveillance, and Reconnaissance Coordination Authority, and Area Air Defense Commander to name a few. There is no other service component that is capable of executing all of these authorities. Problems arise when service components are unclear of the roles and responsibilities incumbent to those authorities and coordination tasks delegated to the JFACC and thus think they can perform these functions.

So, why the JFACC? The JFC will delegate these authorities due to the fact the JFACC possesses the preponderance of air assets and the ability to effectively plan, task, and control Joint Air Operations, as well as coordinate cyberspace, space, EW, and IO capabilities. The JFACC's "weapons system" to execute all of the authorities resides with the AOC.[4] In short, there is no other service component that is capable of executing all of these authorities as effectively as the Air Force does via the weapon system of the AOC.

The JFC historically authorizes the JFACC to synchronize and integrate Joint Fires because the AOC has the command and control infrastructure, adequate facilities with a certified targeting center, a robust intelligence organization, and Joint planning expertise—service component liaisons, Target and Effects Team, Master Air Attack Plan section, DC4, DS4 (and future Space Component Command element), and NKDO—that reside within the AOC. These reasons provide the impetus for ARFOR to utilize the BCD for coordination with the AOC in order to leverage Joint capabilities. Most importantly, with regards to MDO, the land component must rely on the BCD to coordinate, synchronize and deconflict cyberspace, space, EW, IO, and STO operations due to its integration with the JFACC – the habitual coordination authority.

Summary

The U.S. Army has deliberately changed its conception of the way it will conduct warfare in the future. In its first major effort to update its warfighting concept in decades, the Army is seeking to adapt to the concept of MDO. By focusing on employing capabilities in all domains – land, air, sea, cyberspace, and space – MDO seeks to create and exploit windows of overmatch to defeat layered standoff in competition and conflict. As the Army concentrates heavily on its new concept, the role of the BCD and its contributions to MDO must be captured in doctrine – both Army and Joint.

There are shortcomings with the current doctrine, which does not highlight the associated tasks the BCD conducts to advocate for all ARFOR equities with the TJFACC. Most of the force recognizes that the BCD coordinates AI, CAS and SCAR. However, it is not well understood that the BCD coordinates, synchronizes, and deconflicts EW, cyberspace, space, IO, and employment of Army long-range precision Fires with the TJFACC as the coordination authority delegated by the JFC. Additionally, it is imperative that the Army understands the BCD will represent ARFOR whether serving in a green capacity or purple capacity because the BCD

is in the position to do so. There is no other Army organization that has a permanent presence with the coordination authority other than the BCD, nor should there be.

During future conflicts with a peer adversary where multiple JTFs are stood up, the Air Force will establish a single theater-wide JFACC due to its limited resources to service each JTF. Due to the BCD's close integration with the TJFACC, the BCD will advocate for ARFOR for both I/JOA and O/JOA. It will potentially advocate for the MDTF if they are OPCON to the JFMCC, which will face more challenges employing the MDTF effectively due to constraints regarding communications architecture and differing service philosophies of mission command. Clearly, the BCD is in the best position to coordinate and synchronize cross-domain/cross-component effects during MDO in support of LSCO against a peer adversary for all ARFOR.

As leaders and warfighters gain an understanding of what the BCD does, the role of this organization will only become more imperative. Updating the doctrine will facilitate this understanding, as would a deliberate educational piece, both integrated into Professional Military Education schoolhouses coupled with capabilities briefs for the operational force. As the Army continues to place more emphasis on MDO, capabilities such as new weapon systems, more capable munitions, better sensors, and AI technologies for target processing will be fielded. These changes will only solidify the BCD's role as the lynchpin between ARFOR, the TJFACC, and the rest of the Joint Force.

Note: This article is complementary to CW4 Carter's previous article – "Maximizing Joint Targeting Synergy within the USINDOPACOM AOR" – that appeared in the Sep-Oct 2019 issue of the *Field Artillery Bulletin*.

CW4(P) William Carter served as the 5th BCD Targeting Officer from March 2018 to May 2021. CW4(P) Carter has over 26 years of planning, extensive operational intelligence analysis, target development, and Joint targeting experience. He possesses extensive knowledge of CENTCOM and USINDOPACOM AOR and is considered a subject matter expert regarding Joint MDO and Fires at all echelons - tactical, operational, and strategic based on his combat deployments in support of OIF, OEF, and OIR. Additionally, CW4(P) Carter has a broad Fires background as a targeteer and served in multiple positions starting in a Fires Battalion, BCT Targeting Officer, Division Targeting Officer, Corps Targeting Officer, Joint Task Force Targeting Officer, and liaison to an Army Service Component Command.

CW3 Nick Esser served as the 5th BCD Electronic Warfare Technician and Non-Kinetic Targeting Officer from 2020 to 2022. Chief Esser is considered a subject matter expert on Joint MDO and integration of EW, Space, Cyber, IO and STO capabilities into Joint processes. CW3 Esser has a diverse non-kinetic Fires background, having served in positions at Special Operations, BCT, Division, Training and Doctrine Command (EW Instructor), and AOCs in multiple theatres (CENTCOM & INDOPACOM).

MAJ Adam D. Buchanan served as the Deputy Plans Officer for the 5th BCD from the summer of 2020 until the summer of 2022. MAJ Buchanan has extensive Joint operational experience stemming from his assignments as a Fire Support Officer in both conventional and special operations formations during multiple combat tours in support of OIF, OEF, and OIR. Serving as the DIVARTY Operations Officer for 2ID DIVARTY and the Battalion Operations officer for 1-37th FA "Red Lions," he gained valuable experience with towed artillery. A well-rounded Red Leg, MAJ Buchanan also has rocket experience, having commanded HHB and B Battery, 3-27th FA (HIMARS).

Endnotes

1. *Department of the Army, ATP 3-09.13: The Battlefield Coordination Detachment. Washington, D.C.: 24 July 2015*
2. *Ibid*
3. *Joint Staff, Joint Publication 3-0: Joint Operations. Washington D.C.: 22 October 2018.*
4. *"AN/USQ-163 Falconer Air and Space Operations Center", 2011. Global Security website, 2019, n.p. Online. Internet, 15 May 2019. Available from https://www.globalsecurity.org/military/systems/aircraft/systems/an-usq-163.htm.*


"TODAY'S ARMY IS MUCH LESS ABOUT THE KNOWLEDGE YOU HAVE, SO MUCH AS THE KNOWLEDGE YOU CAN SHARE."
FKN
FIRES
KNOWLEDGE
NETWORK
HTTPS://INTRANET.TRADOC.ARMY.MIL/SITES/FKN/

Soldiers of 1st Battalion, 377th Field Artillery Regiment,17th Fires Brigade, fire rounds from their M777 Howitzer during a field training exercise at Yakima Training Center, Washington, Aug. 10–24, 2011. During a deployment the Gunslingers directly support ground units and are a reinforcement artillery battalion. (*Photo by SPC Hannah Frenchick, 20th Public Affairs Detachment)*

The 2022 submission deadlines for the

Field Artillery Professional Bulletin:

Fall edition, Jul. 15
Winter edition, Sep. 1

Submit your articles to: usarmy.sill.fcoe.mbx.bulletins@army.mil

PIN: 212159-000