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# Fires

# Air Defense and Field Artillery Integration with Maneuver

# Fires September-October 2015

**On the cover:** A patriot ballistic missile exits a launcher during an exercise held at an undisclosed location in Southwest Asia, Oct. 1, 2014. The exercise is a U.S. Army Central-led, bilateral combined patriot live fire exercise with host nation, and U.S. Air Force Central Command. It was held to exercise joint and combined air and missile defense operations. The event is intended to increase proficiency, expand levels of military-to-military cooperation, and promote long term regional stability and interoperability.  Photo by Tech. Sgt. Henry Hoegen.

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## Disclaimer



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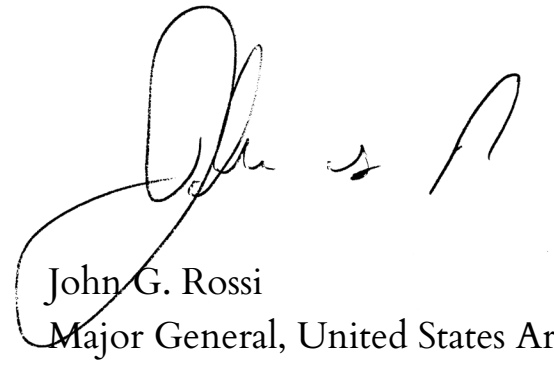

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## Purpose

Originally founded as the Field Artillery Journal, Fires serves as a forum for the discussions of all Fires professionals, both active and reserve components; disseminates professional knowledge about progress, development and best use in campaigns; cultivates a common understanding of the power, limitations and application of joint Fires, both lethal and nonlethal; fosters joint Fires interdependency among the armed services; and promotes the understanding of and interoperability between the branches, all of which contribute to the good of the Army, joint and combined forces, and our nation.

# Transforming Education and Training to Win in a Complex World

CPT Jason Roberts

The Army Operating Concept 2014 states, "The environment the Army will operate in is unknown. The enemy is unknown, the location is unknown, and the coalitions involved are unknown. The problem we are focusing on is how to 'Win in a Complex World.'"

Over the past year, the senior leaders of our Army have published revolutionary visions, through concepts, strategies and doctrine. Force 2025 and Beyond (F2025B) is the Army's strategy to ensure the Army can win in the complex world of the future. According to F2025B, to determine the optimal design for the Army of the future, the strategy focuses along three primary lines of effort:

- Force employment
- Science and technology
- Human performance optimization

The development and publication of Force 2025 and Beyond  and the Army Operating Concept 2014 Army Operating Concept (AOC) demands that we, as an institutional Army, reevaluate how we approach, resource, and execute education and training to meet the needs of Force 2025 and Beyond. "Our Army is transitioning to become a globally responsive, regionally engaged Army capable of decisive action across the range of military operations. Army 2025 focuses on optimizing individual and team performance."

As a branch, it is prudent to ask: How are we aiding this transition?

The Air Defense Artillery Branch is currently setting conditions for arguably the largest transformation in its history to meet the needs of F2025B. The emergence of the Integrated Air Defense Battle Command System (IBCS) will allow air defense assets, specifically weapons systems that have historically deployed in a large highly-centralized format to become more modular, efficient, and lethal at the point of friction; forcing the enemy into multiple dilemmas; and preserving freedom of action across the range of military operations. The Integrated Air Defense Battle Command System

**"The greatest challenge to the Air Defense Artillery Branch transformation is leader development."**
**- BG Christopher L. Spillman**

will enable commanders to tailor organizations, sensors, and weapons to meet the demands of diverse missions, environments, and rules of engagement not achievable today. This incredible technology will directly influence how Air Defense Artillery will answer the Army Warfighting Challenges, specifically 17, 18 and 19.

Although technology will enable this transformation for Air Defense Artillery, technology alone will not win the unknown wars of the future. BG Christopher L. Spillman, Chief of Air Defense Artillery, has noted that "The greatest challenge to the Air Defense Artillery Branch transformation is leader development." To that end, our Soldiers will require a new approach to education, training, and leader development throughout the career span to meet the needs of the future. This in-

stitutional transformation will begin with the Air Defense Artillery Captains Career Course (ADCCC) in November 2015. The institutional transformation of ADCCC will address Army Warfighting Challenges 9 and 10 by leveraging science and technology and transitioning from a task-based approach to an outcome-based approach. These efforts will enable the overarching Air Defense Artillery Branch transformation, BG Spillman's #1 priority, by developing trusted professionals to become agile and adaptive leaders, enable mission command and demonstrate mastery of air defense tactical competencies.

The overarching philosophy of the institutional transformation effort is to align the ADCCC to meet the needs of the AOC, answer applicable Army warfighting challenges and synergize our approach with the Army's Human Dimension Strategy in order to develop agile and adaptive leaders capable of winning in a complex world.

The future unknown and complex world depicted in the AOC requires a shift in approach to training and education. While our weapon systems and technology will no doubt enable victory on any battlefield; there is no amount of certainty of what that venue will look like. As a result, there is no standardized task, condition or standard that will better prepare our Soldiers to win in an environment in which we do not know. To develop agile leaders capable of critical thinking and solving complex problems, we must invest in human performance. "This investment requires changes in the way the Army recruits, trains, educates and manages its Soldiers and Army civilians to produce cohesive teams whose solutions to complex and often-violent human problems are ethically right, tactically sound and strategically appropriate," according to Army Human Dimension Strategy: Building Cohesive Teams to Win in a Complex World.

The strategic approach organizes the human dimension strategy into three broad lines of effort:

- Cognitive Dominance
- Realistic Training
- Institutional Agility

Cognitive dominance focuses on improving the individual through training, education and experience. In order to focus on human performance and leader development we must better assess and develop competency before beginning resident instruction. This development allows for less focus on teaching knowledge-based competency and more on applying the competency to complex problem-solving. Students will be assessed prior to attendance using digitized learning platforms (Blackboard) in order to determine not only areas of weakness but also strengths; focusing on critical air defense competencies. Officers assessed as weak in particular competencies will be required to complete distributive learning courses to attain the knowledge needed to thrive in the course and empower innovative thought through realistic training.

Realistic training develops cohesive teams of Army professionals who can improve and thrive in ambiguous, complex, and challenging situations. Army training historically has focused on standardized procedures for accomplishing tasks, which worked well when the Army had a well-defined mission and a well-defined enemy. To align with the AOC, the ADCCC is evolving to an outcome-based approach, focusing more on achieving commander intended results. Although, how tasks are executed remains important, achieving the result is considered more important than the actions used to attain the

results, provided they are ethical, tactically sound and doctrinally grounded.

The current Army training approach has accomplished exactly what it was designed to do; however, it was formed in a different time, for a different need, to meet the challenges of a different world. This new approach to training and education will allow the ADCCC and eventually the entire Air Defense Artillery School to educate and develop Soldiers to win in the complex world of 2025 and beyond.

Army Warfighting Challenges (AWfC) addressed through the Air Defense Artillery Branch Transformation

- **AWfC #9: Improve Soldier, Leader and Team Performance.** How to develop resilient Soldiers, adaptive leaders and cohesive teams committed to the Army professional ethic, who are capable of accomplishing the mission in environments of uncertainty and persistent danger.
- **AWfC #10: Develop Agile and Adaptive Leaders.** How to develop agile, adaptive and innovative leaders who thrive in conditions of uncertainty and chaos, and are capable of visualizing, describing, directing, and leading/assessing operations in complex environments and against adaptive enemies.
- **AWfC #17: Integrate Fires.** How to coordinate and integrate Army and joint, interagency, intergovernmental and multi-national (JIM) Fires in combined arms, air-ground operations to defeat the enemy and preserve freedom of action across the range of military operations.
- **AWfC #18: Deliver Fires.** How to deliver Fires to defeat the enemy and preserve freedom of action across the range of military operations.
- **AWfC #19 Exercise Mission Command.** How to understand, visualize, describe and direct operations consistent with the philosophy of mission command to seize the initiative over the enemy and accomplish the mission across the range of military operations.

A note on Institutional Agility: The comprehensive nature of Institutional Agility will be addressed in later articles. The Air Defense Artillery Branch is currently developing a comprehensive talent management strategy designed to develop leader attributes in coordination with the Fires Leader Development Strategy and better optimize talent management and human performance throughout an Army career.

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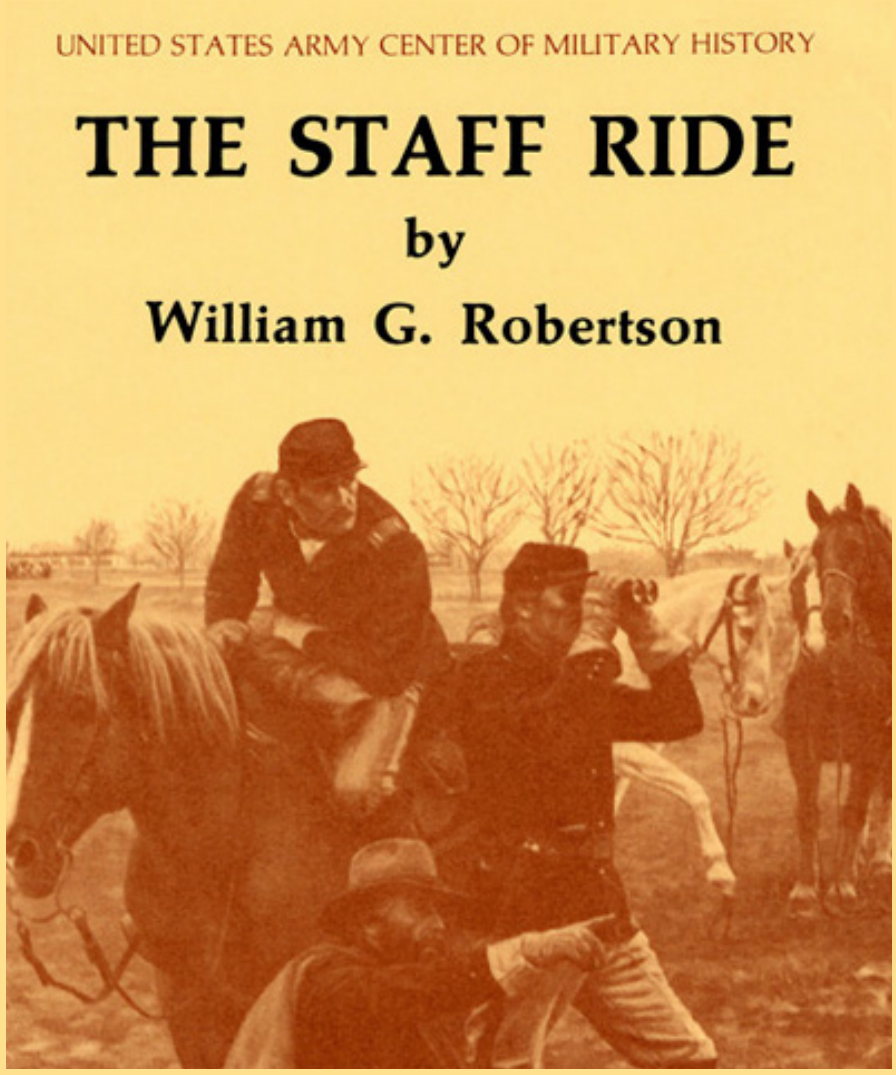
# Revisiting "The Staff Ride"

## Using William G. Robertson's work as a Tool to Increase Participant Involvement

By CPT Patrick O. Boling

As the number of unit deployments draws down, budgets are reduced, and doctrine transitions from full spectrum operations to unified land operation. Staff rides offer unit leadership an opportunity to develop subordinate leaders and build team cohesion but, staff rides are only successful when serious effort is undertaken in the planning and execution. Budget cuts have made the expenditure of funds much more scrutinized, which only increases the need to make staff rides worth the expense. "The Staff Ride," by William G. Robertson, is a guide to make them successful. In the pamphlet, Robertson states, "Participant involvement is critical for success." The logic he uses to justify his statement is sound, clear and concise and could help build upon the understanding of all parties. An opportunity therefore exists to make the process of the staff ride transparent to the student. When leaders are transparent in their motives and methods, they are free to share their full intent. This is also true in understanding why and how staff rides are conducted. This article will briefly review the potential use of "The Staff Ride," by Robertson as a tool to increase participation during a staff ride.

There are many opportunities to learn from the past. For example, a study of Task Force Smith in Korea, gives a full impression of what is meant when former Army Chief of Staff, GEN Gordon Sullivan used the "No More Task Force Smiths" as a motto. I first learned about Task Force Smith on a staff ride while stationed in Korea. The case of Task Force Smith can appear as a failure of the Task Force Smith's




leadership but careful study proves this to be untrue. When we study the events and circumstances surrounding Task Force Smith, it reveals a force distracted from training and ill-equipped for combat.

"The Staff Ride," is an excellent method for which to explore the past. Published as a 35-page pamphlet "The Staff Ride," is easy to read and functions as a planning guide for the execution of the staff ride. It should be read by participants in a staff ride for two reasons: 1) It provides sound advice for researching and studying in preparation for the staff ride. 2) It explains in the simplest terms how to conduct a staff ride and why certain actions are recommended. By understanding the how and why, participants can easily anticipate and prepare for opportunities to engage in conversation and maintain situational awareness. With shared

understanding added to a clear intent of a staff ride, unit members can move beyond mere passive observer toward active participant.

The sections that discuss the purpose and objectives, the preliminary study phase, the field study phase, the integrations phase, sources, and secondary benefits highlight the development of shared understanding. Robertson states the purpose of the staff ride is to develop military leaders. He expands on this in the "purpose and objectives" section by describing how to frame the intent and develop the lens for which to visualize and describe the case study. In the preliminary study section, Robertson explains the outline of the study and preferred depth of study. The preliminary phase also serves as the foundation of the staff ride, building the required knowledge to begin developing understanding. This phase is the first opportunity to introduce "The Staff Ride," deepening the understanding by making transparent the intent study two levels up; organizer and instructor levels. In the field study phase, design is critical to ensure maximizing efficient use of time. During the conduct of the field study phase, using multiple engagement techniques is critical for maintaining participant involvement. In this phase, if participants understand the intent behind the different techniques they can anticipate them and therefore better prepare which aids in the maintenance of efficient execution. According to Robertson, follow-through is critical in the integration phase through effective post mortem analysis of conversation and learning that took place during the preliminary study and field study phases. In regards to the sources, the first concern is a preference for primary sources over the secondary sources. Secondary sources are often depiction filtered by interpretation and editing of possible key elements of information. However, primary sources are not exempt from fault since the author may be biased by self-interest and perception.

In closing, staff rides serve as a vehicle for additional leader development. "The Staff Ride," is a clear and concise guide on conducting staff rides. "The Staff Ride," is a reference that can also be shared with all participants to expand their understanding. When leaders are transparent in regard to motives and methods, they are free to share their full intent. An opportunity therefore exists to make the process of the staff ride transparent to the students.

Additional notes of a former Field Artillery Captains Career Course small group leader/instructor: Doctrine has changed and we should not just focus on fighting the last war, but prepare for the next. The past has more to offer than what we have experienced over the last 12 years. As I communicate to students what unified land operations are, I find myself bridging full spectrum operations by relating it to wide area security and comparing combined arms maneuver to the air-land battle. Many, like myself, have military experience in the era of air-land battle doctrine. Those of us with understanding of combined arms maneuver, should exploit opportunities to share the broader institutional knowledge before it is lost to promotion, retirement and separation.

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# Dynamic Airspace Management

## Airspace Management in support of Combined Arms Maneuver

By MAJ R. Smith Griggs

At all echelons, airspace users collect information; deliver direct and indirect Fires; and conduct air operations, sustainment, and air and missile defense. Forecasting and integrating airspace user requirements challenges Army airspace planners. Over the past 12 years, the static posture of our forces within the operational environments in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) led to a tendency to deconflict airspace users in ways that prohibit concurrent, synergistic effects. Unfortunately, the airspace-related competencies that existed before OIF/OEF have atrophied through lack of repetition. This decline in airspace management proficiency is exacerbated by similar neglect with regard to reconciling the air control order's 24-hour cycle with the continuously evolving requirements of decisive action within unified land operations (ULO). Despite a lack of training emphasis within units while the Army focused on counter-insurgency operations, the Army stands better postured to integrate airspace users into decisive action operations than ever before. Advances in the Army Battle Command Systems (ABCS) architecture and training opportunities provided by the Fires Center of Excellence's Air Defense Airspace Management / Brigade Aviation Element (ADAM/BAE) Course have set the conditions to improve the ground commander's approach to airspace management.

Two steps are necessary to reconcile the joint community's time-based airspace management process with the dynamic, event-driven nature of ground plans and

operations. The first is returning to our doctrinal approach of airspace planning while managing large blocks of airspace at the brigade combat team and division levels. The second is utilizing unit-level airspace control orders to increase the responsiveness of airspace management in support of highly dynamic environments. The first step is a technique to use existing doctrine. The second is a new idea to leverage the improved capabilities of our matured ABCS. They are complimentary and build upon the developing proficiencies found in the joint community.

Army tactical planners may develop unit airspace plans (UAP) to facilitate unrestricted Fires while simultaneously permitting the execution of missions by other airspace users. The included methodology attempts to optimize UAPs for their application to combined arms maneuver-focused operations. This is accomplished by enabling planners to rapidly update procedural control measures to changing tactical situations within a theater's airspace control order (ACO) and air tasking order (ATO) cycle. Collectively, the ideas put forward are an untested hypothesis, but are grounded in experiences gained as a member of an ADAM/BAE cell. Recognizing that the personal experience of one individual is insufficient to fully develop this idea, this article is submitted as an invitation to current and aspiring subject matter experts to provide their constructive insights and assist in developing and shaping our unit airspace planning and execution practices.

Commanders shape their airspace usage priorities in response to their operational environment. During the past 12 years, the predominant, aircraft-permissive prioritization relegated indirect Fires to use on an "if no one else is in the airspace" basis. As a result, when Fires are employed, it is not uncommon to observe all air-based enablers being pushed from the area for deconfliction. This effectively disables the sensor to shooter linkage and prevents synergistic effects. As the Army transitions from conflicts dominated by counterinsurgency (COIN) and rebalances wide area security and combined arms maneuver competencies, our airspace usage priorities and the resulting approach toward airspace management must shift to facilitate the immediate massing of Fires at the expense of aviation's unrestricted freedom of maneuver.

The joint community brings exceptional capabilities to bear through air-based platforms. Though their effectiveness is proven, the limited platform availability and their limited payload and station times prevent them from delivering the sustained Fires required to defeat a peer or near-peer adversary. The Army's Field Artillery branch is best postured to provide the sustained, massed effects that combined arms maneuver requires. Similar to how Fires deferred to all other airspace users during the execution of counterinsurgency, stability, and support operations, during decisive action, units must learn to plan the utilization of airborne enablers around the flight trajectory of Fires munitions and then restrict their operations to designated airspace to maintain a flexible Fires plan. The continuous integration of airborne enablers while employing responsive artillery requires a dynamic, Fires-centric approach to unit airspace planning.

The coordinating altitude (CA) is the theater-specified altitude that delineates a change in the coordination authority, normally corresponding with the coordination level in which ownership of airspace transfers from the ground forces to the joint force air component commander. Functionally, this separates fixed- and ro-

tary-wing aircraft. Though the CA is not restrictive, an expectation has developed while the Army focused on stability operations that anything, to include artillery munitions, rising above the CA is coordinated with the appropriate controlling authorities—adding latency to the Fires process. In theaters predominantly characterized by high-intensity conflict, the theater coordination altitude should be set at a level to not interfere with brigade-level Fires. Doctrinally, in this environment, air power is concentrated on the interdiction of forces beyond the fire support coordination line (FSCL). In hybrid environments, joint assets are applied more readily throughout the deep, close and security areas. As a result, the CA is frequently lowered to grant increased freedom of maneuver to joint, airborne assets. In complex environments where the combined arms maneuver and wide-area security competencies are executed simultaneously, it is improbable that the theater CA meets the needs of all units conducting operations. When ground commanders fail to state their intention to manage the airspace relevant to their operations, there are two critical, negative effects—increased latency during Fires due to coordination expectations and an inability to adapt the UAP to events occurring within the airspace control order's 24-hour cycle.

As improved systems expand the range over which the Army is capable of exercising mission command, the time has come to apply this to the third dimension as well. The first step is breaking the COIN airspace paradigm by shifting the perception of common airspace usage prioritization that has become internalized over the past 12 years. A means to identify and assume management of the volume of airspace pertinent to the brigade's areas of operation (AO) is also necessary to prevent delays for clearance of Fires and increase the responsiveness of unit airspace plans. The proposed methodology meets these needs while continuing to mitigate the risk of fratricide to airborne enablers Publishing specific control measures informs airspace users that the ground commander is assuming airspace management responsibilities and must be coordinated with prior to entry into the unit's AOs. At least two tools exist to help commanders gain control of their vertical AOs. The first of these tools is the high-density airspace control zone (HIDACZ). Army doctrine suggests that corps and divisional-level headquarters possess the staff necessary to control a HIDACZ. Doctrine continues to state that with air traffic control (ATC) augmentation, brigade combat teams with an ADAM/BAE can control a HIDACZ for a limited time. The other tool is simply a restricted operations area (ROA) with specified intent appropriately included while requesting its establishment. Regardless of which airspace control measure is submitted, the instructions included must clearly state that the requesting unit is planning high volumes of indirect Fires in conjunction with the employment of rotary-wing, unmanned, and fixed-wing assets.

The final component of this methodology consists of adapting the unit airspace plan to a rapidly evolving battlefield. Without a new approach, this is nearly impossible due to the Joint air component's planning of the theater airspace control order on a 72-hour cycle and its publishing on a 24-hour cycle. To work within these planning constraints, the brigade develops its own internal airspace control order nested with that of higher. During planning, the ADAM/BAE, tactical air control party (TAC-P), and brigade fire support cell

work together, in a similar capacity that a division's joint air-ground integration center (JAGIC) would, to identify and plan airspace requirements based on the ground scheme of maneuver and Fires plans. These planners must forecast the requirements as necessary to meet airspace control means request submission timelines. This results in the aforementioned HIDACZs or ROAs that transfer control of large volumes of airspace above the brigade's maneuver area to the brigade. Through this and the airspace control measure's included instructions, entities external to the brigade understand the requirement to coordinate prior to entering the unit's airspace. During this coordination, key information for situational awareness and directives, as necessary, are provided to the inbound airborne enabler to synchronize its maneuver and effects with other airspace users in the brigade's AOs.

With mechanisms in place to coordinate with non-organic enablers, the unit may develop additional airspace control measures (ACM) within the HIDACZ or ROA. These sub-ACMs represent the requirements of airspace users' flight paths and areas of operation. They are deconflicted and then pushed to the unit's organic fire batteries and airspace users for execution. Digitally, they are published by the Tactical Airspace Integration System (TAIS) to the Data Dissemination Services (DDS), as a component of a unit-specific ACO. Once published to the DDS, the unit's ACO becomes accessible to the ABCS of all echelons subscribing to the unit's publications in the same manner that the theater ACO is published. The only difference is that the brigade may enhance the utility of the original theater ACO by adding to or removing previously added control measures at any time interval they choose. By pushing an update and receiving acknowledgement of implementation, the safety functions inherent in ABCS—specifically the Advanced Field Artillery Tactical Data System (AFATDS)—are leveraged to reduce the risk of fratricide by using airspace control measures as fire control measures in the third dimension.

Unit airspace plan development occurs as a component of course of action development. It differs from the development of other control measures only with respect to the expertise necessary to visualize and communicate how the airspace plan supports the ground scheme of maneuver. During course of action development, Fires planners determine the position areas for their artillery (PAA), planned targets, target areas of interest, target reference points and other control measures as necessary. These, along with the maneuver graphics, provide an initial framework for Fires-permissive unit airspace planning to begin. Analysis of projectile flight trajectory between these locations, with respect to both low- and high-trajectory flight paths for anticipated munitions under forecasted meteorological conditions, allows the rapid planning of bands of restricted airspace allocated for Fires. The max trajectory altitude, plus a safety margin, becomes the ceiling for the brigade's HIDACZ or ROA. A lower altitude may be chosen, with the understanding that employing higher-trajectory Fires than initially planned requires additional coordination. Within the requested HIDACZ or ROA, airspace is further blocked off for the continuous execution of Fires missions from PAAs. Around the airspace blocked off for artillery, tentative flight paths and restricted operations areas are planned to procedurally control the movement of enablers (rotary-wing, fixed-wing, electronic warfare, unmanned aerial systems (UAS), etc.) to operating areas that

facilitate the employment of their effects. Depending on the asset and situation, the planners may grant the airspace user freedom to maneuver within non-restricted airspace or confine them to operational areas. Regardless of the approach, the inclusion of the supporting units who provide these enablers while determining flight routes and operational areas is paramount.

A step-by-step guide to using this planning methodology:

Airspace and Fires planners assist in the development of the ground scheme of maneuver to ensure an understanding of the lateral boundaries and rates of movement. This understanding shapes the two-dimensional parameters of airspace requirements.

Unit airspace planning during combined arms maneuver begins with Fires planning. position areas for artillery (PAA) for major Fires systems, target groups, target reference points (TRPs), and other areas where anticipated Fires are planned and templated.

Artillery trajectory charts are used to determine the max altitude of planned Fires using high and low trajectories calculated for various munitions under forecasted meteorological conditions—framing the airspace requirements.

Airspace control measure requests are submitted for a HIDACZ or ROA to block off and gain control of the airspace necessary to facilitate Fires without delaying for clearance outside of the organization.

Develop and publish restricted airspace based on the Fires trajectories to include appropriate horizontal and vertical safety buffers. Publish these to the theater airspace control order in addition to previous ACMR from Step 4.

Assess the airspace requirements of other airspace users: Rotary-wing attack/recon, electronic warfare platforms, fixed-wing platforms, and unmanned systems. Develop airspace around Fires restricted operating areas (ROA) at an altitude and span sufficient to facilitate their maneuver and the delivery of their intended effects.

Develop air corridors as necessary to facilitate transitions to and from areas where airspace users will operate. Designate airspace operational areas as required. This includes initial points, release points, air corridors for rotary-wing aircraft and unmanned systems, and operating zones from which collection takes place or effects are applied.

The operation of small unmanned aircraft systems (SUAS) is prohibited within the areas designated for use by other airborne enablers. Clearance to operate SUAS is delegated to the lowest level that maintains visibility of the unit's airspace plan. When launched, airspace requirements are communicated upward, restricted operating zones are established, and notification is pushed to other airborne assets in the vicinity.

Keep higher echelons informed of the status of the unit's airspace plan by making the unit-specific ACO available on the DDS with every revision and providing notification of major changes.

Publish updated, brigade-internal airspace control orders as required to manage the airspace controlled by the brigade. Ensure publication on the DDS reflects updates to the ACO and is accessible to higher and lower echelons.

Confirm receipt and implementation by units that must execute operations off of the updated ACO.

Utilize radar systems and data links to track airspace user compliance with procedural controls.

The completed unit airspace plan should section off all airspace included in the unit's

AOs up to the max trajectory of its Fires platforms. An encompassing airspace control means request (ACMREQ) must be submitted in time for publication in the airspace control order. This single act enables the unit to employ and adjust planned Fires without delaying for coordinating through the air component command or other external agencies. It allows the ground unit to assume control over the unit's airspace. Essential to this approach is the brigade's airspace managers utilizing all means to maintain an accurate understanding of the air picture and communicating relevant situational information and appropriate directions to enablers who are unable to receive updates to airspace control measures during mission execution.

Utilizing airspace planning that prioritizes Fires while enabling maneuver in the third dimension may require a battle drill transition from clearance of Fires procedures to procedures that grant approval to airspace users prior to their launch or entry into the airspace controlled by the brigade. For instance, after the unit airspace plan has been published to the airspace control order, the unit will activate and deactivate air corridors and operating zones as necessary to facilitate movement on the battlefield. Prior to an air asset being granted permission to launch, the unit activates the relevant airspace control measures (ACM) and receives confirmation from subordinate units that the ACMs are active in their ABCS. When activated, the ACM will alert units engaged in Fires missions if they might potentially fire through an active control measure. The crew is prompted to adjust their firing solution or pass the mission to another battery to prevent incident. With our disciplined aircrews confining themselves to airspace designated for their operations, this greatly reduces the chance of mid-air collision or fratricide. The appropriate ACM size for proper deconfliction and facilitating appropriate freedom of maneuver will vary with the mission, situation, and environmental conditions.

Training for decisive action against a hybrid thread within dynamic operational environments requires us to assess the practices we have relied upon for the past 12 years and determine how these practices may evolve. This methodology is an attempt to codify how airspace users may leverage our existing doctrine and ABCS architecture to better meet the needs of ground commanders. Expanding the ground commander's AOs further into the third dimension and utilizing dynamic, unit-level airspace control orders is essential to obtaining the flexibility and responsiveness necessary to succeed during decisive action on the modern battlefield. Currently, these ideas require validation. You are invited to assist in testing these and any other theories to discover the Army's next best practices.

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# Targeting is Targeting

By CW2 Travis E. Smith

The purpose of this article is to outline a way to conduct the targeting process during garrison operations. Garrison targeting will focus the brigade combat team (BCT) staff on internal functions while training the staff to conduct targeting in an operational environment. A garrison targeting process follows the same structure as the operational process to gain efficiency. Tasks developed during the process follow the same flow as they would in the operational process. This process will provide synchronization for the staff, prioritization of tasks, and will lead your unit to mission accomplishment within a garrison environment.

## Targeting in Garrison

The targeting process is a science that relies on mathematical measurements, which denote whether something has changed based on a pre-determined commander's vision and end state. The basis of this science resides in the Decide, Detect, Deliver and Assess framework. The critical piece of any targeting process is "Assess." Without a formalized method of assessing our actions on the operational environment, the overall process will fail due to decisions made on irrelevant data. If the targeting process is a work of art, how does the staff master the art? How can we develop a process months ahead of a combat training center (CTC) rotation? Can a staff utilize a different way of conducting targeting that will develop the process earlier, without a tactical order on hand? The answers to these questions are the same. Utilizing the targeting process during garrison operations will aid in staff development, training, and will provide a tested process to use for CTC rotations and future deployments.

The staff can easily do this by applying the methodology of the targeting process to assess training, personnel, readiness, equipment and other requirements during garrison operations. The garrison targeting process requires the adherence to the four targeting principles required to conduct operational targeting. The process focuses the staff to achieve the commander's objectives, the staff uses non-lethal means to determine desired effects, the staff must participate across all War Fighting Functions (WFF) and the staff conducts analysis, prioritization and assigns an asset/enabler to achieve the desired effects. The assets/enablers become the garrison agencies that must synchronize in order to conduct military training events. Joint Publication (JP) 3-60, Joint Targeting, states, "A target is an entity (person, place, or thing) considered for possible engagement or action to alter or neutralize the function it performs for the adversary." Garrison targeting uses this definition to identify the entities and objects as internal unit personnel and functions. To summarize, the only change to targeting from operational to garrison is the focal point, enemy (operational) and internal (garrison).

One of the main reasons for implementing a garrison process should be to work through as many targeting cycles as possible to perfect the process used in combat operations. Many units travel to the Leaders Training Program (LTP) prior to a CTC rotation without a fully developed targeting process. LTP is not intended to develop the targeting process, it is arranged to improve the Military Decision-Making

Process (MDMP) that will drive the operations during the rotation. Units operate this way not from a lack of understanding; it comes from a desire to use targeting only for operational purposes. Units tend to shrug off the process used during deployment, only to rely upon a lackluster system to track our training and readiness for the next deployment. Do we know if our unit training level meets Mission Essential Task List (METL) requirements? Is the METL assessment formal and based upon quantifiable data, or have we based the assessment on false or subjective data?

Another reason for implementing a garrison targeting process includes the development of the assessments of garrison-related tasks. The staff at all levels must be able to provide the assessments of training other than the three letters T, P and U. While conducting targeting during combat operations, measures of performance (MOP) ask the unit if the mission execution was according to standard. If the execution of the task deviates from the approved execution, the MOP is not accomplished. The staff designs the measures of effectiveness (MOE) to assess the desired effect of the training event on the end state. Conducting assessments in this manner provides the commander with an assessment of unit capabilities, MOP, and the projected impact on future operations, MOE. The unit's training proficiency during garrison operations prepares them for the eventual deployment to an operational environment. Adopting a formal system of assessment will enable the staff to identify critical shortfalls in training early enough to correct the deficiencies prior to deploying to a combat environment.

Utilizing the targeting process to drive operations in garrison could lead to several positive changes. The targeting process provides synchronization for the staff and forces the staff to practice the targeting process prior to a brigade field training exercise (FTX), CTC rotation, or even deployments. The staff can alleviate a large percentage of the "everything is a priority" tasks. Additionally, when utilizing the MOP and MOE assessment criteria, the staff will truly assess the METL, overall strengths, and the team. This will also allow the commander to know his full formation for future decisions.

Additionally, the transition to operational environment targeting will become fluid. Units that apply this system will not have the slow start most units will feel upon arrival. Instead, they can hit the ground running. Units can train on this process for several months prior to their CTC rotation and deployment. The only flaw at this point is the work to build and implement the process!

## Implementing the Process

Prior to beginning the iterative process of targeting for operational environments, the staff conducts design and MDMP for the assigned mission. One of the slight differences between garrison and operational targeting is not necessarily conducting MDMP. The operational environment for garrison targeting is the brigade, battalion or company, so the higher unit mission and subsequent outreach to deployed units is not required. Development of a concept sketch will aid in developing understanding within the staff for the targeting process. The concept sketch at a minimum, should display task development through assessment. See Figure 1.

The garrison process will require elements of the design methodology to develop current assessments, develop initial commander's intent, to look forward into the future and project a desired end state,

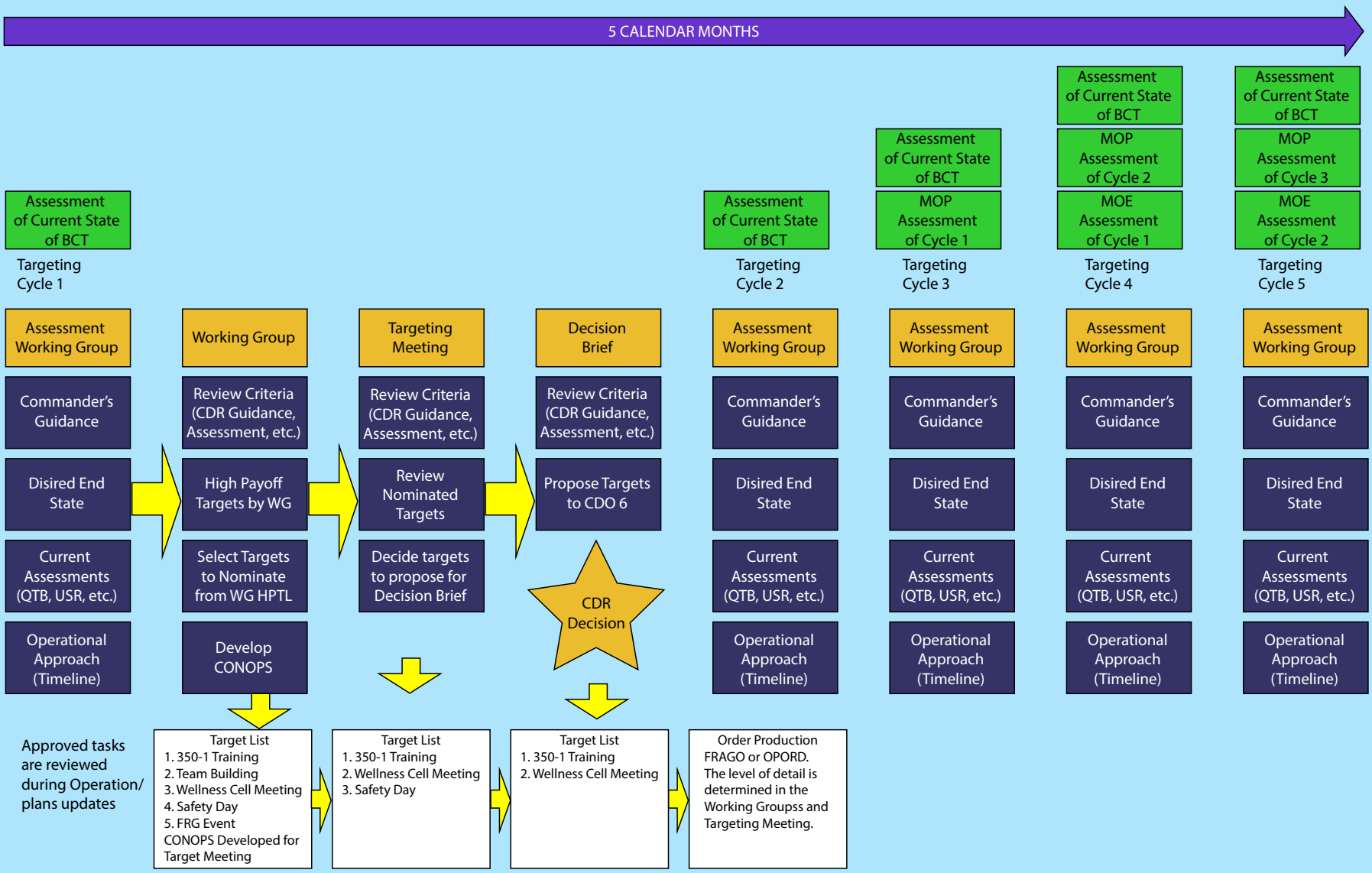


Figure 1: The initial concept and extended sketch for garrison targeting assessing the impact over 5 calendar months. *Illustration by Rick Paape, information provided by CW2 Travis Smith.*

and to identify lines of effort. The next step in developing a working process is developing the operational approach with LOE and conceptual end states. The conceptual end states will develop further as the staff comes together and identifies the realistic LOE end states by WFF. In order to help identify the timeframe for end state accomplishment, the design team designates a point on the long range planning calendar (LRPC). This point can be prior to a CTC rotation, or deployment. The final assessment of the unit should provide the commander with a complete snapshot of the unit. The LOEs need to be broad enough to encompass the majority of garrison tasks normally associated with the defined subject, but precise enough to limit ambiguity. An example is readiness, ready and resilient campaign (R2C), or training. The LOE working groups could, and should, take the place of the normal meetings, like the training meeting.

The unit executive officer (XO) will assign the staff responsibility over a developed LOE by WFF. The staff action officer for the LOE is required to determine a feasible/accomplishible end state as outlined in the operational approach. Additionally, the staff proponent will need to conduct a pre-working group meeting in order to outline 2-3 steps necessary to accomplish their end state. These steps will provide initial decision points for the working group. These steps are still somewhat broad, but each cycle the working group will propose tasks for the unit/units to conduct in order to provide assessments for the decision points. See Figure 2 for a sample campaign plan with developed end states.

After developing the concept sketch and the campaign plan, the staff will present

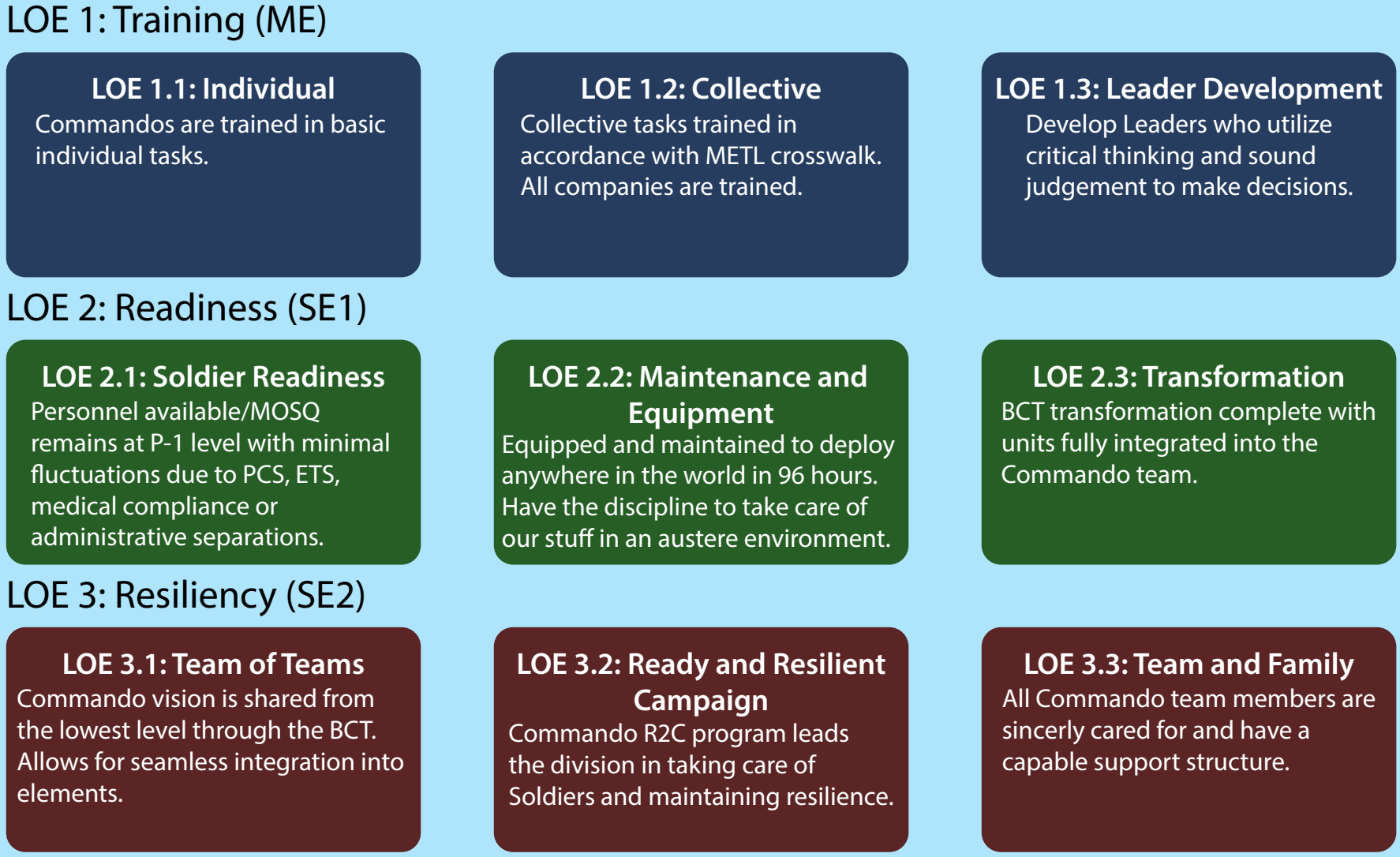


Figure 2: The operational approach for garrison operations used from the fourth quarter FY14 to the third quarter FY15. *Illustration by Rick Paape, information provided by CW2 Travis Smith*

the process to the commander for decision. The staff will ask the commander to decide on the implementation of the process after reviewing the campaign plan and concept sketch. This can also be accomplished with a desk-side brief to the commander with the XO and/or S-3. After the commander approves utilization of a garrison targeting process, the next step is to place the meetings onto the battle rhythm. If a battle rhythm is not in place, be prepared to provide an example to the commander during the decision. The implementation of a battle rhythm is the decisive piece for sustaining the targeting process. Starting the process will involve developing assessments, as each meeting will review the assessments in order to identify tasks that are required to accomplish the end state. The working groups will need a starting point.

Assessments are the primary driving force behind the garrison targeting concept. The assessments must incorporate using MOP and MOE. JP 3-60 states, "MOP answer the question, 'Are we doing things right?' In other words did the unit accomplish the task assigned to it, in the manner outlined for completion of the task? "MOE answers the question, "Are we doing the right things?"" (Joint Targeting 2013, C-7) The Targeting Process" 2010) For MOEs, we are looking for the desired effect of the task. In garrison, we can look at increases or decreases in actions taken by our Soldiers. The garrison MOEs, much like non-lethal MOEs associated with operational targeting, will take time for the assessments to be reported. This does not make the assessments less important, as decisions will require accurate and relevant data. Attempting to measure the impact of a training event on overall readiness will take time, but immediate results can be gathered through creative questions during

| MOE | Indicators | Weight | Assess | Evidence/Reporting |
|---|---|---|---|---|
| MOE 2.1.1 - Increase in unit readiness levels in medical, physical and spiritual readiness as compared to FY14 | Percent of Soldiers meeting body composition standards | | | |
| | Number of Soldiers MRC 1 and 2 categories | | | |
| | Number of missed medical, dental, and behavior health appointments | | | |
| | Number of master fitness/MAW certified instructors | | | |
| MOE 3.2.4 - Decrease in high risk or negative behavior as compared to 4th quarter FY13 | Number of domestic or child abuse cases | | | |
| | Number of alcohol or drug related offenses | 2.5 | ↓ | 3 alcohol related incidents during 4th quarter FY14, 10 incidents during |
| | Number of suicide attempts or ideation | | | |
| | Number of sexual assault cases | | | |
| MOE 3.2.5 - Increase in participation with transition and sponsorship programs as compared to FY14 | Percent of Soldiers complete SFL-TAP program | | | |
| | Percent of Soldiers contacted by sponsor or mentor prior to arrival | | | |
| | Percent of Soldiers completed pre-seperation counseling 12 months prior to ETS | | | |
| | Number of Soldiers processed through IDES within 100 day standard | | | |

Figure 3: MOE assessment format. *Illustration by Rick Paape, information provided by CW2 Travis Smith*

After Action Reviews (AAR). Care must be taken to understand that the immediate results may or may not predict future performance. Immediate, near-term and long-term MOEs can be developed to provide a comprehensive assessment.

For the 2nd BCT, 10th Mountain Division process, the MOEs have been broken down further to identify the indicators that build towards MOE accomplishment. In the example below, Figure 3, the MOE is developed by identifying the increase or decrease of the desired effect, as compared to a similar time period. This is fairly simple for garrison targeting, as the desired effects are changes to data points that are required for reporting. For instance, alcohol related incidents are reported each month or quarter, a decrease in alcohol related incidents would be compared to the same time period as the last fiscal year (FY). Additionally, each indicator is given a weight of 2.5, in order to accomplish the MOE the overall weight must be 7.5-10. MOEs and indicators should be tied to decision points for the commander. The indicators can also be tailored to answer specific questions. Were all subordinate units able to complete training during the allotted time period? Additional time allocated on LRPC. Was the training conducted in the proper facility/range? Did the task require outside agency support? Mobile Training Team.

A key aspect of developing the garrison process is that the products used for executing the process should be the same products that are used for the operational process. In order to continue to receive maximum support and target development for the operational process, ensure that

changes to the products are minor and do not create confusion. The participants in the working group will come from across the staff, to include subordinate unit liaison officers (LNO), so simplicity in the process is important. This process does not require 50–100 slides, the working groups are more effective with discussion, and the staff should not have to dedicate half of the duty day to get through one meeting. Keep the meetings as short as needed, keep the process simple to understand to keep the staff functional and efficient.

As discussed above, LNOs are required from subordinate units. The operational process will require LNOs to ensure that the staff is not planning in a vacuum. The garrison process requires the same personnel. During the process, the staff will identify tasks that will involve subordinate units and will take time away from their training plans. Additionally, it will require the subordinate units to nest their operations within the construct of the garrison process. These two reasons are not detrimental to the process if the LNOs actively participate within the process and within their unit. Units that select their best officers to become LNOs, will make the overall team better and will have a greater impact on the subordinate unit's operations. A targeting process without participation from the subordinate units may not function at full capacity.

## The Meetings

### Assessments working group

The process begins with the assessments working group (AWG). During the AWG, the entire targeting team is present to review the consolidated assessments, MOP and MOE, to provide a current picture of the unit prior to task development for the cycle. This meeting identifies changes to previous cycle assessments, identifies staff section responsibility to provide updates to assessments, and prepares the staff for the cycle. Additionally, the staff will review the end states and the commander's intent for the current cycle. The working groups will meet, according to the battle rhythm, upon completion of the AWG.

### Working Groups

The working groups for this process will be the driving force behind task (target) development. The working groups meet to discuss current and past cycle assessments, future recommendations for the quarterly training guidance and tasks to complete to achieve the end state. The working groups become focus groups for their individual areas. For example, the training working group will focus primarily on the training proficiency of the unit in relation to the approved METL. Officers, noncommissioned officers (NCO), and other on post agencies outside of the BCT staff participate in these meetings as LNO or as subject matter experts (SME). R2C, for instance, has an abundance of SMEs at division-level or at Army Community Service (ACS) that provide vital information for task development (these outside agencies compare to the interagency subject matter experts available during operations in theater or in a joint environment). The working groups compile the targets/tasks in continuous operations (CONOP) format for proposal during the targeting meeting. It is the responsibility of the working group lead to establish the assessment criteria for each target. If the assessment criteria fail to define the desired effect, the assessment will be subjective or open for interpretation. The results of inadequate assessments will reflect on multiple engagements of the same or similar task.

### Targeting Meeting

The targeting meeting synchronizes all developed tasks from the working groups. Due to limited funding, enabler support, additional resources and white space on the LRPC, synchronization and prioritization of the tasks must happen during the targeting meeting. Additionally, we review our overall end states, commander's intent, and current assessments. The team prioritizes the task proposals according to the impact towards the end state, the commander's intent and available white space on the LRPC. Additionally, this meeting provides the Executive Officer (XO) and the Deputy Commanding Officer (DCO) a current picture of the targeting cycle to aid in the delivery of the decision brief.

### Decision Brief

The decision brief is the forum for each LOE lead to present nominated targets to the commander for approval. The commander receives a review of the end states, the intent, and current assessments prior to the presentation of the targets. Assessments provided to the commander include analysis of the current state of the unit and troop to task ratios. The commander needs to know where the unit stands in space and time in relation to the end state and their intent. During the presentation of tasks to the commander, each LOE lead will provide the purpose for the task for decision. The purpose should reflect the impact that the task will have on the accomplishment of the end state. Upon approval, targets then move to the task tracker for execution, further planning (dependant on the complexity of the task), or awaiting timeline to publish in the weekly fragmentary order (FRAGO). The decision brief is also the forum to ask for commander's intent for the next targeting cycle. The current assessments could reflect a shift in direction, in which the commander could update the targeting team on the intent. This may also require a FRAGO to update all units involved on the shift in commander's intent.

### Task Evolution

A task simply does not just appear on the training calendar. If assessments are clear and tied to decision points, identification of tasks will become second nature to the staff. The working groups must be meticulous when developing tasks. Keep in mind that an individual's good idea equates to major muscle movements within the subordinate units. The targeting team must ensure that all tasks nest with the end state and commander's intent.

For sample, during the AWG, the staff identifies a negative increase in alcohol related incidents across the unit. The R2C working group attendees acknowledge the trend and begin to formulate solutions. During the R2C working group, discussion focuses on tasks that can reverse the trend within the unit. These tasks can include; increased emphasis on safety briefings, training events, and increased leader involvement. One task that the staff presented to the commander is a training event, in which a person who has lost a family member by a drunk driver will speak to each subordinate unit. An additional task is to locate a person who killed someone while driving drunk to speak during a one-hour time block. The working group assigned the task to an action officer to develop for the targeting meeting.

During the targeting meeting, the action officer presents the developed task and identifies enablers/resources required. This task requires the use of the post theater and outside agency support. The action officer ensures that the Division Army Substance Abuse Program (ASAP) representative is present for the decision brief.  The S-3

identifies white space on the calendar to the action officer on possible dates for the class. This task is given a date of 12-weeks out. During the decision brief, the commander receives the updates to the assessments, with emphasis on the measurements that associate with the presented tasks. The ASAP representative provides emphasis for the task and individuals who will present their story. The ASAP representative reports that the individual who killed someone while driving drunk cannot access the installation due to felony conviction.  The action officer then asks the commander for the decision on the presented task and the commander either approves, disapproves or modifies the task.

The assigned MOP/MOE for the task becomes available for assessment upon completion of the task. The MOE will measure the alcohol related incidents for the 1st quarter of FY15 as compared to the 1st quarter of FY14. The staff determines that the MOP and MOE is complete for this task. The task is now a viable option to re-attack prior to historic alcohol related incident windows. Additionally, the staff can now explore the next cycle assessments to determine the next task, which will move the unit to the end state. The same process described above can relate to every task associated with garrison operations, to include M4 Zero and Qualification. MOP is the percentage of individuals who participated in Marksmanship Training prior to Qualification event. MOE is the increase in expert/sharpshooter percentage as compared to previous M4 1st quarter M4 qualification results.

## Conclusion

Due to the positive aspect of assessments, staff synchronization, practice working through the targeting process, and prioritization, implementing the targeting process during garrison operations will enhance any unit prior to a CTC rotation or deployment. The simplicity of the process, combined with subject matter experts within each WFF, will alleviate the "everything is a priority" mode of operations. The targeting process accomplishes the commander's intent, provides a path to success for the unit, and keeps the staff focused on the end state. Prioritization of tasks ensures subordinate units are allocated time to accomplish individual and collective training without compromise. Implementing this process will be a win for your organization.

For sample products or help in developing the process for your unit, contact travis.e.smith.mil@mail.mil. We will provide the products in order to alleviate some of the development work. If you have any questions, do not hesitate to ask.

*CW2 Travis Smith is the Targeting Officer for 2nd Brigade Combat Team, 10th Mountain Division at Fort Drum, NY, was previously assigned as the Brigade Targeting Analyst for 2-2 SBCT at Joint Base Lewis McChord, WA. He has deployed in support of OEF to Afghanistan in 2012, he additionally deployed in support of Operation Iraqi Freedom in 2003 and 2005.*

# Marine Corps JFO Program

By Capt. Josh Faucett, USMC

A Marine from the Tactical Air Control Party course of the Expeditionary Warfare Training Group, Atlantic, in Norfolk, Va., practices calling in close air support from an F/A-18 Hornet during a combined-fires training exercise aboard Camp Lejeune, N.C.

Winston Churchill said, "Those who fail to learn from history are doomed to repeat it." After Desert Storm the advent of GPS-guided munitions combined with wars in Afghanistan and Iraq to increase close air support (CAS) fratricide instances. In response the U.S. General Accounting Office published GAO-03-505, Military Readiness: Lingering Training and Equipment Issues Hamper Air Support of Ground Forces, to Congress in May 2003, calling for standardized service and coalition partner CAS training. Subsequently, the Army, Air Force, and Marine Corps (USMC) signed the Joint Terminal Attack Controller (JTAC) Memorandum of Agreement (MOA). By 2005 live sortie and JTAC throughput constraints led to joint Fires observer (JFO) training, accomplished entirely in simulators and the classroom. Faced with distributed combat operations, the Marine Deputy Commandant for Plans, Policies, and Operations (PP&O) signed the JFO MOA in 2010. Because JTAC procedure alone cannot mitigate fratricide in distributed operations, reliance on JFO capability is paramount. The Corps invested $17.5 million on JFO MOA required "form/fit/function" accredited simulators and expends $3 million annually on contract instructors to certify new JFOs. Although JTACs and forward observers (FO) utilize the same simulators, significant JFO program investment sends a clear signal.

Misunderstanding of JFO capability is far less transparent. Consequently, JFO certification, management, and unit training must adapt to meet future CAS integration requirements. Marine Field Artillery, responsible for fire support in the Marine Division, must shape the JFO program to avoid repeating history that led to GAO-03-505.

Though entry-level JFO certification provides opportunity for mass throughput, it lacks practicality for three primary reasons. First, entry students are ill prepared to achieve mastery of complex certification tasks. In a pilot JFO course (JFOC) integrated with Field Artillery Basic Officer Leader Course (FA BOLC), 28 percent of the officers failed certification standards. The NAVMC 3500.42B, Tactical Air Control Party (TACP) Training and Readiness (T&R) Manual, identifies these standards as core plus skills, designed for completion at advanced level schools. Second, JFO simulator evaluation requirements and entry mass throughput are incompatible. In BOLC pilot courses, individual students averaged eight simulation hours while overall simulator completion required 160 hours. The 152 hour delta led to students who "struggled greatly with basic skills like terrain association… [and] unaided call for fire." Third, uniformed instructors need to take responsibility for the initial training of subordinates. Historic capability gaps in FO CAS training contributed to entry JFO programs since 2012. Corresponding joint oversight and contract instruction which are vital to continuity in certification training closed the gap on entry joint fires curriculum. Hence, all Ground Combat Element (GCE) entry schools should incorporate the FA BOLC model of joint fires knowledge without the additional burdens of JFO certification.

Along with revamped entry training, JFO certification must address cost and throughput. The Army recently proposed a phased certification approach allowing division artillery units to complete JFO training that starts at the entry level. The USMC should take heed and capitalize on a monopoly of resource efficiencies. The three accredited Marine JFOCs should relocate to support each Marine Expeditionary Force (MEF). Relocation to Supporting Arms Virtual Trainer (SAVT) sites at Camp Lejeune, N.C., Camp Pendleton, Calif., and Hawaii reduces travel expense, time away from operational units, and enables continued JFO support to TACP school live-fires. USMC-owned SAVTs are a key consideration given that Navy Multi-Purpose Supporting Arms Trainers face fiscal years 2015-2018 budget cuts preventing "functionality upgrades to incorporate new operational equipment and procedural changes to maintain training system annual certification requirements."

Furthermore, JFO school relocation facilitates increased live fire opportunity, throughput, and JTAC currency. Relocation is the only way to incorporate live JFO certification training because live controls replace simulation "at an annual flight hour cost of…$9.6M for JFOs." Relocation geographically maximizes JFO throughput via economies of scale currently unavailable. Unit JTAC simulator participation would accomplish 33 percent of their own currency requirements and generate JFO cost savings by obviating the need for JTAC qualified contractors. The risk is T&R standard enforcement pitfalls previously experienced in the aviation community, but contract instruction lessens that danger. Additionally, removing JFO instructor, simulation and equipment needs from TACP schools permits increased JTAC throughput. In short,

phased JFO certification improves entry level basic skills and career progression, reduces JFOC attrition, provides cost savings, increases throughput, and helps prevent another GAO-03-505 fratricide reset.

Throughput requirements that drive JFO certification link directly to manpower, a field subdivided into manning, assignment, and unit management. JFO managers must better understand and articulate capabilities to supported units to ensure appropriate manning. For example, deployment manning documents for Iraq and Afghanistan routinely required JTACs for military and border transition teams while PP&O assessed a JFO requirement. The company landing team construct underscores this disparity in the Corps' capstone concept, Expeditionary Force 21(EF21). EF21 envisions a 400 percent increase in JTACs and 260 percent increase in JFOs within the infantry battalion. Senior leaders must understand JFO employment before altering throughput. In maneuver warfare terms, JFOs are the critical requirement to the JTAC friendly center of gravity within a distributed operation system. JFOs enable the critical capability of combined arms and joint Fires integration while mitigating fratricide risk, the associated critical vulnerability. Symbolic of EF21, 1st Battalion, 9th Marines' Air Officer (AO) noted 100 percent of CAS missions involved JFOs during their 2014 Afghanistan deployment. Current manning provides seven JTACs and 15 JFOs to the infantry battalion, giving line companies at least one JTAC and four JFOs. Squads and independent elements like snipers and anti-armor teams must task organize by mission. In the absence of JFOs or JTACs, all GCE Marines should possess a baseline capability to integrate joint Fires with maneuver. The answer to the EF21 manning conundrum is not drastic increases in JFOs and JTACs; rather, the key is improved entry and unit joint fires training.

With regard to JFO assignment, pre-requisite requirements and electronic management limit optimization. Before 2013, the JFO MOA required a "minimum of six months operational Fires" experience before certification. Albeit a former MOA requirement, the T&R should require the experience without waiver. Otherwise, as in the case of FA BOLC, entry JFOC lends itself to assignment patterns unsuited to maintaining qualification. In contrast, phased JFO certification supports prior operational Fires billet development. In the interim, unit commanders should require a comprehensive evaluation prior to JFO designation. Next, military occupational specialty (MOS) and billet must be considered. Because JFO is a pre-requisite to the 8002 JTAC MOS, the program focuses on 0861s. Yet, EF21 "authors envision each platoon sergeant being a trained JTAC as well as each squad leader being a trained JFO." The effect is capability misallocation in Marines focused on tactical control of units instead of fire support team (FiST) members like 0341s and yields increased fratricide risk. Lastly, rank requirements must shift because of their direct impact on tour length and throughput. Minimum JFO T&R grade requirements are corporal and second lieutenant, ideal for officers in Fires billets meeting proposed pre-requisites. However, enlisted FiST members who form the bulk of JFOC throughput require greater JFO tour lengths to espouse EF21. Lance Corporal FiST members meeting proposed JFO pre-requisites can facilitate required tour lengths once incorporated into T&R manuals and manning documents.

As the JFO is the critical requirement to JTAC Fires integration, electronic management is to JFO assignment. PP&O occupational field sponsors coordinate with monitors for follow-on assignments based on staffing goals, but JFO status is given little priority. Lack of an additional MOS (AMOS) patterning JTACs results in master brief sheets absent JFOC completion codes and unit tables of organization devoid of JFOs. Regardless of AMOS, there simply is no current electronic management system capable of tracking JFO training. Transparency of electronic training statistics at all levels is a proven tool for commanders to enforce training standards. The 1st Marine Division's answer is to purchase "the Automated JTAC Academic Currency Tracking System (AJACTS) to manage…electronic JFO/JTAC/ Forward Air Controller (FAC) interlan program reviews (IPR) until Marine Corps Training Information Management System (MCTIMS) can handle the input." Once fielded, monitors and unit managers will be better positioned to assign JFOs.

JFO unit management must evolve with certification, manning, and assignment to fully implement a concept of employment. Internal to the MEF, JFO billets exist in the Command Element (CE) at Air Naval Gunfire Liaison Company (ANGLICO) and Force Reconnaissance Company and in the GCE, the Marine Division. While ANGLICO, reconnaissance, and artillery JTACs can perform "training and qualification requirements for all JFOs in their unit[s]," maneuver battalions face a daunting task. A 2015 survey of maneuver battalion AOs revealed non-existent JFO management in units upon reporting for duty. Battalion AO 12-14 month tour lengths engender intermittent JFO management. Among surveyed battalion AOs, gaps in organic AO presence ranged from two weeks to five months. Regiment, Marine Expeditionary Unit, and Division Weapons and Tactics Instructors (WTIs) are unable to assist or enforce JFO management without a functional electronic system. The implication is battalions containing JFOs must have constant presence of designated JFO evaluators (JFO-Es) to effectively manage JFOs. Unless Manpower Management Officer Assignments 2 (MMOA-2) extends battalion AO tours to 18 months to fill that JFO-E void, GCE JFO billets should justifiably consolidate within artillery regiments and reconnaissance battalions. Future JFO management involves joint oversight to "provide the JFS ESC a snapshot of Service… standardization," and the USMC program needs rudder steer to satisfy expected MOA changes.

The JTAC/JFO relationship formed during JFO management inextricably links to effective unit training, comprised of initial qualification, 18-month evaluations, and semi-annual currency. Commanders designate qualified JFOs and JTACs upon completing 2100-level T&R events. While all 2100 JFO events focus on JFO/JTAC integration, less than 10 percent of 2100 JTAC events require a JFO. Surveyed maneuver battalion AOs said gaps in organic JFO management often lead to JTACs fulfilling JFO roles for other JTACs during training, resulting in little to no JFO/JTAC integration. Perhaps the most effective joint fires training occurs during JTAC live fire currency requirements. JTACs should seek out and integrate JFOs they will train and deploy with during type-2 controls. Furthermore, JTACs improve JFO capability by mentoring and teaching JFOs during type-1 and type-3 controls. JFOs have reciprocating responsibility to seek out live training for their 2000 level currency re-

quirements and evaluations. Complex JFO skills like talk-ons, laser designation and infrared (IR) pointer operations for fixed-wing night CAS should be conducted live when possible. While concurrent accomplishment of JFO/ JTAC currency requirements is the most efficient use of resources, the most significant training impact is enduring relationships that build cohesion, readiness and reduce fratricide. CAS fratricide incidents can all "be traced to a breakdown in procedures that could have been mitigated by improved training for the aircrew and controller."

Critics cite that operational commanders are content with the current JFO program. The truth is that JFO operational and certification training translated to more effective joint fires in combat over the last decade. Empirical data shows that Class A mishaps involving CAS decreased by nearly two-thirds since GAO-03-505. However, research shows steadily declining CAS event frequency paired with steadily increasing mishaps relative to the number of terminal controls. "Lacking tangible visibility of a problem...the absence of fratricide [is] deemed sufficient" to justify current states of JTAC and JFO programs. Low volumes of combat CAS execution and supervised training on realistic ranges over the past decade "without a feedback loop to provide measurable data to determine if the program is 'good enough' [are] a recipe for a revisit of GAO-03-505 sometime after implementation of EF21."

Demand signal for distributed joint Fires capability will only increase. JFOs are sure to play an integral role for the USMC as resources diminish. Sans weapons release authority, JFOs are the fratricide-mitigating forward extension of JTACs that make distributed operation CAS a reality. Program success hinges on certifying the appropriate Marines at the right time in their career path while leveraging entry joint Fires knowledge across the GCE. Throughput and desired live training opportunities necessitate formal JFOC relocation. Battalions with JFOs must possess active and enduring JFO-E presence to foster JFO/JTAC relationships and commanders need an electronic management enforcement mechanism. Facing directives to achieve EF21, Marine Field Artillery must maximize JFO program capability and resource efficiencies to ensure fratricide risk mitigation while supporting maneuver.

# Air Defense Initiative

CPT Corey Robertson

Air Defense Soldiers from 4-3 ADA work to establish the Antennae Mast Group during the emplacement process. *Photo courtesy of CPT Corey Robertson, U.S. Army.*

The role of Air Defense Artillery Soldier in the U.S. Army is one that is ever-demanding and also evolving. These Soldiers guard the skies above to ensure that the defended areas they are assigned are free of air breathing threats, so aligning Air Defense forces across the globe is instrumental.

A group of Soldiers from B Battery, 4th Battalion, 3rd Air Defense Artillery, recently deployed to the Republic of South Korea to test the ability of 35th Air Defense Artillery Brigade to receive, emplace and sustain a contingent of Air Defense Soldiers. A total of 26 Soldiers successfully conducted the mission due in large part to the cooperation between the two brigades.

When you are conducting an exercise that spans two theater of operations and thousands of miles, cross-talk and coordination is everything. In January, a small group of Soldiers from 35th ADA Brigade came to Fort Sill to initiate the relationship, conduct mission briefs and go over course of action for future endeavors.

"This was the first time this has ever been done, so working out the reception and staging process was a big hurdle," said CPT Michael Maricle, commander, B Battery, 4-3 ADA. "What we ultimately want to accomplish with future exercises is to deploy a battery complete with Soldiers and equipment, have them received, emplaced and validated all within the pre-determined timeline."

# Shaping an Innovative and Flexible Paladin Platoon to Succeed at JMRC

1LT Neel Vahil

An M109A6 Paladin howitzer of 1st Battalion, 82nd Field Artillery, 1st Brigade Combat Team, 1st Cavalry Division advances on the objective while conducting a tactical movement during exercise Combined Resolve III at the Joint Multinational Readiness Center in Hohenfels, Germany. *Photo by SSG Randy Florendo, U.S. Army.*

The Joint Multinational Readiness Center (JMRC) rotations offer countless opportunities to train our formations on a variety of different threats that our Army may face in the future. Our rotation provided a training atmosphere in which low intensity conflicts and conventional uniformed threats were expertly blended to mimic the complex battlefields of today. Critical to leading a Paladin platoon in this ambiguous environment was connecting all of the leaders and Soldiers in the platoon and motivating them to achieve a common overarching goal. I discovered that it was important to ensure all members of my platoon understood our task and purpose at the macro and micro levels. I wanted them to know not only why we were providing Fires to a particular task force, but also what the overall purpose of our rotation was. This promoted commonality of experience and also helped my Soldiers understand their role in the rotation.

## Putting the Rotation in Perspective for the Soldiers

At the macro level, I successfully communicated the importance of our rotation by placing it in a historical and global context. I concisely explained that our rotation was intended to promote interoperability and to help build a multinational organization that would be capable of fighting together effectively in the future. I wanted my Soldiers to understand that by partici-

pating in this rotation, they were helping to shape a force that would be instrumental to global security in the coming decades. On the other hand, I should have provided my men with more of a background to the other countries participating in the rotation. They were unprepared to identify the uniforms of our partner nations, Romania, Canada, and Moldova. Additionally, they had little understanding of the language, culture, customs, and vehicles of these countries. This lack of knowledge proved disastrous for us as a platoon because we had significant trouble sending up Size, Activity, Location, Unit, Time and Equipment (SALUTE) reports. It took us an inordinate amount of time to determine if a vehicle or person we were observing was friendly. In the future, cultural awareness classes and a reference card would be beneficial to my Soldiers to avoid operating in a confusing environment comprised of uniformed allies and enemies, civilians, and a hostile insurgent group.

## Building an Innovative and Adaptive Team

As a platoon we were very successful at evolving and preparing ourselves to function tactically. Constant rehearsals for react to contact, react to IEDs, and react to indirect fire allowed us to distill platoon tasks techniques and procedures (TTP) down to the lowest level. Even drivers and loaders, normally not privy to actions on contact, understood how they were to react as a section and their role in the overall

A Soldier of 1st Battalion, 82nd Field Artillery, 1st Brigade Combat Team, 1st Cavalry Division adjust his helmet while driving an M109A6 Paladin howitzer during exercise Combined Resolve III at the Joint Multinational Readiness Center in Hohenfels, Germany, Oct. 29, 2014. *Photo by SSG Randy Florendo, U.S. Army.*

Soldiers of 1st Battalion, 82nd Field Artillery, 1st Brigade Combat Team, 1st Cavalry Division inventory 155 mm rounds during exercise Combined Resolve III at the Joint Multinational Readiness Center in Hohenfels, Germany, Oct. 29, 2014. *Photo by SSG Randy Florendo, U.S. Army.*

platoon response to such a situation. My platoon accomplished this by stressing the importance of rehearsals and by conducting frequent after action reviews (AARs) during our situational training exercises (STXs). My aim in stressing AARs was to fashion an organization that was capable of innovating as the rotation progressed and to build a team of leaders within the platoon willing and able to generate new ideas. For example, after operating for more than 15 hours in one Paladin assembly area (PAA), we began using naming conventions to identify locations for our survivability moves. As we were executing survivability moves every hour on average, this method minimized confusion

Soldiers with Battery C, 1st Battalion, 82nd Field Artillery, 1st Brgiade Combat Team, 1st Cavalry Division maneuver their Paladins through Hohenfels Training Area, Oct 26, 2014 during exercise Combined Resolve III. *Photo by CPT John Farmer, U.S. Army*

after we received end of mission (EOM) from the fire direction center (FDC) while simultaneously expediting movement and fostering quick decision-making.

## Movement and Maneuver in a Forested Environment

Restrictive terrain dictated that our platoon employ unconventional movement formations for a Paladin platoon. While dense vegetation provided ample locations and opportunities for concealment, it also resulted in canalizing terrain features that would commonly divide our platoon during our maneuvers. In order to limit the impact of this, we assigned each Paladin a Field Artillery Ammunition Support Vehicle (FAASV) as its "wingman." A section chief was then in control of both his gun and respective FAASV. This made it easier for me to control the formation, retain and centralize command and control, and modify the formation as mandated by the terrain. Selecting our movement formation then became an exercise in reconciling mission, enemy, terrain and weather, troops, time available and civil considerations (METT-TC) variables with getting my platoon in position to fire as quickly as possible. Since our greatest threats were counter-fire and dismounts, I reasoned that speed in our movement from one firing point to another and security during that movement would be our platoon's most critical focal points. I was not as concerned about the dismount threat and would always ensure that crew-served weapons were providing 360 degree security and that name-tape defilade was a standard

enforced for all tank commanders (TC). This concept was also beneficial for ammo management. Our platoon's FAASVs were responsible for monitoring ammo expenditures and executing resupply when its respective gun reached the resupply trigger. This worked extraordinarily well and eventually resulted in FAASVs resupplying their wingmen unprompted.

## Minimizing our Footprint during R3SP

Our battery's approach to Rearm, Refuel, Resupply and Survey Point (R3SP) evolved drastically as we transitioned from STX lanes to force-on-force. We gradually began to realize that executing a formal and protracted R3SP in a tactical environment would not be conducive to minimizing casualties or maintaining firing capabilities. Additionally, a high operations tempo (OPTEMPO) and counter-fire threat regularly made bringing our entire platoons to the R3SP sites an untenable option. To mitigate the counter-fire and small arms threat we faced, we began cross-loading ammo as necessary and sending our FAASVs and gunnery sergeants to conduct ammo resupply. We were able to maintain firing capabilities while minimizing our signature at the R3SP site particularly during times in which we were firing frequently. As a consequence, we only had one instance of indirect fire at our R3SP site.

## Lessons Learned

My platoon's experience provides multiple learning points for Paladin platoon leaders preparing for a JMRC rotation. In such a complex operating environment, it is vital to develop a robust common operating picture at both the macro and micro levels. At the macro level, I was successful at placing our rotation in a broader global and historical context. Soldiers need to be supplied with the necessary background regarding the cultures, customs, vehicles, and uniforms they would encounter in the rotation. As a platoon we were fundamentally successful at the micro level. We developed and modified TTPs by creating a culture in which all leaders were willing and able to provide ideas that fueled small-unit innovation. Additionally, we mitigated issues we encountered, particularly regarding ammo management. Paladin platoon leaders must ensure the entire platoon (down to the lowest level) has a strong grasp of the cultural nuances of the environment in which they will be operating as well as the battery Tactical Standing Operating Procedure (TACSOP). This will provide platoon leaders with a strong foundation from which to innovate and adapt as necessary.

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CPT Michael A. Mccaughey, the company commander for Headquarters and Headquarters Battery, 2nd Battalion, 377th Field Artillery (Airborne), 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division, conducts forced-entry parachute assault training on Malemute drop zone at Joint Base Elmendorf-Richardson, Alaska, March 18, 2015, as part of a larger tactical field exercise. *Photo by Alejandro Pena, U.S. Air Force.*

# Restoring and Preserving Field Artillery Competencies

## Conducting FA Qualifications in a Tactical Scenario

By CPT Lucas F. Leinberger

Proper planning, synchronization and execution of training is critical to any organization. For the Field Artillery it is even more critical due to the complexity of observing, coordinating and delivering Fires in support of combined arms maneuver. FA table qualifications are a powerful tool for ensuring FA units are capable of providing Fires despite these complexities. There is a tendency to execute the tables incorrectly and as an administrative event rather than a tactical action. A solution to the problem is a standardized, doctrinally based example for leaders to refer to while planning and conducting qualifications. Most importantly, gunnery tables, should be executed as a situational training exercise (STX) versus simply shooting fire missions in a static exercise. Tactically driven tables result in maximization of training time, better preparing units for major events such as a combat deployment or a rotation to one of the Army Combat Training Centers (CTC).

Years of continuous deployment and non-standard missions contributed to the current state of FA specific training and planning. The high operational tempo drove units to conduct "administrative" artillery tables, and made such methods an acceptable means of qualifying units prior to deployment. The ramifications of this practice are far reaching and impact nearly every aspect associated with the tactical delivery of Fires. In fact, many leaders believe artillery qualifications cannot be conducted simultaneously within an STX. This is not true, as artillery tables need to be part of a STX in order to best prepare our Army for future operations.

Current doctrine, Technical Circular 3-09.8, Field Artillery Gunnery, specifies the type of fire missions required for artillery table qualifications. It also includes guidance stating the qualifications may be conducted during a scenario-driven training event. Additionally, the TC 3-09.8 step procedure conditions for each qualification task states, "the battery/platoon/battalion is conducting combat operations." However, there is no emphasis on the importance of executing the tables as part of a combined arms scenario, or a description of what the scenario should look like. As a result, units train to technical proficiency while failing to address the tactical skills needed to facilitate overall unit success in synchronizing the war fighting functions in support of combined arms maneuver. Furthermore, conducting the qualifications in this manner does not meet the doctrinally directed conditions for execution of the task step procedures.

Another contributing factor is a generation of leaders who are inexperienced in conducting traditional FA training. This is not their fault, nor a sign of incompetency. Instead, it is proof of the aforementioned effects of years of sustained non-standard missions on artillery proficiencies. Many leaders simply never had the opportunity to conduct live-fire training in support of combined arms maneuver with an integrated or notional higher headquarters driving the scenario. For example, the inclusion of the brigade Fires cell during table qualifications, facilitates counter-fire drill rehearsals. Doing so then facilitates staff drills for the de-confliction of ground and air at the brigade-level while the firing battalion simultaneously provides a point-of-origin target location for use during qualification fire missions.

A simple way to correct this problem is the development of a doctrine-based example or "playbook" for the conduct of FA table qualifications in a tactical scenario.  One approach is to combine multiple tables into

one training event. Of course, the decision to do so depends on how proficient a unit is in their section-level skills. A way to ensure proficiency is to direct the completion of artillery skills proficiency training and artillery tables I-IV three to five training weeks prior to the desired table VI execution date for Active Duty units, or during the two battle assemblies prior to annual training (AT) for National Guard units.

The next step is to conduct artillery table V two weeks prior to table VI, and no later than the initial few days of annual training for National Guard units. While TC 3-09.8 does not require the battery commander to individually table V certify each section himself, it is a good practice and highly recommended for a unit re-learning their skills. Additionally, the battalion master gunner must also be present to ensure the certification is conducted to standard. Completion of table V, under these conditions, provides the unit with a dry rehearsal of the table VI requirements, and allows leadership to identify any critical shortcomings prior to live-fire qualifications.

When ready, the unit begins the tactical training scenario and their qualification tables. To do this the unit should establish a scenario tailored to the tables they wish to conduct. For example, the scenario might start with the unit already in a deployed environment, and receiving orders to provide fire support. Prior to "crossing the wire," the battalion conducts table VI qualifications and muzzle velocity variation calibrations. Once complete, the batteries then receive orders to move to their designated position areas to occupy and provide fire support.

The scenario continues as the unit conducts tables VII-XI in preparation for table XII. Each platoon must be trained or proficient in their supporting collective tasks prior to starting table XII to include the ability to conduct reconnaissance, selection and occupation of a position (RSOP). Training of tables VII-XI should be executed at the battery-level and supervised by the battalion to ensure resources are available. Of particular importance for resourcing is ammunition for live-fire execution of table X. As per TC 3-09.8, the platoon trains and certifies on the fire missions determined by the commander to support the battalion Mission Essential Task List (METL). The battalion master gunner and an S-3 representative should also provide oversight in order to ensure the units are meeting the commander's intent. During this time, the units may also conduct Digital Sustainment Training (DST) or FA technical rehearsals for upcoming table XII fire mission requirements.

When table XII begins, the scenario intensity increases. For example, plan the scenario so a platoon must conduct a position defense while executing table XII fire missions. Another possibility is a well-planned tactical movement lane in which a platoon encounters enemy contact while reoccupying to continue table XII fire missions. Regardless of the unit's approach, the battalion leadership must thoroughly assess platoon movements and occupations without reducing emphasis on fire mission execution. One way to achieve this is to assign personnel from within the battalion or brigade as observer coach/trainers (OC/T) to assist in enforcing the STX timeline. The OC/T is then able to focus on providing platoon-level assessments rather than the commander or staff who have their own duties to perform. The desired end state of table XII is the qualification of each platoon utilizing a challenging tactical scenario simulating a decisive action environment

SSG Troy Lord, a CH-47 Flight Engineer with the Texas U.S. Army National Guard's 2-149th General Support Aviation Battalion, guides the "Chinook" helicopter as Soldiers from the 1st Battalion 133rd Field Artillery hook up a 105mm Howitzer during an air assault exercise on June 24th at Fort Hood. The 36th Infantry Division Soldiers of the Texas Army National Guard are nearing the end of their two weeks of annual training. *Photo by MAJ Randy Stillinger, U.S. Army.*

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while also capturing assessments and lessons learned for each unit. It is acceptable, and recommended, to tailor the STX for specific areas of operation if the unit is training for a deployment, CTC, etc.

Completion of tables VI- XII in four to five days is possible if all supporting tasks, including DST of required fire missions, are complete prior to the FTX or STX. The inclusion of FA Technical Rehearsals is also critical to the successful and timely completion of artillery table qualifications. However, recent CTC rotations and annual training assessments show a tendency for units to believe “surprise” unplanned fire missions, or call for fire (CFF) are the only way to prepare their Soldiers for real combat. This is not true, and detrimental to the unit’s ability to rehearse and execute fires efficiently. Instead, utilization of a fire support execution matrix (FSEM), target list worksheet (TLW), and schedule of Fires must be enforced. Use of these products during artillery tables and technical rehearsals provide a controlled, synchronized plan for the unit to execute, in addition to further developing the staff in their ability to plan and control FA operations.

Reaching table XV during the same exercise depends on unit preparedness more than anything else. If ready, the scenario continues and the focus shifts to the battery-level. Ideally, the OC/Ts are from the brigade-level or an adjacent Fires battalion with division artillery (DIVARTY) oversight as they come online in the near future. However, the use of experienced battalion-level staff is acceptable if approved

by the chain of command. The OC/T's focus now shifts to the battery commander's conduct of TLPs in order to assess mission command and collective METL tasks. The OPFOR presence also increases with the implementation of enhanced notional capabilities such as enemy counter-fire, chemical threats or air support systems to facilitate assessment of battery survivability moves while simultaneously driving staff-function exercises at the battalion-level.

The benefits of conducting tactical artillery tables extend beyond the areas discussed. At a minimum, unit leaders can consolidate collective tasks and qualification requirements in one synchronized event instead of separate training exercises. Subsequently, staffs have more opportunities to conduct the Military Decision Making Process (MDMP) for a tactical scenario instead of only planning for administrative actions. This places table qualifications in accordance with FORSCOM Regulation 350-1 training guidance which states, "Training programs must give the proper attention to individual/crew/team proficiency and small unit training, while simultaneously training commanders and their staffs in the successful execution of Mission Command."

Conducting the tables as described also provides a realistic training event to facilitate the commander's METL assessment, and validation of critical standard operating procedures (SOP) such as counter-fire drills. In contrast, an administrative scenario typically does not facilitate a METL assessment. Instead, some METL tasks are not assessed simply because they are not conducted due to improper planning and supervision of collective task training by unit leadership. Furthermore, rotational unit assessments at the National Training Center (NTC), Fort Irwin, Calif., show a trend of poor SOP use or enforcement at the lowest-level. Even more concerning is the noted lack of proficiency in rotational unit basic skills such as fire mission computations. An artillery table STX enables a unit to correct these deficiencies by enforcing SOP adherence and internally validating the document prior to a CTC rotation or deployment. Basic skills will also improve due to the METL task proficiency required for unit success at the collective and individual-levels.

As mentioned, proper METL assessment requires the implementation of a tactical scenario and the artillery table qualifications provide the perfect opportunity to do so in a time of budgetary restrictions for the Army. By consolidating multiple qualifications in one training event, the unit is able to take advantage of funding sooner versus waiting several months only to find out funding is no longer available. Also, the unit may be able to reduce their annual spending costs due to redundant support purchases, or maintenance repairs due to equipment sitting mostly unused for extended periods in motor pools between training events. However, regular preventative maintenance during the STX must be enforced to mitigate vehicle damages due to a longer duration of exercise. Lastly, a reduction in fuel consumption, especially for a heavy unit, is possible due to a reduction in the number of trips moving equipment to and from the field during multiple training exercises.

Publication of an example guide or "playbook" does not ensure the alignment of artillery table qualifications with decisive action training guidance within the artillery community. Instead, such material should be included for discussion through various outlets including the FA master gunner Course, Captains Career Course (FACCC) and the Pre-Command

Course (PCC) at Fort Sill, Okla. Discussion through practical exercises or case studies ensures the material does not become stagnant or outdated by encouraging improvements to the materials addressing future operational training requirements. Additionally, the material should be made available online through sites such as the Fires Knowledge Network or the Center for Army Lessons Learned to ensure all leaders have access to the example products. As a result, future battery commanders and staff members will understand how to plan and execute artillery tables prior to doing so at their gaining unit. Likewise, future battalion commanders will know what to expect from their staff and subordinate commanders when supervising the planning and execution of the tables.

Ultimately, it is up to FA leaders to ensure the community remains proficient and dependable in producing trained, ready and cohesive units prepared for operational deployment. Maximizing training time by including quantitative and qualitative assessments derived from a tactical scenario is a good start. Failure to conduct such training is unacceptable and irresponsible for an Army training to win its nation's wars. Now is the time for leaders to capture, develop and retain institutional knowledge-not after the next conflict begins.

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# Reuniting the King and Queen of Battle

By MAJ Glenn Neilson, Australian Army, CPT Brett Maginness and SFC Gregory Artise

Soldiers from A Battery, 2nd Battalion 29th Field Artillery at the National Training Center in Fort Irwin, Calif., execute calibration on the Paladin vehicle to prepare for Decisive Action Rotation 14-10, Sept. 11, 2014. *Photo by SGT Charles Probst, U.S. Army.*

"I do not believe friction exists between infantry company commanders and their fire support officers. They are just missing each other, either by communication, integration or planning," said LTC Jeremy Schroeder, Task Force 2 Senior Maneuver Observer/Controller at Fort Polk.

As military professionals, we become wed to our experiences and they build the framework that leads to intuitive military decisions (the art of command). There are battalion and company commanders and fire support officers (FSOs) who have primarily executed platoon level operations within a counter-insurgency (COIN) environment. This resulted in limited integration of Fires in support of maneuver operations and a generation of company commanders and FSOs who will invariably continue to fail until future training realigns their thought process.

Since reinitiating decisive action training exercises (DATE), observer, coach, trainers (OCTs) at the Joint Readiness Training Center (JRTC), Fort Polk, La., have observed that commanders at the battalion and company level, along with their respective FSOs, have become overly influenced by their COIN experiences developed during previous Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) deployments.

Moving from the current operation to future operations, institutional change is difficult and the transition from COIN fire support (FS) planning to DATE FS planning has challenged the battalion and company commander's understanding of the duties and responsibilities of their FSO; additionally, FSOs lack the technical and tactical knowledge required to synchronize lethal and non-lethal effects in support of the maneuver plan.

Over the past 12 months, OCTs at JRTC observed problems with the functionality of company command posts (CP) with respect to the utilization and inte-

gration of the Fires Warfighting function (WfF).

It is our collective opinion that the aforementioned problem state is causing fire support planning at the battalion and company level to fail during DATE rotations at JRTC.

This article provides several recommendations to improve functionality, parallel and collaborative planning that will reestablish the relationships between maneuver commander and their FSOs required to facilitate the successful integration and synchronization of Fires in support of maneuver operations.

Army Doctrine Reference Publication (ADRP) 6-22, Army Leadership, states "… the essential element of combat power is competent and confident leadership. Leadership provides purpose, direction, and motivation in combat. It is the leader who will determine the degree to which maneuver, firepower, and protection are maximized; who will ensure these elements are effectively balanced; and who will decide how to bring them to bear against the enemy." As such, the relationship between a commander and his FSO is one of the most important within not just the company headquarters group, but battalion and brigade as well. The synchronization of direct and indirect Fires with the maneuver plan, coupled with a clear understanding of the enemy situational template, capabilities, and intent, is crucial to generating a feasible scheme of maneuver (SoM) that provides fire superiority and lethal effects at the right place and time.

OCTs at JRTC have noticed shortfalls with regard to collaborative planning within the battalion staff and company CPs during DATE rotations. Recent graduates of the Infantry Career Course have become so accustomed to conducting troop leading procedures and planning in isolation that they fail to utilize their company support staff (1SG, XO, FSO, communications NCO, RTO, WfF and medic) appropriately, which provide expertise on all the facets of the operational plan. Compounding this problem is the FSO's tendency to wait on the fringes for opportunities to gain situational awareness (SA) and provide Fires-centric input into troop leading procedures (TLP). The company troop leading procedures (TLPs) should be standardized to ensure that the support staff understands their roles and responsibilities, as well as how they support collaborative and parallel planning and fire support rehearsals with adjacent companies and the battalion.

A critical component for parallel planning is the battalion commander's guidance for fire support at the conclusion of mission analysis. Combat training centers (CTC) often do not see the requisite detail to facilitate the effective integration of Fires because the guidance, if any, lacks rigor and typically only focuses on some parts of the execution and is not in accordance with Field Manual (FM) 3-09, Artillery and Fire Support. Battalion commanders need to leverage their FSO to assist them in crafting guidance to set the conditions for successful integration of fire support from the brigade combat team (BCT). However, a common trend seen in the CTCs is that this is not accomplished. Therefore, we find the FSOs assuming as to what they believe the commander wants them to accomplish with Fires. Without this guidance, the FSO cannot support the maneuver commander by providing the support and control of all enabling assets. Company commanders must quickly gain an appreciation to request and use a large quantity of enablers, and the complexity this adds to both planning and execution. The FSO

is a critical asset that can request and control close air support and other joint Fires enablers with joint tactical air controllers (JTACs) and joint Fires observers (JFOs) to relieve some of the commander's burdens. In order to truly synchronize effects within an area of operations (AO), a leader must leverage all of the company's support staff. A well trained and rehearsed company, supported by a planning standard operating procedures (SOP) that is properly nested with the TLPs, will provide an opportunity to develop a plan that synchronizes Fires and maneuver. The commander's guidance for Fires is the critical linkage between the FSO and commander, and should provide specific tasks for what the commander wants to achieve with Fires.

As the Army's training focus shifts from mission readiness exercise (MRE) to DATE rotations, units must shift their mindset as well. FSO's have become accustomed to conducting COIN-centric counter-fire tasks focused on defending forward operating bases (FOB), and have been working within the company intelligence support team (COIST), rather than synchronizing multi-echelon indirect fire support assets within the operation. This perspective, coupled with the commander's misunderstanding of the FSOs responsibilities, has further degraded their working relationship. Infantry battalions will need to develop training programs that provide company commanders with an opportunity to develop their support staff into a functioning planning cell capable of conducting complex TLPs. It is imperative, and doctrinally supported, that the company commander needs to bring the FSO into the planning process. This can be done with the use of a terrain model fire control exercises (FCXs) and mission command training centers (MCTCs) virtual battlefield simulation training, which are cost effective tools that foster professional development, production of SOPs, and replicates the complexity of planning an "echelon-ment" of Fires. To maximize the benefits of this exercise, the fire support coordinator (FSCOORD), along with the battalion and brigade commanders, should receive the briefing and attend the rehearsal. Company commanders have to aggressively bring their FSO into the planning process early and leverage their knowledge and experience. In addition, FSOs have to serve as the salesmen for the capabilities that the Fires WfF provides to the fight. Failure of either of these individuals to do this will result in a lackluster fire support plan that is only loosely nested with maneuver operations. Company commanders must also place their support staff into situations that enable them to demonstrate their acumen within their assigned tasks and their integration into the staff planning process in order to ensure their strengths are maximized and their weaknesses are mitigated by other staff members. By conducting these types of training events and understanding each individual's role in the planning process, it will enable the staff to accomplish the first fundamental of the mission command philosophy - "building cohesive teams through mutual trust."

Like Infantry battalions, Field Artillery units will need to "adjust fire" on their training focus. They must bridge to the future to ensure FSOs have the necessary tools to provide relevant and well-thought-out capability briefs and provide timely and accurate planning input to the maneuver commander. Complicated combined arms maneuvers, such as breaching [i.e. suppress, obscure, secure, reduce, and assault (SOSRA)], require synchronization of ground maneuver and both ground and air de-

livery systems, and should become focus items when developing training programs and allocating resources to training events. This will become the focus of the newly developed Division Artillery (DIVARTY) headquarters who will take this on in reference to training the battalion and company FSOs, and ensure they are trained, certified and prepared to properly plan and synchronize Fires at the brigade, battalion, battery and platoon levels. With the added training and growth in artillery skills, it will foster trust between the commander and the FSO. Due to this trust, a FSO will be expected to play a significant role in planning for deliberate defensive and offensive tasks, and company and battalion commanders should consider conducting defensive tactical exercises with troops (TEWTs) to ensure their officers understand engagement area development and the FSOs role within it. Against a conventional threat, an FSO is expected to rapidly call-for-fire for precision, near precision and conventional munitions. This should become a focus for artillery live fire exercises to ensure it can be achieved under battlefield conditions.

With the introduction of the 2020 Modified Table of Organization & Equipment (MTOE), the FSOs are not assigned to the field artillery battalion. They are attached to the Infantry battalions for training exercises and deployments, but do not have the organic relationship they once had. The interaction between the commander and his FSO will be limited to formal training events and some informal functions. Therefore, commanders at all levels will need to ensure battle rhythms are established that encourage professional interaction and collaborative planning for all major training events in order to maintain the working relationship enjoyed prior to the MTOE change. The FSO also has a responsibility to attend battalion and company training meetings serving as a liaison officer (LNO) between the Field Artillery and maneuver battalion commanders. This will continue to be challenging for the FSO. An effective FSO is in essence a LNO who is always on the road working to synchronize training in garrison and Fires in a tactical environment

As units begin preparing for unknown conflicts, commanders must become more accustomed to integrating the WfFs into their SoM. Also, commanders must generate operations orders that include the detail necessary to synchronize Fires and effects with an orchestrated ground tactical plan. Strong working relationships between the company commander and the FSO is paramount to success. DIVARTY and BCT must ensure the company commanders receive adequate time to forge a team and create and validate SOPs prior to attending a JRTC DATE rotation.

In conclusion, company commanders and company FSOs have not enjoyed a strong relationship in recent JRTC rotations. This is attributable to the shift from COIN-centric operations to the more lethal operating environment presented during a DATE, as well as the effects of the new 2020 MTOE. In order to properly prepare for a successful JRTC DATE units must capitalize on every opportunity to exercises the company fire support planning process through the use of terrain model exercises and defensive TEWTs. By understanding the roles of both the commander and FSO, while nesting all enablers into the planning and execution stage, we can effectively reunite the king and queen of battle.

# The Dutch Still Do ADA Right

By MAJ Adam D. Proctor

Patriot missile batteries across the U.S. Army made a valiant push about five years ago to implement the then-called "Dutch-method." This attempt by the U.S. military sprang from the realization that our officers were spending six months at Officer Basic Course (OBC) learning the Patriot system, then training another six months in the engagement control station (ECS) at their respective batteries before the inevitable reassignment that would pull them permanently out of the ECS. This truncated timeline meant that after a year of training as a tactical control officer (TCO), the typical lieutenant would Table VIII certify only a handful of times and with a very select few to become tactical directors (TDs) at the battalion level. Essentially, an officer is tasked to do something else as soon as he becomes tactically proficient and can begin reliably contributing to the unit.

The solution is what is known as the "Dutch Method." The Dutch are considered by many the most proficient and experienced Patriot operators in the world with good reason. A typical Dutch Information Coordination Central (ICC) crew has a captain and a staff sergeant, both with around five years' experience, and a sergeant first class with anywhere from ten to fifteen years of experience. The U.S. attempted to emulate this depth of experience by slotting warrant officers as TCOs and TDs within the Patriot van crews. While U.S. warrant officers perform as Patriot technical and tactical subject matter experts and many have served as superior TCOs and TDs, the shift to slot them in this way has proven only a superficial attempt by the U.S. and has not gone nearly as far as needed to achieve the desired results.

My recommendation, as an officer who has trained on all levels of the U.S. Patriot control structure, is we follow the example set by the Dutch. My training includes TCO, TD, Air Defense Artillery Fire Control Officer (ADAFCO), Patriot battery command and I have served three years as an exchange officer with the Dutch Air Defense Artillery (ADA) Brigade, the Defensie Grondgebonden Luchtverdedigingcommando, including deploying with them during Operation Active Fence. Operation Active Fence is an ongoing deployment in Turkey along the Syrian border to reinforce our North Atlantic Trade Organization (NATO) ally's air defense capabilities against potential tactical ballistic missile (TBM) attacks after an Article IV consultation in November 2012. By January 2013, the U.S., Dutch, and German nations all had Patriot units operating under the NATO Combat Air Operations Center (CAOC). This provided the U.S. with a glimpse at three nations who had not deployed the Patriot missile system in such proximity in at least a decade and who had developed different tactics, techniques and procedures (TTP) during that time. It is in our best interests as U.S. Air Defenders to learn how our smaller and less sclerotic NATO partners have adapted differently.

Recommendation 1: The U.S. must remove the communications operator from the air-battle management crew. The Dutch have a robust commo section in each battery and battalion that is responsible for the Patriot datalink connection as soon as the unit arrives on site. That section specializes in only communications and is

not involved in updating airspace coordination orders (ACO) and standard training order (STO) during the air battle. Instead of training a commo operator on Patriot operations, place the section sergeant in the middle seat. He is often already one of the most experienced Patriot operators in the battery, and his experience would serve both of his fellow crewmembers. This is where the Dutch truly gain the greatest benefit by keeping experience in the van. The experienced noncommissioned officer (NCO) can provide the expertise and knowledge to look over the shoulder and train the lieutenant and specialist to his left and right during operations. Keeping a commo specialist in the van during operations is little value-added when the Patriot experience lies with the sergeants and staff sergeants.

Recommendation 2: The U.S. must certify individuals instead of crews. There is a universe out there where during training or on a deployment people do not get sick, have family emergencies, or take leave, unfortunately we do not inhabit such a place. The Dutch and Germans have depth in their units because they can take a certified executive officer (XO) or a platoon sergeant and put him into a slot when one crewmember inevitably goes down. The Dutch and German commanders take the risk that the crew may not operate as seamlessly as it might if they had many air battles together. They mitigate the significant risk though that if one person from one team is indisposed, the remaining two crews are not pulling 12-hour shifts every day. Commanders must decide where the greater risk lies, in a makeshift crew or in demanding two Soldiers and a lieutenant pull 12-hour shifts through the night for several weeks at a time. Certifying individuals results in more flexibility by the commander to place individuals onto a crew when one crewmember is indisposed. Certifying as a crew results in tying the commander's hands and not allowing him the ability to make the decision on what is best for his unit when Murphy inevitably strikes.

In conclusion, these are two recommendations for Patriot units that could have profound consequences on how we operate. Keeping Patriot knowledge and experience on crew creates a learning environment for the new Soldiers that can expand upon itself. When the new lieutenant has an experienced NCO next to him, who he can trust and learn from, then he is more likely to want to stay a Patriot operator. Secondly, changing gunnery to certify individuals instead of crewmembers returns more capability to the commander. He is able to build depth on his team by placing individuals on crews on an ad hoc basis and therefore doing what is best for the welfare of his Soldiers. If the U.S. truly desires to have a premier Air Defense fighting force that the nation demands, then it must adapt to the success of our allies. The Dutch indeed still do ADA right, but it is imperative that the U.S. do better.


Staff Sgt. Dustin Ries, B Battery, 1st Battalion, 78th Field Artillery 13F instructor, validates the video game Virtual Battlespace 3 on Nov. 20, 2013. Ries along with other instructors from Fort Sill, Okla. checked to make sure the game could help train Soldiers on numerous tasks. (Photo by Marie Berberea, Cannoneer staff)

# Hide, Seek and Destroy: Training Mobile Fire Support

CPT Michael A. Raymond, SFC Cory Howland, and SSG Adam Petersen

When 13Fs graduate from Advanced Individual Training (AIT) they bring a basic understanding of indirect fire procedures to their new units. They know how to occupy observation posts, develop terrain sketches, and call-for-fire. Their units must continue the education process. The most important skill taught to junior 13Fs in the unit is the ability to call-for-fire in a mobile environment. In this article we discuss a method to practice these tasks in a high-intensity, competitive environment with a minimum of resources.

## The Problem

During a recent assessment of our fire support detachment's competencies, we identified mobile fire support as the greatest training need. The battalion had just returned from a non-doctrinal mission and was beginning its training reset. The detachment's Soldiers demonstrated proficiency of basic skills with the call-for-fire trainer but after a decade of non-doctrinal missions, most had never operated from anything but a static observation post.

Walk-and-shoots were identified as an initial solution. Senior detachment mem-

bers served as observer controllers (OCs). The OCs walked two- to four-man 13F teams through short dry-fire lanes. Every twenty- to fifty-meters the OC would halt the team, identify a distant target, and evaluate the team's call-for-fire against it. Basic scenarios were worked into the lane in order to force the team leaders to do simple fire planning. This work was partially inspired by GEN Petraeus's article, Walk and Shoot Training, Infantry magazine, but unlike their situation we did not transition to live-fire.

This training method had good initial results. Soldiers who had never called for fire on the move struggled with self location, the inability to use a terrain sketch, and the general concept, but quickly adapted. Team leaders appreciated the ability to mentor their Soldiers in the field instead of the classroom. Once the Soldiers developed basic mobile fire support skills, they began to ask for more.

To increase the difficulty of training we began to include injects. Different mission types were required, specific target effects and engagement criteria were added, equipment was added, taken away or degraded, and different common tasks were added. Multi-echelon training allowed fire support teams (FIST) to control several FO teams as they moved through the lane. This training was successful but lacked battlefield dynamics. Not all leaders make good OCs. Also, the trainees wanted more challenging targets.

Difficulties with the training mechanics seemed to rule out the effective use of an opposing force (OPFOR). Imagine two opposing forces in a training area, each with the goal of locating and calling for fire on the other force. It seemed very difficult to verify if a call-for-fire placed the notional impact near another team's location, especially as teams were expected to be constantly on the move. The detachment lacked access to any kind of automated Soldier tracking systems as might be found at a combat training center. Fire markers were ruled out as the leadership felt that the teams would see them coming and just move away.

## The Solution

Our key innovation in developing improved training was in limiting the mobility of the opposing forces. Specifically, we changed from constant movement to alternating two minute turns. When it was not a force's turn, they were required to stay fixed in place. The active force was given two minutes to move and try to call-for-fire on the other force. At the end of their two minutes, the active force was required to freeze in place and call up their observer location (OBLOC) to the umpire's station. After this, the opposing force's turn would begin and they would have their own two minutes to move and call-for-fire. This continued until all of one force's FO teams were destroyed. Calls for fire were processed at the umpire's station by comparing the shooting team's targeted grid to the OBLOCs of the opposing team.

The trainees enjoyed having an opposing force to fight against and the success of the training grew as the force sizes increased. In the initial trials, the force sizes were limited to one or two Soldiers. These individuals quickly converged on a strategy of "camping" in a fixed location and waiting for their opponent to move out into the open to attack them. While a valid strategy, this removed most of the training value. As detailed in Dave Grossman and Loren Christenson's article, *On combat: The psychology and physiology of deadly conflict in war and in peace*, battle buddies increased each other's combat motivation, we found

that once training grew to several 13Fs on the two forces, broken into separate FO teams, mobility was restored.

In the most successful incarnation of this Hide, Seek & Destroy (HSD) exercise to date, a full tactical scenario was added along with multi-echelon control. We developed a scenario that required one of the two forces to attack an objective, while the opposing force defended it. The attacking force was given more FO teams. As part of the scenario, each side was given two howitzer targets to plan that could include special munitions, and two notional mortar teams. Special munitions included notional minefields and smoke screens. Each mortar team could only shoot one mission per turn. The mortars were limited to a very short range, requiring the force leaders to reposition them throughout the exercise. Mortars that move during a turn cannot also shoot that turn. Each force was broken down into a company FIST and several FO teams working for it. This helped to teach the value of battle tracking. Personnel from our battalion Fires cells worked in the umpire's station to practice their own battle tracking skills.

HSD still has its challenges. Gameplay requires finding the right mixed terrain; too dense terrain limits long range missions. We had to add small numbers of paintball guns to the training as some Soldiers realized that they could dash to the location of a frozen opponent, get the grid on their GPS, and then dash away to call-for-fire on them. The biggest problem is the amount of time that it takes all the FO teams to send their OBLOCs up through their FIST. Two to three minutes are sometimes consumed collating OBLOCs, which keeps the frozen force sitting for long stretches at a time. Adequate supervision is also required to ensure that Soldiers are correctly practicing their tasks and not optimizing towards gamisms.

## The Future

In the future we plan to experiment with moving back to a full-motion exercise. Forces will no longer take alternating two minute turns. This will require the use of fire markers. Several personnel will be distributed about the training area. As fire missions come in to the umpire's station, the Fires cell manning it will move the closest fire marker to the target grid to assess the effects of the mission. We hope that by keeping several fire markers moving around the training area, the trainees may grow used to them and not always run away. We may also add direct fire components to the exercises.

Hide, Seek & Destroy has proven highly successful. It gets our Soldiers out in the field conducting training. Soldiers view the exercises as a skills-based competition and our leaders another venue to teach and mentor. We hope that it continues to evolve as an exemplar tool for training mobile fire support.

# ‘Aim High’ Battalion conducts pre-deployment railhead operations

Story and photo by SSG Cindy Talley

Though it was mid-July and over 90 degrees at the “Great Place,” that did not stop the Soldiers of 1st Battalion, 62nd Air Defense Artillery “Aim High” from their mission-readiness activities.

In preparation for their second deployment since the unit’s activation in October 2011, the “Aim High” Soldiers conducted pre-deployment railhead operations, July 16-21.

The process of preparing the vehicles for the railhead is a lengthy process that involves several days of different stations, inspections, and readiness checks to ensure the battalion’s equipment is ready for deployment.

Prior to operations at the railhead, all vehicles go through a series of inspections at both the battalion motor pool, which is known as Movement Preparation Area Operations (MPA Ops) and the Fort Hood Deployment Ready Reaction Field, also known as the “DRRF.”

For SPC Isaac Haynes, a Patriot fire control enhanced operator/maintainer with A Battery, 1st Bn., 62nd ADA, vehicle readiness at the battalion level is very important.

Soldiers of 1st Battalion, 62nd ADA “Aim High,” 69th ADA Brigade, ground guide vehicles onto the tracks at the railhead of Fort Hood, Texas, July 20. Soldiers of the “Aim High” Battalion practiced safety by wearing their reflective belts during railhead operations.

"We do it because we need to keep the loading of vehicles safe," Haynes said. "We start with MPA Ops (and) we take each and every vehicle through checks."

Following MPA Ops, the Soldiers of the battalion and their equipment proceed to the DRRF, where they work with civilian contractors through a checklist of standards that must be met before moving on to the railhead.

"We're currently employed in DRRF operations for weight and inspection of vehicles, in order for us to transport them through the railhead for deployment," said SGT Rafael Saucedo, a noncommissioned officer with D Btry., 1st Bn., 62nd ADA.

After successfully completing the two prerequisites, the next and final step of transportation operations is the railhead.

The railhead provided an environment perfect for teamwork, said SPC Trevor L. Daniels, a Patriot enhanced operator/maintainer with C Btry., 1st Bn., 62nd ADA.

"We received classes and a safety brief," Daniels explained. "From there, we got to work with the civilians on tying everything down, working as a team instead of working just on your own vehicle."

Daniels said the whole process expanded his knowledge on railhead operations.

"I learned from the civilians," Daniels said. "I definitely enjoyed it, got a little dirty, but it was definitely enjoyable."

Following the completion of railhead operations, the vehicles and equipment are transported to a port where they are loaded onto ships and carried to the unit's area of responsibility 'across the water,' which is a term used to signify a unit's deployment.

# IN THE NEXT ISSUE:


**Countering an Emerging Threat.** As the Army begins its 13th straight year of war, it is challenged to reshape into a leaner force capable of meeting the nation's strategic priorities, while remaining the most professional and proficient land force in the world. Large budget cuts will lead to greater risk, specifically gaps in training and maintenance, and the inability to respond to multiple contingencies. While remaining committed to the current fight, the Army is adapting to and also shaping the future. As the magazine for the Fires force, we want to show how the Army will incorporate lessons learned from more than 12 years of conflict into our doctrine, training, education, force structure, and modernization plans, while at the same time studying the future of conflict.