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RED LEG Update

The United States Army Field Artillery Branch's Newsletter

2015 KNOX, HAMILTON & GRUBER AWARD WINNERS

Dagger Brigade Digital Sustainment Training

Army JFO Instructor/JTAC
deploys to Afghanistan

Ground Clearance of Fires : Part I

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Purpose: Founded in 2011, the *Redleg Update* provides past and present Field Artillery leaders with a monthly update of informational highlights to assist in their individual, collective and professional training efforts, as well as report on activities occurring throughout the Field Artillery community.

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William A. Turner

Brigadier General, U.S. Army
Commandant,

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William A. Turner

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Points of Contact:

We appreciate those who have provided announcements, notices, articles and lessons learned.

Additionally, if you have a story of interest or wish to initiate a discussion on any topic or issue facing the Field Artillery community, contact Mr. John Folland, (580) 558-0831, or the editor of the *Redleg Update*, Ms. Sharon McBride, Field Artillery STRATCOM officer, (580) 558-0836.

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From the Commandant's desk

Happy New Year!

What a great way to start off the New Year by announcing the 2015 Henry A. Knox, Alexander Hamilton, and Edmund I. Gruber awards to some very deserving units and one outstanding NCO.

For those of you who don't know, quite a bit of consideration goes into selecting the recipients of these awards. It's a highly respected panel of brigade commanders and command sergeants major who make the selections every year.

Congratulations to Battery C, 2nd Battalion, 319th Airborne Field Artillery Regiment, 82nd Airborne Division Artillery, Fort Bragg, N.C. the recipient of 2015 Henry A. Knox award.

Battery C "STRIKE," 2nd Battalion, 319th Airborne Field Artillery Regiment is a M777A2 equipped, 155 mm, Airborne Battery with the mission of providing close supporting fires to the 2nd Brigade Combat Team, and the 82nd Airborne Division Artillery. During 2015 the battery's achievements were numerous, and they were highly deserving of this prestigious award. To read what this unit accomplished in 2015 [{Go to Page 4}](#).

The Henry A. Knox Award is named after the first Chief of Artillery, and first Secretary of War, Major General Henry A. Knox. The award recognizes the most outstanding Active Component battery. Originally called the Knox Trophy and Medal, the awards were established in 1910 by the Chief of Field Artillery and presented annually. They recognized the best artillery battery (Trophy) and best enlisted Artillery Soldier (Medal) based on performance, excellence, leadership and proficiency. The awards recognized hard work, talent and determination that resulted in performance of the highest of standards. The awards were halted during World War I and were not re-initiated until 2002.

Congratulations to Alpha Battery, 3rd Battalion 197th Field Artillery Regiment (HIMARS), with the New Hampshire Army National Guard the recipient of the 2015 Alexander Hamilton Award.

The Regiment is a storied combat unit that has been activated for federal service on numerous occasions throughout the Global War on Terror in support of Operation Iraqi Freedom, Operation Enduring Freedom, Operation New Dawn, and Operation Spartan Shield. A/3-197th achievements were above and beyond, to read highlights of what this unit accom-

plished in 2015 [{Go to Page 5}](#).

This award was created in 2002 and is named after American Statesman and Continental Army Artilleryman Alexander Hamilton. Hamilton was an outstanding Artillery battery commander and a skilled cohort of General George Washington during the Revolutionary War. Hamilton helped write the U.S. Constitution and also served as the Nation's first Secretary of the Treasury.

Congratulations to SFC Jorge A. Moraguzman of C Battery, 2nd Battalion, 15th Field Artillery Regiment, Fort Drum, N.Y. the recipient of the 2015 Edmund L. Gruber Award.

This award recognizes superb individual talent, and significant contributions to the Field Artillery's war fighting capabilities. SFC Moraguzman's successes were many in 2015. This is an NCO who has a strong history of excellent leadership. Following redeployment from Afghanistan in 2014, he led First Platoon through a transition from 3rd Brigade Combat Team to 2nd Brigade Combat Team. In nine short months, he led his platoon through reset operations, transitioned to a new brigade, completed readiness training, and geared up for a second deployment to Afghanistan. To read more about his accomplishments [{Go to Page 6}](#).

The Edmund L. Gruber Award is named after Brigadier General Edmund L. Gruber, a noted Field Artillery Officer, who as a First Lieutenant in 1908 composed the "Caisson Song," which the Army adopted as "The Army Song" (The Army Goes Rolling Along) in 1952. The Gruber Award was established in 2002.

I would like to thank all the unit leaders who took the opportunity to nominate their Soldiers and units, highlighting how they are leading the way for the Field Artillery branch. Units interested in being considered for 2016 awards can find how to submit their applications online at <http://sill-www.army.mil/USAFAS/index.html>.

**King of Battle!
Fires Strong!**

Brigadier General William A. Turner

2015 HENRY A. KNOX AWARD

Battery C, 2nd Battalion, 319th Airborne Field Artillery Regiment, 82nd Airborne Division Artillery, Fort Bragg, N.C.

This award recognizes the outstanding active duty Army Field Artillery Battery of the Year for superb mission accomplishment and overall unit excellence.

Battery C "STRIKE", 2nd Battalion, 319th Airborne Field Artillery Regiment is a M777A2 equipped, 155 mm, Airborne Battery with the mission of providing close supporting fires to the 2nd Brigade Combat Team, and the 82nd Airborne Division Artillery. During 2015 the battery's achievements were numerous, here are some highlights of their accomplishments.

STRIKE Battery conducted twelve separate live-fire training exercises, firing over 1,600 rounds in order to maintain readiness. In October 2015, the battery placed second in DIVARTY's 'Best of the Best' section competition. Both firing platoons conducted table XII qualification, immediately followed by a Battalion Gunnery exercise, and a Fires Coordination Exercise, providing fire support to the Brigade's Calvary Squadron early in the year. The battery has mastered the delivery of all types of munitions; to include live-firing eighteen rounds of M107, high-explosive munitions fitted with Precision Guidance Kits (PGKs).

Paratroopers from STRIKE also participated in several interoperability training exercises such as: Pegasus Cypher, Steel Saber, and a Combined Joint Operation Access Exercise (CJOAX). These events partnered the battery's Paratroopers with members of the 7th Parachute Royal Horse Artillery, 16th Air Assault Brigade, from Colchester, England, and culminated in two joint live-fire exercises.

A platoon from STRIKE provided two M777A2s and a Q-49 radar to participate in 1st Ranger Battalion's multi-lateral training exercise at Hunter Army Airfield, Ga., after receiving a request from 1/75 RGR for 155mm support. 2nd Platoon demonstrated their ability to conduct rapid air-land infiltration from a C-17 Globemaster III, emplaced howitzers, and received digital counter-fire missions from a Lightweight Counter Mortar Radar (LCMR) during this training event.

Additionally, the battery maintained an average of 271 points on the APFT. One Paratrooper earned the title of 'Brigade Trooper of the Year,' and one NCO was recognized as the Brigade and Division



Battery C, 2nd Battalion, 319th Airborne Field Artillery Regiment, 82nd Airborne Division Artillery, Fort Bragg, N.C. in action. U.S. Army photo released.

NCO of the year. He went on to compete in the XVIII Airborne Corps NCO of the Year competition and placed second overall. The battery's most junior Section Chief graduated ALC as the class distinguished honor graduate, and six leaders in the battery graduated from the United States Army Advanced Airborne School as Jumpmasters during the last twelve months as well. The 82nd Airborne Division Commander also recognized one of the battery's spouses for outstanding support to the Family Readiness Group and the FT Barrage Community.

During the last twelve months Charlie Battery has maintained a platoon's worth of men, weapons, and equipment on an eight hour recall; ready to jump fight and win, tonight.

2015 ALEXANDER HAMILTON AWARD

Alpha Battery, 3rd Battalion, 197th Field Artillery Regiment
(HIMARS), New Hampshire Army National Guard



Alpha Battery, 3rd Battalion, 197th Field Artillery Regiment (HIMARS), New Hampshire Army National Guard in action. U.S. Army photo released.

This award recognizes the outstanding U.S. Army National Guard Field Artillery Battery of the Year for superb mission accomplishment and overall unit excellence.

Alpha Battery, 3rd Battalion, 197th Field Artillery Regiment is a storied combat unit that has been activated for federal service on numerous occasions throughout the Global War on Terror in support of Operation Iraqi Freedom, Operation Enduring Freedom, Operation New Dawn, and Operation Spartan Shield. During 2015 the battery's achievements were numerous, but here are some highlights of their accomplishments.

Alpha Battery was activated on Feb. 21, 2015 for mobilization training at Fort Bliss, TX. Mobilization preceded deployment to Southwest Asia in support of Operation Enduring Freedom (Operation Spartan Shield). The unit conducted a contiguous mobilization, performing their Annual Training at Fort Bliss in the two weeks leading up to the date they were ordered to active duty.

Alpha Battery integrated into Operation Spartan Shield in an exceptional manner, assuming the responsibility for several contingency operations.

This included maintaining a Fires Response Element (FRE) in support of missions in the CENTCOM AOR. The unit worked tirelessly to prepare a platoon and all associated equipment that was capable of deploying within a very limited notice to any location in the CENTCOM AOR. Alpha Battery's high level of excellence in their Mission Essential Task List (METL) allowed them to maintain an increased readiness posture in the event they were called on to execute a FRE operation.

In 2015, Alpha Battery made several monumental achievements that led them to be one of the most successful HIMARS units in the United States Army. They were part of the first National Guard battalion to perform an artillery mission in support of Operation Spartan Shield.

They were also the first National Guard unit to participate in Operation Eager Lion, serving as the only reserve component element during the entire exercise. Alpha Battery trained coalition partners and performed in an outstanding manner during their deployment, increasing regional stability across the CENTCOM AOR.

2015 EDMUND L. GRUBER AWARD

**SFC Jorge A. Moraguzman of C Battery, 2nd Battalion,
15th Field Artillery Regiment, Fort Drum, N.Y.**

This award recognizes an outstanding Field Artillery Soldier for superb individual thought, innovation and overall excellence that results in significant contributions to or the enhancement of the Field Artillery's war fighting capabilities.

SFC Moraguzman's contributions as a Firing Battery Platoon Sergeant during 2015 were numerous; but here are some highlights of his accomplishments.

This is an NCO who has a strong history of excellent leadership. Following redeployment from Afghanistan in 2014, he led First Platoon through a transition from 3rd Brigade Combat Team to 2nd Brigade Combat Team. In nine short months, he led his platoon through reset operations, transitioned to a new brigade, completed readiness training, and geared up for a second deployment to Afghanistan.

Despite an extremely demanding operational tempo that included New Equipment Fielding/New Equipment Testing (NEF/NET) for their new M777A2s, a grueling sub-zero temperature Brigade Fire Support Coordination Exercise (FSCX), a rotation to the Joint Readiness Training Center, selection to provide support to the U.S. Army Operational Test Command to test the advanced Precision Guided Munitions (PGMs), and then ultimately deploying in support of Operation Freedom's Sentinel 15-16, SFC Moraguzman led his platoon to excellence.

Within four months of deployment, SFC Mora-



SFC Jorge A. Moraguzman, right, in action. U.S. Army photo released.

guzman supervised his platoon as they fired over 150 fire missions in support of multinational operations within the TAAC-S Area of Operations and Kandahar Airfield (KAF) Ground Defense Area (GDA).

Dagger Brigade Digital Sustainment Training

Digital sustainment training is critical to increase competencies and gain confidence in our systems. We need to focus on the proper doctrinal and technical application of these systems. Many operators and leaders quickly blame the system whereas training is the deficiency. During a recent digital exercise conducted on Fort Riley, the average mission routing time from sensor to shooter was less than 4 minutes. However, it took the team about 5 hours to configure the database to properly process the missions and route ancillary data. This article outlines our training methodology and leader development to ensure 4 minute processing times are the norm not the exception.

-- Foreword by COL Miles Brown, Commander 2nd Armor Brigade Combat Team, 1st Infantry Division and LTC Jim Collins, Commander 1st Battalion, 7th Field Artillery, 2nd Armored Brigade Combat Team.

By CPT Nicholas G. Molnar is the Battalion Fire Direction Officer for 1-7th Field Artillery, 2nd ABCT, 1st Infantry Division, Fort Riley, KS and CPT Joshua M. Herzog is the Brigade Fire Support Officer for 2nd ABCT, 1st Infantry Division, Fort Riley, KS.

In September 2014, 1st Battalion, 7th Field Artillery, 2nd Armored Brigade Combat Team, 1st Infantry Division, completed reorganization in accordance with Army Structure 2014 and began digital sustainment training (DST) in preparation for National Training Center Rotation 15-06. The training objectives were clear, yet complex in execution:

1. Validate the functionality of all systems including their components of end item (COEI). This was critical to assess our digital readiness after the consolidation of all the fire support equipment into the field artillery battalion.¹

2. Establish a common database to include supplemental software. The database was designed not to enable fire mission processing but to facilitate training objectives by adding complexity to fire mission processing.²

3. Build and train on the local area network (LAN), the frequency modulation (FM) network, and other supplemental communication networks in accordance with the unit's primary, alternate, contingency and emergency (PACE) communication plan.

¹ Ruggedized Handheld Computer V2 (RHC2), Pocket-sized Forward Entry Device (PFED), Stand-alone Computer Unit (SCU) and Fire Support Advanced Field Artillery Tactical Data System (AFATDS).

² Examples include: FOS with Precision Strike Software/DPPDB, AFATDS guidances, mission prioritization, fire support coordination measures, data distribution, differing ammunition on hand by unit

4. Minimize mission processing "recalculations" in AFATDS at all echelons – understand what is required to analyze target then accept recommendations.

5. Integrate the planning and current operations functions of both AFATDS and the Effects Management Tool (EMT) into TOC operations.

6. Maximize interoperability with other mission command systems³ using the data distribution server (DDS) and the command and control registry (C2R).

Multi-Echelon Nodal Structure. We estimated, based on the number of hours required to accomplish our training objectives, DST must occur no less than weekly from September 2014 to February 2015. With the Battalion Commander's emphasis on DST, weekly training was feasible, but due to other competing requirements, it was not realistic to assemble the entire fire support network on such a frequent interval. Therefore, training was separated into three nodes:

1. Fire Support Training: Observer - Task Force Fire Support Elements (FSE) - Brigade FSE.

2. Tactical Fire Direction: Brigade FSE - Battalion Fire Direction Center (FDC).

3. Technical Fire Direction: Battalion FDC - Platoon FDCs - M109A6 Paladin

We assumed risk by executing de-centralized DST but this was required to efficiently target specific training objectives at echelon. Initially, these weekly sessions were very simplistic until we could train the

³ Command Post of the Future (CPOF), Tactical Airspace Integration System (TAIS), Force XXI Battle Command Brigade-and-Below Joint Capabilities Release (FBCB2 JCR), and Distributed Common Ground System – Army (DCSG-A)

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core group of leaders to understand how to properly structure the weekly training in accordance with the eight step training model and increase technical digital system expertise within each section.

Leader Development. The leader training program was executed concurrently with nodal training to allow the leaders to gain experience, but more importantly confidence, on their systems.⁴ This training was done without the system operators – only the company grade officers. The leaders quickly realized that an increased understanding of these digital systems was required to properly train and supervise their sections. The training focused on three fundamentals:

1. how the system processed data;⁵
2. when errors occur, “why”; and
3. refining the digital standard operating procedures (SOP). The knowledge gained, specifically regarding the integration of plans and current operations on AFATDS, the use of coordination requests, and utilization of continuity of operations (CONOPS) was critical to ensure we were using AFATDS properly and eliminating work-arounds.

LAN vs. FM

Periodically during the nodal training and leader training program, multiple nodes would assemble for collective training. This was critical to ensure each node understood how the actions of one system effects the rest of the network. The use of a LAN focused the training on communication between systems and database management. Five to seven feet of separation between systems created a controlled environment where personnel benefitted from their colleague’s knowledge and facilitated group learning. Training on a LAN connection is ideal for troubleshooting, establishing standards across the network, and the validation of SOP. However, under very few circumstances will the tactical network be completely LAN; training must be balanced between the LAN and FM network. We established the FM digital network in the combat vehicles: M3A3 BFIST, M1068, and M109A6 Paladin.

4 1-7 FA structured leader training focusing on development of company grade officers. This training was conducted during Sergeant’s time training (STT) to reduce training conflicts.

5 For example, how AFATDS utilizes the data input in the guidance workspace to determine the mission value and how FOS target types differed in translation to AFATDS target types.

The FM network is ideal to verify the functionality of system hardware and exercise crew drills. The FM network in combat vehicles introduced new challenges such as network saturation, range issues, and maintenance. Additionally, sections were able to train crew drills, such as howitzer tracking charts, analog graphics, ammunition trackers, intervening crests, and records of fire (DA Form 4504/4513). The FM network allows the training to be more tactically oriented and easily applied to field or combat scenarios. In December 2014, the above mentioned training objectives were complete and we transitioned to collective, scenario-based DST.

Scenario Based Training

Scenario-based training integrates all nodes with collective training objectives into short, intense sessions where shortfalls can be identified, corrected, and applied throughout multiple iterations in a single day.⁶ The Brigade FSO and Battalion FDO, working collaboratively with the Brigade FSCOORD, facilitated the training event by introducing friction points and injects targeting specific training objectives. Scenario based training is the best way to stress each of the nodes and replicate combat operations. Each node had separate training objectives that fit into the network as a whole. For example, to train the employment of precision munitions, observers trained on using Digital Precision Strike Suite software to mensurate target grids, FSEs conducted basic weaponeering, the Battalion FDC conducted tactical fire direction, and Platoon FDCs conducted technical fire direction with GPS guided munitions. Scenarios built confidence and competence on the digital systems and allowed for the evolution of DST to more advanced training objectives.⁷

6 We utilized movement to contact scenarios, with each unit established in an initial position and their movement triggered by maneuver actions, controlled by the Brigade Fire Support Officer (FSO) or the Brigade Fire Support Coordinator (FSCOORD). Observers executed missions in conjunction with planned targets as they are triggered. Platoon FDCs maneuver throughout the Position Areas for Artillery (PAA) and manage ammunition while executing fire missions. Each session lasted 30-45 minutes with a hotwash at the end, allowing for assessments to be applied to the next iteration.

7 1-7 FA defined advanced training as the incorporation of simulations, integration of additional communication platforms, and the inclusion of additional ABCS.

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DFSTS

The utilization of the Digital Fire Support Training System (DFSTS) added realism to the training. DFSTS can replicate firing units, sensors, adjacent units and higher headquarters. We programmed DFSTS with scenarios to saturate the Brigade FSE with numerous data injects focused on mission prioritization and fire support coordination measures (FSCM) management. Additionally, the DFSTS was used to replicate 18 Paladins when their participation wasn't feasible (LAN environment). The simulated howitzers added realism by sending mission status updates through the network from shooter to sensor.

Communication Platforms

The utilization of high frequency (HF) radios increases our ability to communicate at echelon and expands the PACE beyond the FM and LAN networks. Confidence gained in operating the FM network can be applied to HF radios. The HF digital capability expanded the range of communication beyond 100+ kilometers. We successfully exchanged data using AFATDS between Fort Riley and Fort Sill.

Internal Fires Systems Expansion

AFATDS interfaces with the EMT and Computer Meteorological Data-Profiler (CMD-P) - both provide unique capabilities. The functions of the EMT vary but we focused our training on synchronization of current operations, the planning of subsequent operations, and as part of the airspace clearance drill. Of course, the CMD-P is required to obtain metrological data to meet the 5 requirements for accurate fire. Once the core competencies in the internal fires network had been established, external systems were introduced into the DST program.

External Fires Systems Expansion

The integration of TAIS, CPOF, and DCGS-A using the DDS and C2R servers is necessary to establish a common operating picture. These systems are critical for planning, collaboration, airspace clearance and battle damage assessment (BDA) reporting throughout the brigade. Since this expanded DST requires assets that are not organic to the field artillery battalion,

they must be integrated into events where the brigade establishes their ABCS and network. We utilized the Mission Command System Integration (MCSI) and Command Post Exercises (CPX).

Lessons Learned

1. Guidance Workspace. Proper management of the data within guidance workspace is critical to eliminate work-arounds. Both the Brigade FSO and Battalion FDO need to understand the algorithm that determines mission value and closely manage the cannon attack methods to ensure the munition allocation provides an executable firing solution that meets the commander's intent for fires.

2. Data Distribution. The automated distribution of data expedited the sharing of the common operating picture across all fire support systems. Understanding what units require specific information is key to establishing a system's distribution lists; however, the data distributed is not always all-encompassing. Certain key geometries and data are not automatically distributed across the network and this must be understood to ensure the common operating picture is maintained (e.g. the coordinated firing line (CFL)).

3. AFATDS Planning Function. AFATDS has both current operations and planning capabilities. We were familiar with current operations but lacked knowledge on the proper utilization of the planning function. In accordance with the MTOE allocation we attempted to maximize both; the Brigade FSE tried to conduct collaborative planning by developing multi-phase courses of action and publishing fire support products across the fires network through the Text Index. However, during our training, we were mostly unsuccessful. The transfer of the plans to current routinely corrupted the database and proved impractical. Instead, the Brigade FSE utilized its plans AFATDS to disseminate changes to current operations (e.g. guidances (HVTs, HPTs, priority of fires, TAIs, and cannon attack methods), geometries, and use of field order message formats to publish WARNOs and the Brigade's Annex D).

Conclusion

Frequent DST is invaluable. Critical, and sometimes

Dagger DTS ...Continued from Page 9

painful, friction points that were discovered during our digital training events are easily remedied with a more sophisticated understanding of the database. Every opportunity to train DST in a controlled environment significantly increases efficiency during field exercises. Conditions are set to test the quality of our DST

program during the upcoming decisive action rotation of the NTC.

Special Thanks: The authors would like to acknowledge the valuable support and commitment of Brad Linton, the Field Service Representative for 1st Infantry Division, the Fires Center of Excellence, particularly SFC Walthall and TCIM Fires, in providing guidance and sharing knowledge on the application of systems and the Fort Riley Mission Training Complex (MTC). Without their support the 1-7 FA Digital Sustainment Training program would not have been successful.

THIS MONTH IN HISTORY "JANUARY & FEBRUARY"

1 January 1969, The U.S. Army Artillery and Missile School was officially redesignated as the U.S. Army Field Artillery School.

6 January 1776, Alexander Hamilton formed his field artillery battery, called Alexander Hamilton's battery, that later became 1-5th Field Artillery.

8 January 1869, The site of Fort Sill was staked out by MG Philip H. Sheridan who led a campaign into Indian Territory to stop hostile Native American tribes from raiding white settlements in Texas and Kansas.

15 January 1918, Employing balloons and fixed-wing aircraft, the School for Aerial Observers at Fort Sill was fully operational training aerial observers to locate enemy targets to be engaged with field artillery fire.

23 February 1847, Major General Zachary Taylor's army of 5,000 effectively employed its field artillery

to defeat the much larger Mexican army under Santa Anna at the Battle of Buena Vista. Captain Braxton Bragg's battery galloped into action at a critical time and successfully repelled a Mexican charge.

24 February 1991, The 42nd, 76th, and 142nd Field Artillery Brigades launched a fiery bombardment to support the breaching operation to start the ground war in Operation Desert Storm. More than 350 field artillery pieces fired 11,000 rounds and 414 MLRS rockets in a field artillery preparation of 30 minutes. Besides crushing Iraqi morale, this massed fire destroyed 50 tanks, 139 armored personnel carriers, and 152 field artillery pieces.

28 February 1991, the Gulf War ended by driving Iraq out of Kuwait. During the 100-hour ground war, the American Field Artillery fired 57,168 rounds. Of that total the Americans shot 32 Army Tactical Missile System (ATACMS) missiles of artillery.



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Army JFO Instructor/JTAC deploys to Afghanistan

By Sharon McBride, USAFAS Outreach Officer

An Army Joint Fires Observer (JFO) instructor from 428th Field Artillery at Fort Sill, Okla., who is also a Joint Terminal Attack Controller (JTAC) has made history by being the first Army JTAC to deploy to Afghanistan with the 504 Expeditionary Air Support Operations Group (EASOG). As a Joint Effects NCO, SFC Derrian Richardson, deployed to augment tactical parties.

“I am working in a Joint Effects Cell (JEC), in the Combined Joint Operations Center (CJOC) in Afghanistan,” said Richardson.

This is a great experience that will improve invaluable once he returns to 428th Field Artillery as a JFO instructor. The JTAC QC is held at Nellis Air Force Base in Nevada. Typically, it is Air Force personnel who graduate from the difficult, four-week course to become Air Force Joint Terminal Attack Controllers. JTACs work alongside Soldiers to control precision air strikes, close air support and other offensive air operations. JTACS work as a part of a Tactical Air Control Party (TACP). The TACP is usually comprised of a JTAC (Joint Terminal Attack Controller) and supporting personnel, most often a JFO.

Allowing JFO instructors to attend the course became a great way to augment the quality of JFO instruction without having to station additional Air Force JTACs at Fort Sill, said USAF Lt. Col Walter Wilson, Commander, 6CTS Det-1, Fort Sill, Oklahoma.

“There aren’t enough JTACS to sufficiently cover the battlefield so JFOs are used as force multipliers in a strategic context,” said Wilson. “So in 2006, it was agreed on a limited case-by-case basis, no more than eight a year, we will teach your JFO instructors to become a JTAC.”

JTACs provide terminal control of both air and surfaced based fires at the tactical level— they are the ones on the ground “calling in strikes” on targets. Their training teaches them to be an additional targeting sensor.

“The TACP is now made up of more JFOs than JTACs. The guys training those JFOs should be of the highest quality instructors —close air support educated — as we can make them,” said Wilson. “We must ensure these JFOs get top-of-the-line training.”

The JFO course is designed to provide select personnel with training in engaging targets with AC-

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Army JTAC

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130, naval surface fires, indirect surface fires and on procedures for providing timely and accurate targeting information to a qualified JTAC for Type 2 and 3 Close Air Support (CAS) Terminal Attack Controls, and conducting Terminal Guidance Operations (TGO).

The JFO program currently focuses on providing training that enables those who become certified to quickly and accurately provide the information necessary for JTACs to prosecute targets and avoid fratricide and unnecessary collateral damage.

For JFOs, knowing how to communicate to other services' air support is vital. It's not just about the English language but the specific JTAC terminology that goes along with close air support. The Air Force and their JTACS talk in a different language. It's not really 'common sense' terms but very 'technical terms.'

"Every word has a paragraph of meaning assigned to it," said Wilson. "A slightly different word can mean an entirely different thing. It takes a highly-focused trained mind to get it right.

"Say the right words, in the right order in an environment where bullets are flying and the radio doesn't sound very clear... dust blowing everywhere... low visibility... if something goes wrong, the thing that goes wrong is collateral damage."

Without a JTAC or a JFO on the ground it's extremely different for aircraft to drop bombs. A lot of the targets that are engaged are close to friendly forces.

"I initially attended the JTAC Course so I could provide additional information as an instructor to students attending the Joint Fires Observer Course," said Richardson. "I could understand and provide the 'why' to my JFO students as to the reason they execute in the format that they do. I now know and understand information that is not captured during the JFO Target Brief, and can now translate that material to my students. For example, what the JTAC

is communicating during his Close Air Support Brief and what that JTAC sees as an overall picture."

Richardson explains, knowing the overall picture is important because a JFO is normally not focused on that, but only on their current operation. Their operation is usually smaller in scope, normally at Company level or below. A JTAC is focused on multiple operations and on a larger area of operation, most likely at Battalion/Brigade and below. JTACs must coordinate several layers of air and ground support, and it can be extremely valuable for JFOs to know and understand...to know exactly how all the layers work together.

A JFO extends the operational reach of the JTAC as his "eyes forward" providing targeting data, to include mensurated coordinates for Type II and Type III CAS. JFOs, in conjunction with JTACs, are trained to assist maneuver commanders with the timely planning, synchronization, and responsive execution of close air support.

The JTAC course provides JFO instructors with valuable knowledge that in turn will create the highest quality instructor and in doing so will we make the entire TACP better because they got top of the line training, said Wilson.

"We have to have the best possible trained JFOs," said Richardson.

A JFO with a radio integrating fires with exact precision on the enemy makes him or her a valuable asset to the Maneuver unit and a combat multiplier, Richardson explained.

Both JFO and JTAC courses are difficult, and take preparation to successfully complete.

"My recommendations for any Army Soldier planning to attend these courses is to learn the different forms of communication... from radios and targeting devices to reading maps in different scales," said Richardson.

Ground Clearance of Fires: Part I

By LTC Pat Proctor, PhD

“Maneuver commanders clear fires. Normally, managing this is delegated to their main command posts and executed by the battle staff under the lead of the FSE. In either analog or digital operations, silence is not consent - clearance of fires requires positive action.”

--FM 3-09.31

Tactics, Techniques, and Procedures for Fire Support for the Combined Arms Commander

While the Field Artillery has made great strides over the past two years at the Section and Platoon level in improving its proficiency in gun line procedures and technical fire direction, Fire Supporters continue to struggle to integrate fires into the combined arms fight. Among the biggest challenges the Fires community faces is in executing the basic clearance of fires battle drill — both ground and air clearance.

Admittedly, this is a combined arms problem; while the ground tactical commander owns the ground and airspace and the aviation commander owns the airframes traveling through the airspace. However, Fire Supporters are entrusted by maneuver commanders with the clearance of fires process. Fire Support officers, NCOs, and Soldiers are embedded in maneuver formations at every level from the Platoon through the Brigade specifically to integrate fires into combined arms maneuver and clearance of fires is a key part of that integration.

This article will address only the first part of the clearance of fires equation: ground clearance of fires. The next article in this series, Part II, will address airspace clearance of fires.

The State of the Field Artillery

Infantry Brigade Combat Teams (BCTs) executing combined arms maneuver at the Joint Readiness Training Center (JRTC) struggle to deliver timely Field Artillery fires in support of their operations.

Tables 1 and 2 show average fire mission processing times, from receipt at the Brigade Fires Cell (FC) to firing of the first round of a fire mission. These two tables provide times for counterfire and other fire missions (pre-planned and targets of opportunity), respectively.

This data is taken from the last four Decisive Action rotations executed by active component Army BCTs at the JRTC. However, BCTs vary widely in their ability to deliver timely Field Artillery fires; some BCTs take an average of 19 minutes or longer to process fire missions while others process fire missions at an average of 10 minutes or less. Moreover, the trend over the past four Decisive Action rotations is toward shorter fire mission processing times. Still, there is much room for improvement.

What immediately stands out from this data is that a great deal of the total fire mission processing time is consumed at the Brigade Fires Cell (FC). This time directly equates to the amount of time required to obtain air and ground clearance of fires. In the over two years since the JRTC resumed habitually training combined arms maneuver, two issues have consistently slowed the process of ground clearance of fires. First, BCTs have struggled to effectively manage and employ fire support coordination measures (FSCMs). Second, BCTs have struggled to maintain situational

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Table 1: Counterfire Average Mission Processing Times

| Echelon | Average | TC 3-09.8 Standard (Digital) | Delta |
|---------------------------|----------------|-------------------------------------|--------------|
| Brigade FC | 08:47 | N/A | |
| Battalion FDC | 5:14 | 00:35 | +04:39 |
| Platoon FDC | 03:57 | 00:35 | +03:22 |
| M119A3 section | 01:13 | 00:30 | +00:43 |
| M777A2 section | 5:31 | 01:00 | +04:31 |
| Average Total Time | 13:01 | | |

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Table 2: Pre-Planned and Target of Opportunity Average Mission Processing Times

| Echelon | Average | TC 3-09.8 Standard (Digital) | Delta |
|--------------------|---------|------------------------------|---------|
| Brigade FC | 08:06 | N/A | |
| Battalion FDC | 03:32 | 00:35 | + 02:57 |
| Platoon FDC | 04:17 | 00:35 | + 03:16 |
| M119A3 section | 02:47 | 00:30 | + 02:17 |
| M777A2 section | 02:11 | 01:00 | + 01:11 |
| Average Total Time | 11:12 | | |

understanding of where their Soldiers are on the ground.

Fire Support Coordination Measure (FSCM) Management

BCTs consistently struggle to maintain a common picture of FSCMs across all of the elements in their formation. From no-fire areas (NFAs) to coordinated fire lines (CFLs) to restricted fire areas (RFAs), every element and echelon in the Brigade frequently has a

“Proper use of FSCMs...facilitates the clearance of fires...if positioned correctly and disseminated to all higher, adjacent, and subordinate units.”

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different understanding of what FSCMs are in effect. During the execution of fires, this creates friction which slows down fire mission processing times, as one fire direction center (FDC) or one FC intervenes because — correctly or incorrectly — it believes that a fire mission violates an FSCM. Or, worse, no element intervenes because they are unaware of an FSCM, resulting in collateral damage to civilian infrastructure, civilian casualties, or fratricide. In the aftermath of such a traumatic incident, tactical operations centers (TOCs) across the Brigade become hesitant to clear fires, unsure of their understanding of the currently active FSCMs, further slowing the clearance of fires process.

Units are frequently surprised to experience these problems at the JRTC because they arrive believing that the Advanced Field Artillery Tactical Data System (AFATDS) has already solved the problem of maintaining a common picture of FSCMs across the

Brigade. But in practice, this is not the case. Communications that might be relatively easy to maintain in a simulation center or in the field during home station training are very difficult to maintain in the complex terrain and competitive environment of the JRTC. At any given time during a rotation, some AFATDS in a BCT are communicating over the secret internet protocol router (SIPR) network, some are communicating over frequency modulation (FM) radio, and some are not communicating at all. FSCMs created or deleted in this patchwork communications environment are frequently not disseminated to every element and every echelon in the Brigade. In such an environment, the AFATDS alone cannot be relied upon to sustain a common understanding of FSCMs across the Brigade; backup procedures are required.

The first and most effective way to fix this problem is to put a leader in charge of fixing it. The Brigade Fire Support Coordinator (FSCOORD, the Field Artillery Battalion Commander) must designate one person in the Brigade as the “CINC-FSCM.” The Brigade Fire Support NCO (FSNCO) is probably the right person for the job; he works in the Brigade FC, supervises the AFATDS operators and the Fire Support Specialists, and has the rank and experience for the task.

The CINC-FSCM’s duties and responsibilities are, simply put, managing the FSCM system for the Brigade. First, the CINC-FSCM (the Brigade FSNCO) should be the only person in the Brigade authorized to add or delete an FSCM from the AFATDS database. Thus, other elements, whether a platoon Forward Observer (FO), a Company Fire Support Team (FiST), or a Battalion FC, should never input or delete an FSCM from their digital systems. Instead, they should contact the CINC-FSCM to establish or delete the FSCM. The CINC-FSCM will then make sure that the change is made in his AFATDS and dis-

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seminated digitally to all of the other AFATDS in the Brigade. For those AFATDS that are not communicating digitally, the CINC-FSCM ensures that they receive the change via voice communications over FM or SIPR voice-over-IP (SVOIP).

The CINC-FSCM is also responsible for periodically checking to ensure that FSCMs are common across all of the AFATDS in the Brigade through a Fire Support synchronization meeting. Multiple times every day, the CINC-FSCM should run a meeting attended by every element in the Brigade that has an AFATDS to ensure that they all have a common understanding of what FSCMs are currently in effect. This meeting can be conducted over SVOIP, FM, or some other means of communication. During the meeting, the CINC-FSCM should, as a minimum, review the number of active FSCMs by type that he is tracking for the Brigade. If an element has a different number of any category of FSCM, the CINC-FSCM can talk to that element separately, reviewing each FSCM by name or number, to identify which FSCM that element is missing or incorrectly tracking as active.

A few additional notes are in order about the Fire Support synchronization meeting. First, the more frequently a Brigade conducts this meeting, the shorter it will be; frequent maintenance of the fires common operating picture (COP) will ensure that there are fewer discrepancies during each review. Second, the Fire Support synchronization meeting is also a great venue to review other elements of the fires COP. During this meeting the Brigade Fire Support Officer (FSO)



could review the current target list or the current Fire Support tasks (FSTs). The Counterfire Officer could review active radar zones and the search azimuth for each radar. The Field Artillery Battalion Fire Direction Officer (FDO) could review the current tube strength for each Battery. This meeting is a useful venue not just to synchronize FSCMs, but to synchronize every element of the fires COP.

The Most Important FSCM

One final and very important note is in order before leaving

“The first step in effective clearance of fires is the use of maneuver control measures. Any time you can procedurally depict ownership of land the better for clearing fires. If no boundaries are established, all fires short of the CFL (if established) must be cleared by the higher headquarters instead of the headquarters closest to the fires.... Serious consideration should be given for establishing areas of operation for each subordinate maneuver unit, consistent with the scheme of maneuver.”

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the subject of FSCMs.

Another trend that is consistently seen at the JRTC is that Brigades are failing to establish and employ the most fundamental and essential FSCM of all: the unit boundary. The *FM 3-09*, Field Artillery Operations and Fire Support (dated April 2014) notes that a unit boundary is “both permissive and restrictive in nature.” It is permissive in that a unit may use direct and indirect fires inside its own boundary without external coordination. A boundary is restrictive in that “units do not fire across boundaries unless the fires are coor-

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minated with the adjacent unit or the fires are allowed by a permissive fire support coordination measure, such as a coordinated fire line.”

Yet, BCTs executing combined arms maneuver at the JRTC frequently do not establish boundaries between subordinate maneuver battalions and squadrons. The BCT is left with one massive Brigade area of operations (AO) and every fire mission must be cleared with every subordinate unit before it can be fired. By contrast, if individual Battalion AOs have been designated with unit boundaries, only the Battalion that “owns” the ground where the fire mission is to be fired must be contacted for clearance of fires. If the tactical situation permits, this Battalion AO could be further segregated into company AOs, speeding ground clearance of fires even more.

Establishing unit boundaries is a maneuver responsibility; it is the BCT or maneuver Battalion S3 who will actually establish a unit boundary. However, Brigade and Battalion FSOs must be actively engaged, advocating for the establishment of these boundaries. While the ground tactical plan for a Brigade attack or defense might not require unit boundaries, Fire Supporters must remind their maneuver counterparts that integrating Fires into the ground tactical plan does; unit boundaries facilitate the rapid clearance of fires during execution of the combined arms fight.

Second, unit boundaries need to be managed by the Brigade just as do other FSCMs. And here, again, Fire Supporters have a responsibility to reminding their maneuver counterparts of their role in facilitating the integration of fires into the combined arms fight. Even after the establishment of a Battalion AO, a maneuver Battalion cannot effectively own this ground without help from the Brigade S3 and Battle Captain. While the Battalion owns the ground in its AO, there will be many other Brigade elements present in that AO, including Field Artillery Platoons, elements of the Brigade Support Battalion, and many other elements of the BCT’s combined arms team. It is the responsibility of the Brigade S3 to, as much as possible, add graphical control measures to restrict the movement and positioning of these elements, including main supply routes (MSRs), position areas for artillery (PAAs), and a Brigade support area (BSA), just to name a few. Likewise, it is the Brigade Battle Captain’s job to ensure that these Brigade elements are adhering to these control measures and, more importantly “checking in”—coordinating with maneuver Battalion TOCs—as they enter and leave each Battalion’s AO. Fire Supporters, embedded in each maneuver element at every echelon can assist in this process by tracking

the locations of Brigade Fires assets as part of the fires COP.

Keeping Track of Where We Are

The introduction of Army battle command systems (ABCS) to BCTs over the last two decades has revolutionized warfare. But it has also caused an atrophy of some of the U.S. Army’s most basic mission command skills. Moreover, nearly a decade and a half of the Global War on Terrorism has further atrophied those mission command skills that are specific to combined arms maneuver. Nowhere is this atrophy more acutely felt than in the task of tracking the location of individual Soldiers on the battlefield.

The family of Army systems that are used to communicate unit locations from lower to higher—ranging from the Force XXI Battle Command Brigade and Below (FBCB2) through Blue Force Tracker (BFT) to the Joint Battle Command-Platform (JBC-P)—have increased by orders of magnitude the fidelity with which a BCT can “see itself” in its TOC. But these systems have also accelerated the atrophy of a procedure that is critical to ground clearance of fires in combined arms maneuver: tracking the front line trace of subordinate units.

JBC-P and its predecessors do not replace these tracking procedures. While a JBC-P will provide a “blue dot” to indicate the location of itself on the battlefield, this icon will almost certainly not accurately reflect the location of every Soldier in that element. Rather, this icon indicates the location of the single vehicle or TOC in which that system is installed. And, while JBC-P communications are considerably more reliable than the patchwork of SIPR and FM networks that connect AFATDS, JBC-P and global positioning systems (GPS) do occasionally break, shut down, or lose connectivity. Thus, these systems cannot be relied on alone to clear ground for fires.

Without a system in place to track the front line trace of subordinate units, the ground clearance of fires slows to a crawl. The Brigade FC must call the subordinate maneuver Battalion (or every subordinate maneuver Battalion if no Battalion boundaries have been established). The Battalion FC or Battle Captain must then call every subordinate Company to clear the fire mission. And each Company Commander must call the affected Platoon Leaders to ensure that they are clear of the fire mission location. Each of these communications might only take a few seconds, but these seconds quickly add up to the more than eight

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U.S. Army photo released.

minutes that it is currently taking to clear a fire mission at the Brigade FC prior to firing.

The Fires community used to know how to do this. In fact, a large part of the reason that Fire Supporters are embedded in maneuver units at every level from the Platoon to the Brigade is to help their maneuver counterparts execute this process. Before the Global War on Terrorism, there were numerous techniques for tracking the front line trace of subordinate units. Standard operating procedures (SOPs) varied from unit to unit, but generally involved periodic voice transmissions from lower to higher to communicate unit locations. At the JRTC, the Fire Support Division recommends an SOP of every 200 meters or phase line or every 15 minutes during a fight. That is, every time an element moves 200 meters or crosses a phase line, its Fire Supporter provides an updated six-digit grid for its front line trace to the Fire Support element at the next higher echelon. Likewise, if the element is not moving, it calls every 15 minutes to communicate that there is no change to its front line trace. Note that the reported six-digit grid is not necessarily the location of the Fire Supporter making the report; it is the location of the forward-most Soldier in the reporting element, whether the point-man in a platoon formation or the point-man of the lead platoon in a company movement. Platoon FOs report their front line trace to their Company FiST. The Company FiST reports its

front line trace to the Battalion FC. The Battalion FC keeps track of these reports on an analog map and, as possible, updates digital systems such as AFATDS or JBC-P with manually input icons to reflect these front line traces.

If every element in the clearance of fire chain is using such a procedure to track the front line trace of its subordinates, ground clearance of fires can be significantly streamlined. In fact, if all of the techniques suggested in this article are employed, the ground clearance of fires process can be reduced to a single communication between the Brigade Battle Captain and the Battle Captain for the Battalion that owns the ground in which a fire mission is being called. When called to clear ground, the Battalion Battle Captain simply verifies the front line traces of subordinate Companies with the Battalion FC and verifies the locations of Brigade assets inside his Battalion AO. He then replies to the Brigade Battle Captain with “clear” or “not clear.”

No matter how much the Field Artillery improves its proficiency in its core competencies on the gun line and in FDCs, it will not be able to provide timely fires in support of maneuver if Fire Supporters, on behalf of their maneuver commanders, cannot rapidly

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clear these fires. None of the tactics, techniques, or procedures (TTPs) described in this article are new. In fact, when BCTs habitually executed combined arms maneuver at our combat training centers (CTCs) in preparation for war, these TTPs were SOPs. These skills have simply eroded over the nearly 15 years of the Global War on Terrorism. Nor are any of these TTPs complicated or hard to learn. The Fire Support community simply needs to reinstate these practices as SOPs and integrate them into their training at home station and at the CTCs. With training and repetition in these simple techniques, the Field Artillery can reclaim its title as the King of Battle in the combined arms fight.

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