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Fires in the Close Fight *Volume II* (Focused Rotation - Observations)

Tactics, Techniques, and Procedures

Center for Army Lessons Learned (CALL)
U.S. Army Training and Doctrine Command (TRADOC)
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FOREWORD

This is the second newsletter of a two-volume set focused on improving the integration and synchronization of fires in the close fight. For several years, the U.S. Army Infantry School, U.S. Army Field Artillery School, and the Center for Army Lessons Learned have worked together to identify weaknesses in synchronizing fires and maneuver at the Combat Training Centers. More than just identifying issues, this product provides solutions in the form of tactics, techniques, and procedures to help units improve performance in focusing fires for the close fight.

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Fires in the Close Fight: JRTC and NTC 2003, Volume II

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Unless otherwise stated, whenever the masculine or feminine gender is used, both are intended.

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CHAPTER 1 - TRAINING

How to Develop the Best-Ever Fire Support System

by Lieutenant Colonel James Miller

Previously published in *Field Artillery*, September-October 2002

Hammer Three Zero, this is COLT [combat observation lasing team] Three zero. BRT [brigade reconnaissance troop] has identified 50 enemy vehicles moving north. Fire target group Hotel Three Mike, "At My Command," over.

Roger, Hotel Three Mike, "At My Command." Sky Hammer reports CAS [close air support] is on station; ACA [airspace coordination area] Mike is in effect.

COLT Three Zero, roger. Forward TACPs [tactical air control parties] already have eyes on the enemy formation, vicinity Whale Gap.

COLT Three Zero, Hammer Three Zero. Steel is ready on Hotel Three Mike; 36 rockets in effect.

Roger, fire Hotel Three Mike; we are clearing the CAS in hot, time now....

COLT Three Zero, Hammer Three Zero. It has been 10 minutes—status over?

Hammer Three Zero, roger. End of mission. Hotel Three Mike CAS is off station; target destroyed.

Request BDA [battle damage assessment], over.

Roger. There are too many dead vehicles to count right now—that's going to take awhile and I am little busy right now...besides, we got them all. Stand by to repeat on the second enemy battalion....

Our Combat Training Centers(CTCs) repeatedly have reported on the shortcomings of our fire support officers (FSOs) and their ability to provide close supporting fires for the maneuver commander. As fire supporters, this is not what we want. The scenario is representative of the occasional fire support success the Hammer 3d Brigade Combat Team (BCT), 3d Infantry Division (Mechanized), Fort Stewart, Georgia, had at the National Training Center (NTC), Fort Irwin, California, last summer. In this engagement, the brigade's fire support system destroyed 51 vehicles in the enemy's lead formation as it exited Whale Gap. More importantly, our success was the result of a dedicated BCT effort to ensure we had a well-trained fire support system, one capable of providing accurate, timely and deadly fire support to our maneuver forces.

How did we do it? Simply put, we decided we wanted it and put a determined effort into it. Of key importance, that decision was made by and fully supported by the brigade commander. In addition, the division artillery commander put the full weight of his support behind it as well. The Field Artillery School, Fort Sill, Oklahoma, provided additional support in the form of a fire support focused rotation at the NTC.

Basically there are five reasons we were so successful: command emphasis, experience of our fire support personnel, training, integration and our equipment.

Command Emphasis. This is absolutely the most important factor for fire support to work. Maneuver commanders who have not made their fire support system a priority have no one to blame but themselves when their fires fail them in battle.

Fire support coordinators (FSCOORDs) who allow this to happen are doomed to failure as well. Talk is not enough.

Everything falls into place if command emphasis is there. In the Hammer Brigade, the brigade commander made fire support one of his priorities. He demonstrated its importance by learning all he could about fire support, understanding the guidance he needed to give and focusing the staff on an integrated, combined arms approach to combat. He provided all the resources available to improve his fire support system and participated in the training.

The brigade FSCOORD added to this emphasis by setting his own priorities on fire support and dedicating limited resources, his best personnel and training time to build the fire support team. It all paid off with a fire support system that met the challenges of the NTC at an entry level that was well above the average rotational unit.

Experience of Fire Support Personnel. This is the second most important reason fire support systems are successful. We must put our most experienced, mature personnel in our fire support positions. The payoff is fire supporters who understand the system and use their experience to build success; their maneuver brothers will trust and respect them plus have confidence in them.

Our fire support element (FSE) was selected and manned in accordance with this principle, and it made a huge difference in our capabilities. Our brigade FSO was the senior major in the battalion and a previous battalion executive officer.

The assistant FSO was a new captain who had been with the battalion for three years and was selected because he had been the best lieutenant in the battalion. His selection came at great cost to the battalion as he was slated to be the battalion fire direction officer (FDO).

Our targeting officer was the senior warrant officer in the battalion and was selected for his excellence in fire support .The task force FSOs were all senior captains, prior battery commanders or had prior service experience that made them ideal fire supporters.

The task force targeting officers all were both former platoon leaders and company FSOs. One third of the company FSOs were former platoon leaders. Our COLT was an elite platoon manned by the best fire support sergeants in the battalion and lead by the lieutenant with the most successful and lengthy fire support experience in the battalion.

Finally, our air support operations squadron (ASOS) also provided support in the same manner. The air liaison officers (ALOs) and TACPs where manned by the best and most experienced airmen available. Most had more experience than the Army fire supporters, and many had been assigned as Ranger TACPs.

One last comment on this point: we knew we had the right people in the right jobs when we started getting reports of maneuver commanders letting their FSOs run their staffs when the field grade officers could not be present.

Training. We trained the fire support system as a system every chance we got. When we couldn't train the system, we trained the individuals and teams that make up the system. If there is command emphasis, there is no excuse for not training.

Too often, FSOs try to train their soldiers and their sections without support from the remainder of the fire support system or help from the senior leaders in the brigade. More often, headquarters battery taskings overwhelm our fire support platoons.

Routinely units ignore lessons learned and negative trend reports about the shortcomings of the fire support system and don't train to correct them. Finally, when units do have the opportunity to train the fire support system, they often let concerns about gunnery overcome the need to train fire supporters.

Training FSOs. Units must train FSOs at every level and train them to train their soldiers. Our school system does an adequate job of teaching our officers fire support, but it does not train them to the level of proficiency needed. Key areas in which FSOs need unit training are listed in Figure 1.

- **Triggers**
- **Maneuver Operations and Tactics**
- **Observer Planning and Observation**
- **Post (OP) Selection**
- **Leading and Directing the Integrated Targeting Process**
- **Use of Mr. SIDS and Terrabase for Targeting and OP Planning**
- **Recon and Surveillance (R+S) Planning**
- **Integration of Tactical Air Control Parties (TACPs) into R+S Plans**
- **Close Air Support (CAS) Planning and Employment**
- **Fire Support Planning**
- **Fire Support Execution**
- **Engagement Area (EA) Development**
- **Training in Units**

Figure 1: Key areas in Which Fire Support Officers (FSOs) Require Training

FSCOORDS must have a system in place to train and evaluate their FSOs at times other than large exercises or command post exercises (CPXs). Maneuver commanders must be convinced to do the same—integrate fire support into as much training as they can. Whenever possible, training should be hand on, in the field and evaluated.

Untrained and inexperienced FSOs will provide fire support that mirrors their shortcomings. We can't allow that.

Working Around Taskings. Taskings are an unfortunate reality in the Army. In direct support (DS) battalions, long term damage has been done to our fire support soldiers by repeatedly assigning them taskings. This dulls their fighting edge, limits their chances for training and severely curtails their retention.

Unfortunately, this is a difficult nut to crack. One technique that worked for us was to establish a Red-Amber-Green Cycle of training within our fire support platoons. That system allowed the task force FSEs to train as a whole (usually with their supported task force) while the Red Cycle task force fire supporters took the taskings.

The brigade FSCOORD further emphasized the importance of fire support training when he added the requirement for the headquarters and headquarters battery (HHB) commander to task the brigade FSO for support. That allowed the FSO to select the soldiers who would have the least impact on training and allow the fire support training plan to continue.

Training to Reverse Negative Trends. We, as an Army, record lessons learned and negative trends to develop training and improve our teams. Sadly, too often we don't carry through with a concerted effort in training on lessons learned.

Observer/controllers (O/Cs) at the CTCs joke that they can write the after-action reviews (AARs) before the unit begins its rotation. The O/Cs' experiences shows that units come to the CTCs doing the same things wrong.

In our brigade, we used our last NTC AAR and the Center for Army Lessons Learned (CALL) lessons as our starting point for developing brigade fire support training. By the time we went to the NTC again, we were not making the same old mistakes.

Training the Entire System. Every training event is a chance to train the fire support system; there are really no good excuses for not training the entire system.

Unfortunately, units usually use a list of fire mission types to drive FA gunnery exercises and simply fire the missions in the order listed. In this type of an exercise, no one gets trained but the fire direction centers (FDCs), a few observers and the gun crews—it is not the way we'll fight.

A fire support plan and a scenario that replicates the battalion's normal missions in support of its maneuver unit should provide "the drivers" for a Field Artillery battalion gunnery exercise. The FSOs should submit a plan for the artillery battalion to support and control the timing and triggering of the missions in accordance with the maneuver plan they support. Although this type of exercise takes more effort to prepare, it's well worth it and trains the fire support system as a whole.

Maneuver gunnery exercises should be supported by the FSE in the same way, and whenever possible, the FA battalion should use its supported brigade's gunnery exercises to train part or all of the fire support system. The more training for the fire support system, the more reliable it will be in combat.

Integration. Fire supporters must ask themselves, "How well integrated is my fire support system?" Fire support is an integrative process. As such, we must completely integrate our fire supporters into their maneuver units and encourage our maneuver brothers to join our fire support training.

In addition, we must integrate our supporting BRT and airmen into our teams long before we go to CTCs or into combat. We must develop integrated staffs to produce the synchronization that allows our fire support system to be successful.

Early integration and a team approach to fire support is the key to success. A well-integrated fire support team allows everyone to understand his role in the process, train to support that role and gain confidence in and understand the strengths and weaknesses of his teammates. Figure 2 lists opportunities we took to integrate as a team.

- **Staff Exercises**
- **Staff Meetings**
- **Training Meetings**
- **Live Fire Exercises (LFXs)**
- **Gunnery Exercises**
- **Command Post Exercises (CPXs)**
- **Hail and Farewells**
- **Unit Organizational Days**
- **Saint Barbara's Day**
- **Sports Events**

Figure 2: Opportunities to Integrate Fire Support and Maneuver or Build Fire Support Maneuver Teams

In most cases, I have found that this integration must be forced—it does not happen on its own. But once forced, it becomes the accepted way of doing business; it takes on a life of its own and success begins to breed more success.

The trick is to force the entire team to train and work together at every possible opportunity. It will pay off on the battlefield. In the end, if your fire support team, maneuver staffs and airmen are all voluntarily attending each other's hail and farewells, promotions and ceremonies, you have done well in integrating your fire support team.

Equipment. The Army has given us a lot of equipment to support our fire support mission. Much of it is old and weary, and we clearly need new systems in a hurry. Despite that, our equipment will perform its mission, given the proper emphasis on maintaining it and training your soldiers to maximize it. Soldiers must understand the limitations and capabilities of their systems and how to employ them. Waiting for the “new stuff” to come out is not an acceptable solution.

The new equipment being fielded is top-notch. The M7 Bradley FIST (BFIST), in particular, is a great and much needed advancement in fire support equipment. (The A3BFIST will be fielded in FY04.)

But I add a warning—if we continue the maintenance practices used on the fire support team vehicle (FISTV), the M7 BFIST will fall rapidly by the wayside as well. FISTs cannot be successful with poorly maintained equipment. Maintenance must be routine and a training and maintenance priority for the FSCOORD.

Finally, fire supporters must be trained to employ their systems on the battlefield. Even the new BFIST was worthless to us when the crews maneuvered in the open and did not use cover and concealment, getting themselves killed early in the fight. Our equipment is only as good as our training to employ it.

Your fire support system can be the best-ever. The solution starts at the top with the leaders. “Confident, audacious and competent leadership focuses the other elements of combat power and serves as the catalyst that creates conditions for success.” (*FM 3-0 Operations*)

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Personnel Turbulence and Fires in the Close Fight: How Can We Fix It?

by Major Michael Forsyth

At a recent Joint Readiness Training Center (JRTC) fire support focused rotation, a Combat Assessment Training Team (CAAT) for the Center for Army Lessons Learned (CALL) gathered information concerning the negative trends impacting the use of fires in the close fight. One of the many factors contributing to this trend is personnel turbulence. At the heart of the issue is the fact that many fire supporters fill duty positions for a short period of time and, therefore, never gain adequate experience. Also, the rank of fire supporters filling positions is one to two pay grades below that specified by the modified table of organization and equipment (MTOE). This is an especially pronounced problem at the lower skill levels of fire support, the forward observers (FO) and fire support non-commissioned officers (FSNCO). As a result, there is a noticeable lack of proficiency at skill levels one and two that contributes to an inability to bring fires to bear in the close fight. This article will discuss these issues and propose potential solutions that can reverse the trend, fires in the close fight.

CAAT Survey

In order to fully understand the issue, the CAAT conducted a survey of the fire supporters in a rotational unit typical of any in the field artillery and asked the following questions:

1. How long have you filled your current duty position as a fire supporter with your maneuver unit?
2. How many combined arms training exercises have you participated in with your maneuver unit?
3. How long has the crew (the FO team or fire support team (FIST) headquarters) been together as a crew?

The survey population included all the fire supporters in both maneuver battalion task forces in 13F military occupational specialty (MOS) skill levels one, two, and three.

Survey Results

1. The average time assigned to a maneuver unit in the current duty position was seven (7) months.
2. The number of training exercises with the maneuver unit was two (2).
3. The average amount of time the crew has served together was five (5) months.

In addition, over 50% of the personnel questioned held duty positions one to two pay grades above their rank. This was especially true of the FO teams where specialists and privates first class filled most FO positions that by MTOE is a sergeant's job. These young soldiers, although highly motivated, are generally overwhelmed by the stressful situations encountered during a close contact at JRTC. There are several reasons contributing to this:

1. Soldiers are trained to perform skill level one tasks, yet many find themselves placed in a skill level two FO duty position. This factor, combined with fewer opportunities to train with their maneuver counterparts, contributes to a proportional loss of experience as these soldiers move up the ranks as fire supporters.

2. These junior soldiers are losing the confidence of their maneuver leaders at the company and battalion level because of their inexperience. Faster promotion rates make it difficult to season new leaders adequately before they move up, and as a result fire support field craft does not get passed down to the next generation of observers.
3. Increasingly, sergeants are filling the company FSNCO position that is a staff sergeant position by MTOE. As the senior NCO trainer of the company FIST, the FSNCO is inadequately prepared to train his FO teams and additionally, finds himself overmatched in the responsibility of training new company FSOs. The end result of such turbulence is diminished skills at all levels contributing to the infrequent use of fires in the close fight.

What Makes a Good Forward Observer?

The CAAT team identified the FO on the JRTC battlefield that modeled the qualities of a good forward observer and determined what factors contributed to this FO's outstanding performance. The model FO during this rotation used indirect fires in all his platoon's contacts, used a standard FO-PLGR (Precision Lightweight GPS Receiver) battle drill to enable him to get fires into the fight quickly, and had 40% of the successful fire missions--achieving effects on target--during the low-intensity phase of the rotation. Why was he more successful than his counterparts?

First, he had the experience and appropriate rank in his duty position. He had been the FO for his platoon for almost two years. Secondly, this FO had participated in over ten combined arms exercises over that time period. Finally, he knew and had confidence in his ability to use the battle drill required to place indirect fires into the fight quickly. His confidence as the FO contributed to greater team cohesion. This fire supporter successfully integrated fires into close combat and these fires accounted for almost half of the battle damage inflicted on the battlefield in the low-intensity phase. So how can the fire support community achieve this success throughout the population?

How Can We Fix This?

Based on conversations with the commander of operations group, the senior brigade trainer, senior fire support observer/controller (O©), and numerous fire support officer and non-commissioned officer (NCO) O/Cs at the training center and observations from the field, the CAAT team identified four ways to mitigate personnel turbulence and take a step forward in reversing the trend, fires in the close fight. The solution involves action by several different proponents including the Field Artillery (FA) School, FA units, and our Personnel Management System.

The FA School and the NCO Academy must consider revamping the current program of instruction (POI) at each NCO education school level to better prepare soldiers and leaders to assume their roles in units. Collectively, the fire support community should reconsider what skills constitute the requirement for a Skill Level 1 13F soldier. The school must address the problem of junior soldiers walking right into Skill Level 2 positions. For example, Skill Level 1 training at Advanced Individual Training (AIT) should add basic FO battle drills such as the PLGR battle drill and observation post selection. The training should occur in a field environment and place the soldiers in a situational lane to reinforce classroom presentations.

The Basic NCO Course (BNCOC) and Advanced NCO Course (ANCOC) must also retool for much the same reasons. BNCOC must address situations encountered in combat operations in a similar setting to the one suggested above for AIT. In addition, leaders must learn to train their FO teams in battle drills, basic fire planning, and the intricacies of setting up and resourcing the

training plan. ANCOC should emphasize the FSNCO's role in the military decision-making process (MDMP). Currently, the only course that provides senior NCOs with a detailed study of the MDMP and staff NCO roles is the Battle Staff Course at Fort Bliss, and the ANCOC provides little more than a brief overview of the process. The battalion FSNCO is a key player in fire support planning at the task force level and the current POI should be changed to better prepare these soldiers to accomplish their mission..

To reinforce skills at all levels bring respective classes together for a culminating exercise. ANCOC (battalion FSNCOs) students would plan an operation, BNCOC (company FSNCOs) would conduct troop-leading procedures to execute the plan, and the AIT (FOs) students under the supervision of "their" FSNCOs would execute the plan using a situational lane.

The field artillery units need to certify fire support crews from battalion fire support element (FSE) to the FO team and then ensure that the certified teams stay together. Many units already have a fire support certification program; however, fire support personnel are often not managed in the same way as an infantry unit manages a Bradley crew (i.e. Bradley commander and gunner) or an aviation unit manages an aircraft crew. Once the unit certifies fire support crews (consisting of FSEs, FIST headquarters, and FO teams) it should ensure the personnel comprising the crew stay together as long as possible. Shuffling personnel minimizes the positive effect of going through FIST certification and makes it difficult to achieve crew cohesion internally or with the maneuver unit.

Finally, personnel managers at Department of the Army level can help units by stabilizing fire support personnel, particularly the Skill Level 1 and 2 soldiers, at their duty stations for a minimum of four years,. This will enable units to build cohesion by stabilizing soldiers in positions and crews. The longer the crew trains together the better they understand the unit SOP and the implementation of those procedures over time.

Conclusion

Although tough challenges exist with respect to getting fires into the close fight, we can solve the problem. Part of the solution is to change the way that we train fire supporters in our schools, manage them in the FA units, and stabilize them at home station. Our Skill Level 1-4 fire supporters are our credentials in the FA community and in order to retain our credibility we must invest in them. Such an approach will take time to implement but the payoff in the future is worth the effort.

CHAPTER 2 - FIRE SUPPORT PLANNING

Maneuver Commander's Guidance for Fire Support -- What We Really Need

by Lieutenant Colonel William S. Rabena

Previously published in *Field Artillery*, September-October 2002

Is it really fair to continue to tell our maneuver commanders that fires aren't right because the guidance they provide us is unsatisfactory? Granted, the maneuver commander is responsible for his fires. However, it's time for us to take a hard look in the mirror before pointing fingers at maneuver and ask ourselves, "What can we do to make it easier on the commander?"

The "broken record" guidance trend briefed throughout the Army may be true for some, but it should be put on "sabbatical leave" until we, as fire supporters, clean up our publications, field manuals and white papers. Our white paper "Fire Support Planning for Brigade and Below," dated 1998, is as close to getting it right as I have seen. It links essential fire support tasks (EFSTs) to proper Task terminology (of the EFST Task, Purpose, Method and Effects) and makes it easier for the commander to convey guidance to us.

However, for the most part, we have not been clear about what we need from the maneuver commander and have provided conflicting versions of what we need. The fire support community is making valiant efforts to fix the manuals discussed in this article, and some of the revisions look promising for fire support guidance, but our current arsenal of publications is unsatisfactory.

Publications on Commander's Guidance. The old *FM 71-123 Tactics and Techniques and Procedures [TTP] for Combined Arms Heavy Forces: Armored Brigade, Battalion Task Force and Company Team* had nothing in it about guidance for fire support. Its replacement, the *FM 3-90 Tactics* followed suit. That's easy to fix. Once we determine the best method for conveying guidance to us, we can get the Combined Arms Command (CAC) at Fort Leavenworth, Kansas, and the branch schools to insert it in their manuals as part of the planning process. Our combined arms brothers will welcome the addition.

Next is the FM 6-20 series. *FM 6-20-40 TTP for Fire Support for Brigade Operations* is representative. The brief discussion on Page 2-3 puts more effort into addressing the guidance from the higher fire support cell than it does the construct of the maneuver commander's guidance. Hopefully, our maneuver commanders are not reading this page, or we might receive something patterned in the form listed on Page 2-3. It states, "As a minimum, this guidance should include the following: fire support asset allocation and status, commander's target attack guidance, and fires in the zone planned by higher headquarters." Surely we can do better.

The *FM 101-5 Staff Organization and Operations*, Appendix B-1 "Commander's Guidance Guidelines," provides a list of what fire supporters need that would burden a maneuver commander if he provided guidance on most of it. To a great extent, it makes a staff officer out of the commander. To its credit, the appendix begins with the disclaimer that none of the items are mandatory and commanders should tailor the list to their needs. The problem is that the most important item on the list, Item Six "Task and Purpose of Fires," is buried in the list with no special emphasis or suggestions as to how to convey it.

The old *FM 6-71 TTP For Fire Support for the Combined Arms Commander* (Pages 3-5 through 3-6) probably does the most to confuse maneuver commanders. FM 6-71 is not all bad and the

next version, FM 3-09.31 of the same name, looks promising with not much further to go before it could be used as a stand-alone tool for maneuver commander's guidance.

With that said, the current FM 6-71's engagement criteria advice to the commander to tell fire supporters the "size and type of units he wants engaged at different points in the battle and priorities for target engagement" is sound. However, it misses the mark with attack criteria and the portion specifying how, when and where to attack. It lists "destroy, neutralize or suppress" as the attack criteria and then cautions that FA terms may not mean what the maneuver commander thinks the terms mean. Haven't we confused maneuver commanders enough with this tiring destroy-neutralize-suppress mind bender?

FM 6-71's replacement, while a marked improvement, still falls short of providing a user-friendly format for commander's guidance. The improvement is that it tells commanders to word their guidance for fires in a "Task and Purpose" format. It states, "Consider stating the task as an effect on the enemy formation [per *FM 6-20-10 TTP for the Targeting Process, FM 3-09 Doctrine for Fire Support* (final draft), *FM 3-100.40 Environmental Considerations in Military Operation* and *FM 3-13 Information Operations*] (a specific element or sub-element of the enemy) that provides the enemy a function."

The downfall of this section is two-fold. First, it also provides a laundry list of other items that should go in the guidance, which clouds the guidance and becomes staff work. Second, but more important, is that rather than list the Task terms with user-friendly definition, we refer our commanders to four other manuals.

Three of the four manuals lead our maneuver commanders down the ambiguous path of which terms are proper. Only FM 6-20-10 makes it abundantly clear that "disrupt, delay, limit, divert, and damage" (disrupt, delay and limit are usually the most appropriate) are the proper Task terms when addressing the effects on enemy formations' functions.

The manual goes on to tell commanders not to use or confuse "suppress, neutralize and destroy" with the proper terms when referring to enemy formations. "These terms are used as attack criteria to determine the degree of damage or duration of effects on a *specific* target." [Emphasis added.] In other words, the targeting team will determine which individual targets need to be destroyed, neutralized or suppressed in order to achieve the commander's guidance of disrupt, delay or limit for enemy function.

In its discussion of EFSTs and commander's guidance, the white paper "Fire Support Planning for Brigade and Below," poses a better way of verbalizing Task terminology. It says the commander should use "disrupt, delay or limit" in the Task portion of the Task ,Purpose, Method and Effects parts of the EFST. These Task terms, in conjunction with the commander's Purpose, lay the maneuver groundwork. The design for the commander's guidance has been in front of us all along—just not in writing other than in the white paper.

The Guidance Design. The Task and Purpose design of the guidance have some underlying assumptions.

First, the maneuver commander should not have to do staff work. He shouldn't have to tell the staff which delivery system to use. The staff should do this for him in the course-of-action (COA) development phase of the military decision-making process (MDMP). The Method portion of the EFST also details the delivery systems during this phase.

Of course, some commanders may want to direct their assets; this is their prerogative. But the point is that commanders shouldn't feel compelled to do it.

Next, we need to maximize the commander's guidance with maneuver terms. This means his guidance should be effects-based but defined in maneuver-based effects. The commander does this in two ways. First, he uses Task terminology that is maneuver-based: "disrupt, delay or limit" to apply to an enemy formation's ability to perform its functions and subsequently, to alter the enemy's COA.(See Figure 1.)

Disrupt: Preclude the efficient interaction of enemy combat or combat support systems. More important, it means to keep the enemy formation from performing a certain function; not let it do what it's supposed to do.

Delay: Alter the time of arrival of a specific enemy formation or capability. It focuses on keeping the enemy from doing some function when he wants/needs to.

Limit: Reduce an enemy's options or courses-of-actions. It normally focuses on keeping the enemy from doing some function where he wants to.

Figure 1: Tasks in Commander's Guidance. FM 6-20-10 TTP for the Targeting Process also includes "divert" and "damage," but "disrupt, delay or limit" are more appropriate

Second, he conveys a well-defined maneuver Purpose (wordy is Okay).The staff uses his Purpose to determine the Effects (end state). In other words, the more vivid the Purpose, the easier it is for the staff to determine "how many of what needs to be destroyed, neutralized, or suppressed" to meet the guidance. This then drives the Method of how fire support (lethal and nonlethal)fulfills the Task and Purpose.

The commander must not feel hamstrung by trying to word the maneuver Purpose to describe how the Effects contribute to the mission only in terms of friendly maneuver . He should convey the Purpose in terms that will be easiest to see during execution. Sometimes this is best conveyed in terms of friendly forces; other times it is best conveyed in terms of the enemy.

Limiting Purpose to one or the other often has left maneuver commanders tongue-tied for meaningful words. The result is the ever-popular yet meaning-less "...to facilitate maneuver" Purpose.

A clear maneuver Purpose is invaluable. During execution of the battle, validating the Purpose was met is easier to do and a better measure of whether or not the EFST was accomplished than validating the Effects were achieved.

In summary, we need the commander's guidance format to be Task and Purpose. The Task terminology should be "disrupt, delay or limit." In the Task, we need to know the formations/functions the commander wants attacked and where the attack is to occur. The "where" helps the staff pick the right attack asset. In addition, we need a well-defined maneuver Purpose. And this is all we need in the commander's guidance.

During mission analysis, additional items (as tailored to a unit's standing operating procedures, or SOP) are the commander's approving the high-pay-off target list (HPTL) and force protection priorities.

Examples of Maneuver Commander Guidance. The following are examples of the maneuver commander's guidance (Task and Purpose)

- *Commander's Guidance in the Defense in Terms of the Enemy.* The brigade commander realizes the enemy regimental forward detachment (RFD) is a lynchpin for the regiment. He knows that while the RFD is terrain-oriented, the regimental commander's Task and Purpose of having it establish a breach for the main body battalions warrants special attention. If the friendly maneuver commander can take away the RFD's ability to breach, the enemy will lose momentum and the regimental commander could be forced to employ a main body battalion to assume the breach mission, hope the enveloping detachment can breach or look for bypasses.

Part of the friendly maneuver commander's guidance could sound like this: "I want to disrupt the RFD west of the passes, in the passes and east of the passes in order to deny it the ability to establish a breach for the main body battalions in EA Bronco and to force the regimental commander to use his main body battalions to establish their own POP [point of penetration]."

This guidance does a lot for the staff. Priority intelligence requirements (PIRs) can be developed to ensure the brigade can attack the RFD early and throughout the battlespace until the RFD culminates. Analysis can be done to keep fires focused on the RFD rather than some other formation. The "where" (west of the passes, in the passes and in EA Bronco) probably points the staff in the direction of employing CAS early, rockets and cannons in the passes, and cannons in EA Bronco.

This maneuver Purpose tells enough for the Brigade S2 to determine how much of what needs to be destroyed to satisfy the commander's guidance (the EFST's Effects). In this example, the commander wants to ensure the RFD cannot breach for the main body battalions. The S2's estimates will drive which delivery systems to use and the number of volleys they will have to deliver.

A residual benefit of a well-defined maneuver Purpose is that, during execution, it is easier to see if it was achieved than to determine if the battle damage assessment (BDA) had the Effects the S2 estimated would achieve the commander's intent. The S2's estimate is just that: an estimate. If he is wrong and we achieve those incorrect Effects, we could begin transitioning to the next EFST before we should. If we use the commander's Purpose as the measure of success, then we won't transition to the next EFST until we see we have achieved that Purpose.

At this point, perhaps some maneuver readers are questioning why we even need to know Effects expressed in terms of systems/personnel affected. The reason is we still have to line up the right delivery system(s) and plan for the right number of volleys and range to achieve the desired Effects—which are calculated to accomplish the commander's Purpose.

In the majority of cases, the true measure of whether or not we have met the commander's guidance (and can end an EFST) will be if we accomplished the maneuver Purpose—not whether or not we achieved the Effects defined in terms of number of items destroyed. The commander on the ground is often the best judge of whether or not the enemy formation/function has culminated (Purpose in terms of enemy maneuver forces) or whether or not he is postured in accordance with the friendly maneuver Purpose (a Purpose in terms of friendly forces).

- *Commander's Guidance in the Offense in Terms of Friendly Forces.* In a movement-to-contact, the brigade commander recognizes that while the enemy forward security element is force-oriented, the enemy commander wants it to operate on advantageous terrain. An L-shaped ambush joined by the enemy's advanced guard main body (AGMB) on terrain the forward security element chooses would set the conditions for the regiment's success. The friendly maneuver commander recognizes that by delaying the forward security element with fires, his brigade could deny the regiment the key terrain and establish contact on its own terms.

His guidance would sound something like this: “I want to delay the forward security element 20 minutes west of TIR [Terrain Index Reference] 40 in order to allow the advanced guard company of our lead task force to reach the key terrain vicinity TIR 41 first.”

The commander’s guidance provides the staff everything it needs for this formation. In addition, because the maneuver Purpose is so well-defined, it will be clear during execution that once the advanced guard company of the lead task force reaches TIR 41 first, the staff can start implementing the maneuver commander’s guidance for the next formation/function.

- *Commander’s Guidance in the Defense Using the Task Term “Limit.”* The two previous examples of Commander’s Guidance used the Task terms “disrupt” and “delay.” “Limit” is another powerful Task term that is often appropriate yet sometimes confuses staffs and leaders.

A commander who uses “limit” correctly knows exactly what he wants. He is not saying he wants to keep a certain formation from ever performing its Task and Purpose. To accomplish that can be resource-intensive. “Limit” translates into “I don’t want this enemy formation to perform its Task and Purpose where he wants to.” Better yet, “I don’t want the enemy to do it where I don’t want him to do it.”

In the defense, here is an example of the commander’s guidance using “limit.” The friendly maneuver commander expects to see an airlifted light infantry company with AT-5s enter his battlespace with the task of fixing/defeating a mechanized or armor company. He does not want this light infantry to emplace the AT-5s on a particular piece of high ground that overlooks the EA where the brigade commander wants to defeat the main body battalions. He recognizes that while, ultimately, he does not want the light infantry to be able to perform its Task and Purpose anywhere, he absolutely cannot accept giving away the high ground. Doing so could result in the AT-5s targeting one of his companies in the battle position (BP) that defends EA Wrangler—a BP that defends along an anchor point in the brigade obstacle. With that company ineffective, the RFD could breach almost unopposed.

An example of the commander’s guidance would be: “I want to limit effective light infantry AT-5 fires from the high ground vicinity A in order to keep the company in BP B intact to deny a breach and remain at 90 percent combat power.”

The “where” portion of commander’s guidance is somewhat taken care of with the term “limit,” but the commander should emphasize that he expects the staff to develop a plan that attacks the enemy as soon as identified.

With this guidance, focused PIRs and a portion of the observer plan will be dedicated to finding the light infantry in the air. Sentinel radars could provide early warning for air defense artillery (ADA) to attack first. Targeted, templated landing zones could be assigned to a combat observation lasing team (COLT)/Striker or task force observers, and fires (direct and indirect) could be focused on limiting the light infantry’s ability to get AT-5s into position. This could mean the brigade either destroys the AT-5s or forces the light infantry to occupy somewhere else that does not concern the commander—achieving the conditions under the term “limit.”

- *Commander’s Guidance in Counterfire in the Offense Using the Task Term “Limit.”* “Limit” is also the most viable term to use when a commander wants to focus his counterfire fight. Most often, commander’s guidance and EFSTs addressing the counterfire fight are worded incorrectly. They usually are conveyed as “...neutralizing the RAG [regimental artillery group].” Once again, we use attack guidance for a specific target instead of a correct Task term geared at affecting a formation’s function. Of course, the commander wants to win the counterfire fight and would be happy if it occurred before he crossed the line of departure in an attack. But short

of an incredibly effective proactive counterfire effort, that probably won't occur. The commander expects us to wage and win the counterfire fight; telling us that is unnecessary. However, in his guidance, he can express where he will not accept losses to enemy indirect fire. "Limit" is the term to use.

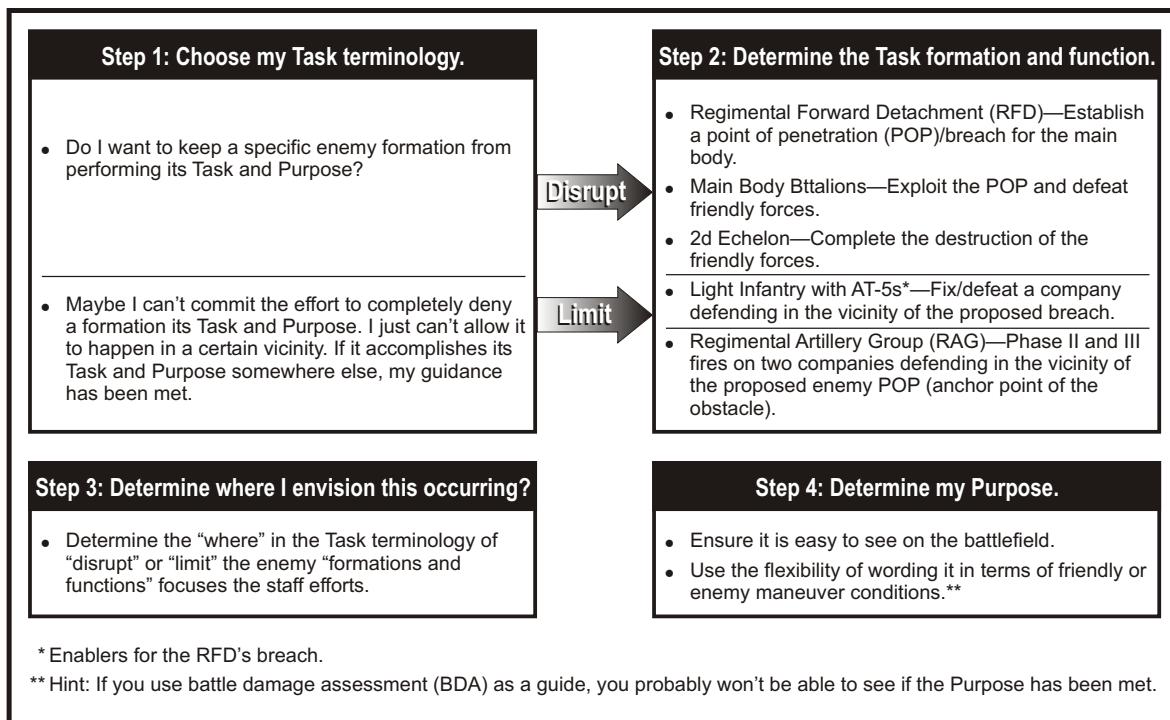


Figure 2

In the attack, he could say: "Limit effective enemy artillery and mortar fire against the support force when it occupies SBF1 [support-by-fire position 1] and the breach force in order to sustain the momentum at the breach site and keep the support force at 90 percent when the assault force passes through the lanes."

In this example, the commander expects enemy artillery fire in many places before his force defeats it but wants it stopped immediately on his breach force and support force. Notice that the crucial difference between "limit" and "disrupt" is that in the "limit" examples, we only take away the enemy's ability to perform its Task and Purpose at a specific location or event of the maneuver commander's choosing. "Disrupt" denies a particular formation the ability to achieve its Task and Purpose and may mean culminating the formation at all costs. Sometimes "disrupt" is necessary.

The commander who can visualize the difference and uses the two properly will be the commander who will better focus his fires. (See Figure 2.)

The Fixes. We need to establish one method for the maneuver commander to convey his guidance in our publications. The format of Task with a well-defined maneuver Purpose should be ingrained in our maneuver commanders as the proper method to use.

Concurrently, fire supporters should talk their commanders through maneuver-based Task terminology, as outlined in the FM 6-20-10 and the white paper. Using these terms is more powerful—they have a universal meaning. Maneuver commanders should feel more comfortable wielding them.

Third, as fire supporters, we should use the commander's Task and Purpose as the EFST's Task and Purpose. What I have done is work the white paper's method of developing EFST backwards to link it to the part it scantily addresses the commander's guidance.

Fourth, the brigade S2 should add translating the maneuver commander's Purpose into Effects as a step in the early stage of COA development. He determines the number and types of systems within that formation/function that need to be "destroyed, neutralized or suppressed." After all, brigade S2s are the experts we rely on during wargaming in the action/reaction/counteraction drill to assess casualties after an event (usually with the brigade executive officer). When the S2s add the step, the system will work and commanders' guidance will be more meaningful and congruent across all brigades—getting maneuver commanders out of the business of guessing what fire supporters need.

Let's allow maneuver commanders to give guidance in maneuver terms and staffs to do their jobs and put the mystery of commanders' guidance for fires to rest.

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COLT Employment in Light Divisions

**by Staff Sergeant Jason A. Johnson and
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Historically, units have problems effectively employing combat observation lasing teams (COLTs) at home station. That trend is even more apparent at the Joint Readiness Training Center (JRTC) where units overlook using COLTs during the low intensity conflict (LIC) phase and restrictive terrain of Fort Polk. There are two basic problems generating that trend. The first problem is that light COLTs are not properly trained on realistic missions they may face in combat or at JRTC. The second problem is that brigade staffs and brigade fire support officers (FSOs) do not provide a clear task and purpose to the COLT. This leads to poor planning and mission execution. Developing a realistic mission essential task list (METL) and training to it will dramatically improve COLT employment in light units.

METL Development.

Fire support coordinators (FSCOORDs) and their brigade commander should define the tasks for the COLT. It must be feasible to resource all tasks with assets, money, and time if they are to be acceptable METL tasks. They must also fit under the brigade's METL and offer realistic expectations of team survival. The old primary mission of the COLT was lasing for Copperhead munitions. That is outdated and is not viable in restrictive or urban terrain. COLTs are best viewed as highly mobile observation teams with capabilities beyond those of the light infantry company forward observer. The following is a partial list of possible employment techniques or METL tasks that COLT teams can accomplish. Many of these tasks are combined or executed simultaneously.

Employment Options

There are two primary missions for the COLT. The foremost is calling for conventional or rocket fires. The greatest difficulty with this task is executing triggers. Brigade fire support officers (FSOs) and COLTs do not know where to position themselves. They may be positioned beyond an engagement area to confirm an enemy course of action and then trigger a targeted area of interest based on the enemy's rate of movement. Executing a 155mm family of scatterable mines (FASCAM) mission is another challenge. This is a key mission for the defense for denying a counterattack route during the offense. Battalion fire direction centers (FDCs) rarely articulate to the brigade fire support officer what the safety footprint will look like because the FASCAM target is not solidified until the last minute. This in turn places the COLT at risk. COLTs generally do not understand how to adjust the minefield and how to use spotting charges. COLTs can also refine targets. The team can confirm or deny enemy location and disposition, update targets, and provide eyes on target for execution.

The other primary mission is providing laser designation for smart munitions. Inserted COLTs can control attack helos or close air support using laser or infrared technology. This mission executed as a deep or close operation can significantly impact on the success of the brigade combat team. However, this is so rarely practiced that terminal guidance operations (TGO) is virtually a nonexistent skill for light COLTs. Rarely do teams task organize themselves with enlisted terminal attack controllers (ETACs) to execute TGO or laser target handoff with close air support (CAS). The same trend holds true with attack helicopters.

There are a number of secondary missions available for the COLTs. They can be integrated into brigade or battalion recon and surveillance teams. Mounted or dismounted, the COLTs can overwatch a named area of interest (NAI)/target area of interest (TAI). COLTs attached to Delta companies act as company fire support elements (FSEs) in providing fire planning, coordination

and execution. The COLTs attached to battalion task forces (TFs) can observe brigade targets. COLTs can overwatch key obstacles, objectives, or engagement areas. They can serve with the heavy team for route clearance (suppress, obscure, secure, reduce). COLTs can augment assets such as the unmanned aerial vehicle (UAV) to provide rapid sensor to shooter connectivity. Finally the COLT can be attached to the brigade quick reaction force to execute critical calls for fire.

Planning

It should be apparent that there are any numbers of missions that COLTs can perform for the brigade, if the brigade is willing to plan for them. And therein lies the rub. During any operation the brigade staff must produce a plan for the COLT that is supportable, survivable, and provides the ability to communicate with the brigade operations center. All too often COLTs are deemed “too hard to plan for” and then handed down to a battalion task force for execution. They are rarely given a task and purpose that meshes with the brigade plan. To have an impact on the brigade fight, COLTs must be individually wargamed and synched at the brigade level.

Training

In the end, COLTs are only as good as the training they receive. At a minimum, COLTs must possess the skills to operate either in the dismounted or mounted mode. Schools such as the Long Range Surveillance Course or Scout Platoon Leaders Course should be made available to the COLT to develop the field craft required. If these schools are not available then alternate training methods should be addressed such as training with the scout and Delta company of each battalion task force. Lane training and fire coordination exercises provide great benefit and familiarity on standing operating procedures (SOPs) and interoperability. COLTs should also be considered when executing scout or Delta company external evaluations (EXEVALS).

Many times fielding three two-man teams dismounted does not provide the desired results at the JRTC. They are simply not capable of meeting the challenges. Fielding two three-man teams provides greater security, mobility, and operational success. Attaching an ETAC as the fourth member makes the best configuration. The team can handle both air and ground operations and the ETAC and COLT can work out SOPs and tactics, techniques, and procedures (TTP) prior to execution in combat.

Summary

By executing its fire support and reconnaissance tasks simultaneously, the COLT can become an invaluable asset to our light forces in all types of operations and terrain. Nevertheless, units must establish clearly defined mission essential tasks that are achievable. That METL should account for the soldiers’ abilities, provide proper training, and resource the teams to meet the commander’s intent.

A Guide for the Aviation Battalion Fire Support Officer (FSO)

by Sergeant First Class Arlin D. Stigall, Fire Support Division, Operations Group, JRTC

Insufficient detail in the current doctrine for aviation fire support officers (FSOs) hampers integration of aviation assets into the close fight. Though this problem affects almost all aviation FSO functions, the most serious gap centers on key leader roles in synchronizing Army aviation with ground maneuver forces and indirect fires. Specific tactics, techniques, and procedures (TTPs) for executing these complex missions are almost nonexistent.

Consider that one of the most common problems facing aviation units is obtaining current brigade and battalion graphics, a basic planning fundamental. Like all other battlefield operating systems (BOS), aviation needs artillery locations; gun target lines, mortar locations, and close air support (CAS) control measures; or a concept of support for ground maneuver operations. Otherwise, pilots end up flying without even rudimentary situational awareness of the area of operation. This compounds the difficulties of synchronization, leading to aborted missions, missions that do not support the scheme of maneuver, and dead aviators.

Aviation FSOs cannot sit back and wait for guidelines to arrive engraved on stone. The aviation FSO must research all applicable doctrine that clarifies duties, responsibilities, and offer TTPs for their execution. FSOs must develop standing operating procedures (SOPs) to cover the spectrum of missions they may face. This SOP should focus on integration of aviation into all aspects of the operation, emphasizing maneuver, fire support, and Army airspace command and control (A^2C^2). Some of the key areas that should be addressed in this SOP are:

- Duties and responsibilities of key leaders in planning the integration of aviation assets with ground maneuver forces and indirect fires
- Planning the use of aviation throughout the brigade combat team's area of operation and dissemination of the information to the lowest user
- Communications links from aviation assets to fire support platforms
- Ensuring consolidated graphics, plans, and tools are pushed in a timely manner to the aviation tactical operations center (TOC)
- Preflight briefings
- Clearance of fires for aviation assets
- Post flight debriefings.

Duties and Responsibilities of Key Leaders

The first key area describes the role each key leader plays in the safe and successful integration of the aviation assets. The following is a list of some of the players and a brief explanation of their responsibilities.

- Brigade combat team (BCT) commander and staff are responsible for the entire area of operation (AO) and the development of the concept of the operation. Supporting tasks are directed to the aviation battalions.

- Aviation commander and staff coordinate with the controlling units and establish the supporting tactical plan. An exception is made during a joint air attack team (JAAT) engagement, when the air mission commander (AMC) is responsible for the tactical plan.
- Aviation FSO is responsible for briefing pilots on expected fire support tasks from current orders/fragmentary orders (FRAGOs). He is also responsible for receiving fire support products from the area of operations ground FSO. These products are used to brief pilots in the air mission brief (AMB) or preflight briefing. He may also develop kneeboard size products for pilots.
- Air mission commander (AMC) executes the operations and controls the JAAT engagement.
- Area of operation (AO) ground maneuver and his staff request and integrate fires through the maneuver FSO. The AO ground maneuver commander determines when to employ a JAAT. AO ground FSO is responsible for developing and executing the fire support plan in conjunction with the aviation FSO and pilots.
- Aviation liaison team is responsible for helping brigade integration of aviation assets into the ground concept of the operation. They must ensure there are sufficient Army air space command and control (A^2C^2) measures implemented throughout brigade.

Planning the Use of Aviation Assets Within the Brigade Combat Team (BCT) Area of Operations

Once the aviation staff receives the mission they use the same military decision-making process (MDMP) as any maneuver battalion staff with a focus on the supported maneuver force. It is essential that the aviation unit clearly understand the tasks required to successfully plan support for the ground maneuver commander. The type and duration of the mission, specific tasks, and area of operations will greatly affect the planning process and dictate the command relationship and who is responsible for planning and coordination.

Two areas are consistently ignored in the planning process, causing A^2C^2 to become desynchronized. The first area is route deconfliction. This results in aircraft flying over firing positions, through gun target lines, and over targets to be engaged. The second area is adjacent unit coordination and land management with maneuver around aviation fuel and rearms points (FARP) and assembly areas. **FM 1-111, Aviation Brigades**, Appendix H further describes A^2C^2 in detail.

The planning process is developed from the MDMP outlined in **FM 101-5, Staff Organization and Operations** and **FM 6-20-40, Tactics, Technique, and Procedures for Fire Support for Brigade Operations (Heavy)**. An aviation element must be considered part of the combat team and included in the planning process. Detailed descriptions giving aviation a task, purpose, method, and end state are required when units have control of attack aviation. The amount of planning an aviation FSO conducts will vary greatly on whether the planning process is centralized or decentralized.

Two common centralized planning missions are air assault missions and search and attack missions. In an air assault mission, the brigade conducts the planning with bottom up refinement from the units. In search and attack missions, maneuver staffs must send FRAGOs and updates on changes in unit locations, indirect fire assets down to 60mm mortars, and current enemy

situation. Since the aviation FSO does not own any of the ground, other members of the fire support team conduct the fire support planning.

If a brigade assigns its aviation an area of responsibility, the aviation battalion staff should begin planning at their level (decentralized) versus brigade (centralized). Most defensive operations for aviation entail decentralized planning. For instance if the aviation is tasked with a security zone in the defense, the aviation staff and the FSO develop the plan. The aviation FSO develops his fire plan in a method similar to a maneuver battalion FSO. The staff and FSO prepare to receive different operational control (OPCON) units with different capabilities and limitations. Products are tailored to the specific needs of any of these attached units.

During the battalion order, the aviation FSO briefs Annex D. The information should be formatted to fit on a fire support kneeboard to assist pilots. Information includes: targets, friendly artillery locations, gun target (GT) lines, current fire support coordination measures, and call signs and frequencies. See FM 6-20-40, Chapter 86 for air movement considerations and AMB guidelines.

After the OPORD, the aviation FSO establishes a daily battle rhythm to update pilots on all facets of current fire support control measures, systems, and targets. A technique is to have the AMC or pilots come to the TOC twice daily to receive a new overlay, fire support execution matrix (FSEM), and kneeboard products. A courtesy call to the aviation staff prior to departure on a mission also helps disseminate FRAGO updates.

Special Mission Planning

Planning for suppression of enemy air defense (SEAD), air assault missions, JAAT, and CAS must be viewed separately. Each requires detailed planning and synchronization. If the appropriate amount of detail is not incorporated into these missions, A²C² suffers. Each of the following topics deserves detailed attention in an SOP:

- SEAD planning is outlined in FM 6-20-40, (Chapter 3, p. 330) and provides responsibilities, requirements, and steps to help units focus on their SEAD efforts. Most units think the aviation FSO is responsible for planning SEAD missions. Not true! The aviation FSO is only responsible to ensure that the pilots have the current mission information from the responsible planners.
- Air assault fire support planning is also outlined in FM 6-20-40 with considerations and guidelines. Command and control (C²) along with planning for air assault missions are the responsibilities of the next higher headquarters of the executing element. The executors (aviation and maneuver) must parallel plan and push bottom up refinement of the plan with continuous coordination to ensure each player is synchronized into the plan.
- A JAAT occurs when attack rotary wing aircraft, fixed wing aircraft, and indirect fires attack a single target or target arrays together. Detailed planning and prior coordination is key to a JAAT operation. The key JAAT players are the AO commander with supporting FSO, air liaison officer (ALO), and air mission commander (AMC).

Once the “bottom up” refinement of the plan is collected at the battalion level, maneuver and fire support concepts with supporting graphics have to be passed to the aviation TOC.

Communications Linkages from Aviation Assets to Fire Support Platoons

Whether flying utility or attack, any pilot can observe fire. But to do so effectively, pilots must be able to communicate with the shooter and plan procedures to clear fires in the target area. These linkages are addressed in Annex D of the OPORD in addition to the communications plan. Clearance of fires in the BCT fight will be the biggest factor in responsive fires. All concerned parties must be well briefed in the plan and when possible conduct rehearsals.

Receiving Graphics on Fire Support and the Ground Tactical Plan

The most disturbing trend noticed at JRTC is air crews maneuvering throughout the battlefield with incomplete or, in some cases, no battlefield graphics. Aviation TOCs rarely display current and complete maneuver graphics. The aviation staff has to be able to paint the entire picture of the BCT operations, even when task forces are not allocated or planning to receive aviation assets. This will help aviation assets understand their role when tasked to support on call or emergency missions. TTPs for passing graphics and plans are listed below.

- Liaison officer at the brigade TOC ensures current products are pushed to the aviation TOC
- Battalion task forces send graphics and products directly to the aviation TOC
- Information sent via frequency modulated (FM) radio is not recommended due to amount of information to be passed.

Use digital communications, like the aviation FSE Advanced Field Artillery Tactical Data System (AFATDS), to retrieve the current plans and graphics from the maneuver task force FSEs. Used correctly, digital communication is the method most preferred to disseminate large amounts of information quickly. Some of the other digital devices that can tie into this system are the Airborne Target Handover System (ATHS) and the Aviation Mission Planner System (AMPS).

Preflight Briefing

Pilots should receive detailed preflight briefings daily by the Aviation S3, S2, and the FSO. This information should be pulled from FRAGOs and the coordinated battle tracking within the BCT. The preflight briefing covers:

- Enemy locations and air defense artillery (ADA) systems
- Friendly locations with front line traces
- Known points, obstacles
- Flight instruction and checkpoints
- Zone of action or areas that require reconnaissance
- Communication detail such as frequencies, call signs, and check in times
- Coordinating measures

- Any unit tactical SOP items
- Locations of indirect fire units with azimuths of fires
- Targets and number of volleys and rounds to be fired
- Special missions like registrations, immediate suppressions, and SEAD
- Fire support control measures (FSCM) including airspace coordination area (ACA) or support by fire positions (SBF)
- Call for fire (CFF) and A²C² deconfliction frequencies
- After briefing the pilots, the FSO should provide a knee board sized copy of key fire support information.

Clearance of Fires for Aviation Assets

Brigade, maneuver, and the artillery TOCs must track A²C² graphics to facilitate clearance of fires and to ensure artillery and mortar gun target lines will not interfere with flight routes. Such clearances require attention in specific areas:

- A²C² must specify responsibility of clearing aviation when under aviation commander's control, operational control (OPCON) to the BCT, and aviation assets are flying through unit boundaries
- Communication plans must ensure tracking of all aviation assets
- Methods of tracking fire missions when under aviation commander's control, OPCON to the BCT, and aviation assets are flying through unit boundaries
- A system to track fire missions, hot air corridors, flight paths, firing positions, and to properly clear lift and attack assets.

Post Flight Debrief

Target assessments should be the debrief focus. **FM 6-20-10, Tactics, Techniques, and Procedures for the Targeting Process** explains methodology of decide, detect, deliver, and assess (D³A). Assessment is a key factor in determining if your targeting is successful or not. All feedback from the success or failure of the mission is critical to future planning. Accurate feedback will determine whether a target needs to be attacked again or if the maneuver commander's conditions have been set to move to the next phase of the operation. It is critical this information not be lost in the aviation TOC, but is relayed/passed to the AO ground staff to assist with the planning/intelligence picture. Some of the areas to focus on are enemy action, identified high payoff targets, battle damage assessment, what was successful, and what was not successful during the mission.

Conclusion

While this article is not all-inclusive, it addresses some of the more common shortcomings we consistently see at the JRTC. Aerially delivered fires can be devastatingly effective. But like all missions, they require preparation. The planning for the missions must be precise. The aviation FSO must know his role within that planning process. Meticulous attention in these areas enables the aviation FSO and the aviation noncommissioned officer (NCO) to become more proficient and better understand where to access information to support the aviation commander's mission in the most effective manner.

Mortars and the Five Requirements for Accurate Predicted Fires

by Sergeant First Class Allen Ness, Task Force 2 Operations Group, JRTC

The platoon ran into the enemy position, almost immediately drawing effective fire that killed the lead scout and pinned down the first squad. Even as that squad returned fires, the platoon leader called for mortar fire to suppress the enemy so he could extract the threatened squad. He could see the enemy position half a kilometer from the squad. He quickly passed an accurate location back to the company. He passed instructions to the squad leader to withdraw under the protection of the mortar fires. Moments later he heard the first round land somewhere behind the enemy who was still raking his troops with small arms fire. It could have been worse; the rounds might have fallen short, on top of his troops.

A unit in contact calling for fire wants steel on the target, especially when the target enjoys fire superiority. Time wasted in adjusting rounds onto the target may cost lives. Providing such accurate, predicted fires is not magic. There is no wand to wave that will place the rounds on the target. However, there are five requirements that, if met, will provide accurate predicted fires.

Grab someone with crossed cannons and he will most likely be able to recite the five requirements faster than he can dial his own phone numbers. Grab a mortarman and you may find he is familiar with the concept of the five requirements. He may even be able to explain one or two but that is about as far as it goes. Given that state of affairs, even fewer mortarmen can explain the support necessary to meet the five requirements. Maneuver commanders and fire support officers (FSOs) often have no idea of what the mortars are asking for or why they need it. This commonly causes friction for mortar platoons and sections on the Joint Readiness Training Center (JRTC) battlefield. Once a unit has met the five requirements it can expect to have first round effects on a target! First round effects are more lethal than adjusting rounds onto the target, thereby warning the enemy of incoming fires. They also reduce expenditure of ammunition. Accurate fires also lessen the likelihood of fratricide in the close fight. What follows is an examination of each of the five requirements and some simple measures to ease the friction.

Requirement 1 : Accurate Target Location and Size. Obviously the mortar platoon has no affect on this one. Several devices assist to establish target location and size. FSO, company commanders, and platoon leaders must ensure the forward observers (FOs) are doing everything possible to send accurate target locations. One option seldom seen on the JRTC battlefield is a shift from a known point. With a few well-planned targets, shift from a known point is probably the quickest method to obtain an accurate target location. The distances to the enemy are not far enough to require an observer to target (OT) factor. Consequently, the observer merely estimates the range correction and lateral shift and calls in the mission. Most units are very good at the FO/Precision Lightweight GPS Receiver (PLGR) battle drill.

Requirement 2: Firing Unit Location. This process involves the azimuth of lay, as well as the actual grid location of the base gun. After deploying to the JRTC box from the intermediate staging base (ISB) in Alexandria the declination of the platoon's M2 aiming circle is no longer valid. Even moving from Geronimo drop zone to Shughart-Gordon the declination constant changes 10 to 15 mils. A common but incorrect solution is to apply a map declination from the marginal data. This map data is 20 mils off the actual declination in the box. Over the 5600 meter maximum range of the M252 81mm mortar, this could cause a 160 meter inaccuracy.

Several solutions are available to establish an accurate gun lay. The AN/PSN11 can be used to set up an end of orienteering line (EOL). By averaging the location of a distant aiming point (100+ meters) and the location of the circle, then using the navigation function to calculate an accurate azimuth to the distant aiming point (DAP), you establish a known azimuth on the ground to use to lay the guns as described in **FM 23-90, Mortars**. The accuracy gained from this procedure although better than a map declination is still suspect because of the limited ability of the PLGR software to calculate azimuths. A field artillery battery travels with a position and azimuth determining system (PADS) team. The team's mission is to assist the firing battery in meeting the same requirements. Every time the firing battery moves, the PADS team begins their priority of work again: they survey the guns, establish a declination station, and pull security and radio watch for the battery.

The PADS team offers several options to increase the mortars level of accuracy. The mortars can visit the firing battery and use their declination station, coordinate to escort the PADS team to the mortar location, or conduct a simultaneous observation to establish a known azimuth. With the PADS team and the mortars simultaneously observing the same celestial point (sun or star), the PADS team can transfer an accurate azimuth to the mortars aiming circle (or gun sight). **FM 6-2, Techniques, Tactics, and Procedures for Field Artillery Survey**, Chapter 7, provides step-by-step instructions. The battalion fire support NCO can communicate with the PADS team via his AFATDS (advanced field artillery tactical data system) computer or he can find their call sign and net identification in the automated net control device (ANCD).

Requirement 3: Weapons and Ammunition Information. The smoothbore, fin stabilized round of the mortar does not allow for the ballistic corrections used by the artillery. Each lot number of artillery ammunition has ballistic data such as muzzle velocity or chamber pressure. Each round the mortars fire will vary depending on the tube age and wear, the amount of leakage around the round, and the number of rounds fired since the bore was swabbed. The only element the mortars can affect is the propellant temperature. The average fire direction controller sticks a finger up in the air, estimates the air temperature, and enters this in the mortar ballistic computer (MBC). The air temperature at JRTC may exceed 100 degrees, but if rounds are lying in the summer sun the propellant temperature can be quite higher and shoot considerably farther. The only air temperature relevant to computing data is contained in the meteorological (MET) message. The setup data on the computer calls for the propellant temperature. A thermometer or highspeed watch inside the canister can provide this data easily. Units have used disposable paper thermometers available from their medics for this purpose.

Requirement 4: MET Information. The smaller the caliber the more vital meteorological data is for mortars. The high angle of flight exposes the round to nonstandard effects of atmospheric conditions much longer than artillery rounds. A MET team at division sends out the MET message periodically. It provides data on the wind direction, speed, air pressure, and air temperature at 500 meter intervals from the surface of the earth up to the maximum height of flight (maximum ordnance) of the round. According to **FM 23-91, Mortar Gunnery** "a MET message is valid until another MET message is received." This is a misleading statement. It does not mean that you do not need any more messages, only that you continue to apply the corrections from the last MET until you are able to receive an updated MET. In order to maintain accuracy any significant change in weather conditions requires a new MET. Doctrine calls for a new MET every four hours and most MET teams send it out more often. The battalion fire support noncommissioned officer (FSNCO) can receive MET messages digitally over his AFATDS computer; the AFATDS computer is compatible with the MBC but cannot communicate with other AFATDS systems while sending digital message device (DMD) signals. The option to switch the AFATDS and send a MET digitally exists but may not be practical at certain points of the battle. Light infantry units with the battalion mortar platoon and three company sections tie the FSNCO up for extended periods sending the MET to each section.

Finally, if the company FSO is monitoring the battalion fires net and copying the message for the mortars, he does not know what the report should look like or exactly what data is necessary. Make a laminated copy of a MET data sheet for the FSO or his radio telephone operator (RTO) and familiarize him with it. The FSNCO can send out the MET by voice one time on the BN fires net and provide the data to all the battalion mortars at once.

Requirement 5: Computational Procedures. The best fire direction center, with the fires net, the battalion command net, possibly a company net, RTOs, computers and check computers, and fire commands, is barely controlled chaos. There is nothing like it in the mortar business! A good standing operating procedure (SOP) is vital if you plan on providing your battalion with responsive, accurate fires. Who talks on the radio, who tracks the battle and clears the fires, and who gives the fire command and fills out the DA Form 2399? All procedures need to happen the same way every mission to keep the chaos under control and provide the redundancy necessary for accuracy and safety. Battle tracking is a weakness among mortar platoons, but it is necessary to double check the clearance of fires drill.

If your platoon is able to meet their four of the five requirements, they can expect first round hits, reducing unnecessary adjustments and increasing the effects of your fires on the enemy. Each step is important and should be taken to the highest level of accuracy possible. Missing one step alone might cause only a 30 meter error. But when another missed step adds another 30 meters and then the MET message adds 40 meters, the error is compounded. These errors quickly become costly!

Another valuable but misunderstood tool is registration. A registration corrects for all nonstandard conditions and provides accurate fires without any of the other elements, but does not identify what the corrections are for. Part of the corrections could be for location and azimuth, part for MET, and part for propellant temperature. The lack of this knowledge means that the guns cannot move without losing the validity of their registration. Registration corrections are good only for four hours. After four hours a new MET message must be applied to retain accuracy. The registration corrections are also only applied to a small area of the battlefield called transfer limits. This area surrounds the registration point, 1500 meters below and beyond, and 400 mils to the left and right. This is why the mortars suggest a grid to register. Any easy place to conduct the mission is probably going to leave the objective outside of the transfer limits. The time sensitive nature of the registration is also a factor if MET messages are not available or are still causing friction. It is also a difficult mission for the FO. He must identify the target location to at least 8-digit accuracy, usually with a PLGR that requires security. It should be evident that registration just becomes more and more complicated. If a registration is needed, it must be planned and rehearsed. Otherwise there is a good likelihood it will never happen.

If you are a mortar platoon leader or section leader pass the information you obtained in this article on to your commander and FSO. Commanders and S3s must plan to support your mortars' efforts to meet the five requirements if they want to support your maneuver with responsive, accurate fires.

CHAPTER 3 - FIRES IN THE CLOSE FIGHT

Improving the Responsiveness and Lethality of Fires at the BCT Level

by Lieutenant Colonel Richard M. Francey, Jr., and Major Michael D. Hilliard

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In recent years, fire supporters throughout the Army have struggled to maintain the edge against our number one demon—providing responsive fires. Many critics believe fire supporters have lost that edge and become unresponsive and ineffective, failing to support their maneuver commanders.

Some have even said we've "walked away from the close fight"—believe we are more interested in the counterfire and deep fights. While these fights are critical to the success on our next high-intensity battlefield, maneuver commanders must be convinced we're dedicated to ensuring fires are responsive and lethal in support of the close, decisive fight, the focus of the brigade combat team (BCT) commander.

Currently, the principal way we measure success is by deploying and fighting simulated combat vignettes at the National Training Center (NTC) at Fort Irwin, California; Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana; or the Combat Maneuver Training Center (CMTC) in Hohenfels, Germany. Some say responsive and lethal fires are a replication issue during force-on-force operations. They say we never really get "full credit" for our fires because fire markers and pyrotechnics lack the shock and fear factor that indirect fires bring to the battlefield. And although there may be some truth to the replication of fires dilemma during force-on-force operations, we need to refocus on some basic tactics, techniques and procedures (TTPs) as well as look for innovative ways to improve our responsiveness and lethality.

In the 4th Infantry Division (Mechanized), the *Ironhorse* Division at Fort Hood, Texas, we have taken on some initiatives to improve the responsiveness of fires, helping to make our maneuver counterparts more successful and lethal on today's fast-paced and fluid battlefield. Most of these initiatives are not new but simple modifications of and additions to our current doctrine and TTPs. They do, however, provide the framework for a brigade commander and his fire support coordinator (FSCOORD) to plan training and serve as a "base charge" to build their organization into a lethal combined arms team capable of bringing fire support systems to bear in the most responsive manner possible.

These initiatives include clarifying the commander's guidance for fire support, streamlining calls-for-fire, employing the close support battery for some task force (TF) missions, establishing habitual relationships, implementing a TF observation planning and integrating the direct support (DS) FA battalion training with the BCT's combat training. While alone none of these initiatives can fix the responsiveness issue, collectively they have made us more successful in providing the maneuver commander the fires he needs on today's fast-paced battlefield.

Clarifying the Commander's Guidance for Fire Support. Although the commander's guidance for fire support may not be the single most essential element in the delivery of responsive, lethal fires, it is one basic requirement for the success of indirect fires. On the surface, one might ask, "What does commander's guidance for fire support have to do with the execution of responsive and timely fires?" Guidance for fire support must be clearly articulated by the commander and fully understood by all subordinates in order to execute responsive, lethal fires. If fire support guidance is too general or lacks clarity, it opens the door for the poor execution of fires and, ultimately, the failure of an operation due to a lack of synchronization.

There are several doctrinal sources that outline principles. *FM 6-71 Tactics, Techniques and Procedures for Fire Support for the Combined Arms Commander*, dated 29 September 1994, offers commanders fairly simple guidelines for providing fire support guidance.

According to FM 6-71, commanders should address attack and engagement criteria, priorities for target engagement, guidance for special munitions (illumination, smoke, Copperhead and family of scatterable mines, or FASCAM) and, finally, how, when and where fire support should be employed in the development of courses of action (COAs).

Perhaps the most important part of guidance a commander can offer his fire supporter is what *effects* he wants indirect fires to have on a certain target. Artillery doctrine defines effects as “destruction, neutralization or suppression.” Some Combat Training Center (CTC) observer/controllers (O/Cs) coach “destroy, delay, disrupt, limit or suppress” as effects that should be applied by combined arms commanders in relation to their fire support assets. The challenge we face is quantifying these terms into battlefield effects—clearly understanding what the commander wants his fires to accomplish.

In the 1st Brigade, 4th Infantry Division, the brigade commander makes it very simple. During the mission analysis briefing, he tells the FSCOORD and brigade fire support officer (FSO) what targets he wants to attack during each phase of the operation. He then issues fire support guidance in terms of “destroy, delay or suppress.”

The critical part of issuing attack guidance in relation to the term “destroy” is to quantify effects. Simply saying, “I want to destroy the AGMB [advanced guard main body] in the passes west of the main defensive belt” does not provide clarity for subordinate commanders, fire supporters and the DS artillery battalion. This guidance would be much better articulated as, “I want to destroy two tanks and four BMPs of the AGMB west of the choke points as they line up in column formation.”

Finally, the brigade commander determines what systems he wants to attack each target with during each phase, i.e., cannons, multiple-launch rocket systems (MLRS), close air support (CAS), etc. This guidance then provides the fire support planners the information they need to begin developing the brigade fire support plan and, most importantly, the essential fire support tasks (EFSTs).

Streamlining Calls-for-Fire or (Getting Rid of the Middle Men). In an effort to increase our responsiveness to the brigade commander, we reduced the amount of friction and number of intervention points (IPs) that characterize cumbersome and slow fire mission processing. At the NTC, it is not unusual to see fire missions that take 10, 20 even 30 minutes to execute from the initial call-for-fire to rounds on the ground. This is disturbing when you familiarize yourself with time standards for fire mission execution as outlined in *Army Training and Evaluation Plan (ARTEP) 6-115 Mission Training Plan (MTP) for the Cannon Battalion*. Too often, observers initiate a fire mission and then each fire support element (FSE) stops the mission and reviews and approves it before the mission reaches the firing unit.

We fully understand there may be times when centralized fire mission processing is necessary; however, routinely processing fires this way is clearly a stumbling block for responsive, lethal fires for the BCT. Therefore, we streamlined the call-for-fire process. During planning, the brigade fire support planner articulates in the fire support execution matrix (FSEM) which TF has priority-of-fires in each phase of the battle. This order is based on priority-of-fires guidance issued by the brigade commander and FSCOORD.

Then the TF commander and TF FSO determine which subordinate unit in their TF will have priority-of-fires during that particular phase of the battle. Based on that allocated resource to the subordinate TF, the subordinate observer—fire support team (FIST), maneuver shooter, TF scout, Striker, etc.—processes all calls-for-fire directly to the battalion fire direction center (FDC) for execution of his mission. In some cases, the observer sends his mission directly to a firing unit for execution.

This decentralized means of fire support execution is just one method of increasing our responsiveness and lethality.

Employing Close Support Battery in TF Operations. In addition to streamlining the call-for-fire process, we increased the responsiveness to the maneuver TF commander during the close fight by employing a close support battery. We chose the term “close support” battery and not “dedicated” battery, thus allowing the brigade commander and FSCOORD more flexibility when employing fires throughout the breadth and depth of the battlefield.

The term “close support” battery describes a nonstandard tactical mission and support relationship whereby a Field Artillery battery organic to a DS artillery battalion fulfills a modified and prioritized list of inherent responsibilities with a battalion-sized maneuver unit or TF. It is important to understand that the close support battery is not a battery “dedicated” to the supported TF.

The brigade commander, relying on the FSCOORD’s recommendation, approves the close support battery mission. There are several factors that determine the need for a close support battery. (See Figure 1.)

Units Employ a Close Support Battery –

- In a movement-to-contact to support the lead task force when responsive vice massed fires are critical.
- In an attack to support a task force when the chance of losing the ability to provide responsive fires is high (e.g., losing long-range communications to the task force or when the task force is attacking through a distant mobility corridor).
- In the defense to provide immediately responsive Copperhead fires to the main effort task force.
- When the chance of unanticipated enemy fires is high, such as an ambush.
- When command and control from the task force to brigade to FA battalion probably won’t be jeopardized.
- When the brigade scheme of fires and execution of essential fire support tasks (EFSTs) demand the FA battalion be able to mass fires during critical events.

Figure 1: Considerations for Employing the Close Support Battery

Once the decision is made to employ the close support battery, there are several questions the brigade fire support planner must include as part of his portion of the brigade’s second warning

order (WARNO) sent out to subordinate units during the brigade's military decision-making process (MDMP). The fire support planner also must include the close support battery mission directives in Annex D to the brigade operations order (OPORD). (See Figure 2 on Page 24 for the questions asked in the WARNO and the directives in the OPORD).

Questions for the WARNO –**Which battery will support the designated task force?**

- What time or event triggers the start of the close support relationship with the supported task force?
- What time or event triggers the end of the close support relationship with the supported task force?
- In which phases and (or) specific events should the task force not rely solely on the supporting battery for fire support? [This is usually based on EFSTs that require the force FA to mass fires or when the task force is engaged in a support effort.]
- In which specific events must the task force plan for additional fires from the remainder of the force FA? [These events are usually the EFSTs in which the task force has primary execution responsibility.]
- What is the initial supporting battery movement and position area guidance? [These are based on the brigade EFSTs, communications, survivability and logistical requirements, etc.]

Information for the Fire Support Annex –

- The specific brigade fire support events during which the supporting battery will provide fires.
- The supporting battery movement and position area requirements for each event.[The task force FA battalion must know exactly when and where the supporting battery must move to or be in position to support the brigade scheme of fires.]

Figure 2: Close Supporting Battery Questions and Information Required in the Military Decision-Making Process (MDMP). The brigade fire support planner includes these questions in the brigade warning order (WARNO). He must include the other information in the fire support annex of the operations order (OPORD).

Establishing Habitual Relationships Between Firing Batteries and Maneuver TFs. To further enhance the execution of close support battery relationships, it is vital to develop habitual relationships between firing batteries and the TFs they may support during combat operations. As a matter of standing operating procedure (SOP), we aligned each firing battery in the DS artillery battalion with a maneuver TF in the BCT.

These habitual relationships serve several purposes. First, they enhance deployability. In our role as the Forces Command (FORSCOM) division ready brigade (DRB), each maneuver TF may deploy to a theater of operations as a division ready force (DRF). A DRF is a combat battalion TF (part of a DRB) with combat support (CS) and combat service support (CSS) units included in its deployment package. As a part of that DRF package, each maneuver TF may deploy with a supporting firing battery. Therefore, we have standardized which of the three firing batteries will deploy with each of the three maneuver TFs in the BCT.

Additionally, habitual relationships provide a foundation for combined arms training at home station. Such training further solidifies the relationship of the close support battery and its maneuver TF during combat operations.

Home station training between habitually related firing batteries and supported maneuver TFs helps increase the responsiveness of fires during combat operations. It allows the firing battery commander, TF FSO, TF operations officer and TF commander to begin developing their relationships well before they are organized for combat on foreign soil. Before combat operations begin, the habitual relationship allows the firing battery commander to “get into the TF commander’s head” and understand how he fights and what his expectations are of the firing battery commander.

One example of this team building training at home station is the execution of Abrams tank and Bradley fighting vehicle tables and the integration of indirect fires into live-fire training. Each habitually supporting firing battery is built into the live-fire training plan of his TF. The artillery battalion S3 (operations) and TF S3 coordinate the training plan that includes the integration of indirect fires into platoon-, company-and battalion-level direct fire tables.

This is just one way to improve home station training to build the BCT into a stronger, more lethal fighting force.

Implementing a TF Observation Plan. While delivering responsive fires is critically important, the use of observers in the execution of the brigade commander’s fire support plan must have the undivided attention of all fire support leaders to synchronize all assets. Strikers, company FISTs and maneuver shooters are all critical to the execution of fires across the 21st century battlefield. And although these assets are not new, we are leveraging their capabilities to their fullest potential in the *Ironhorse* Division.

First, we examined how we were using the company FSO during the execution of fires and found we needed to modify his traditional role during certain missions. When executing the observation plan, company FSOs are often out of position to be able to observe critical targets that support the TF and (or) brigade commander’s EFSTs.

If the mission is an offensive operation, the company FSO often follows the company commander’s tank or Bradley and does so at his own peril. The bottom line is that a tank or a Bradley and a fire support team vehicle (FISTV) should not be trying to get to the same piece of terrain. Unfortunately, those units still equipped with the M981 FISTV are at a marked disadvantage when trying to maintain the same tempo as that sustained by their maneuver brethren.

Additionally, there are times when company FSOs don’t understand the overall intent for fires in the TF or BCT zone or sector, namely the purpose of those fires as outlined in the EFST. They tend to be more focused on serving as a company-level FSCOORD as opposed to providing the eyes necessary to execute the TF or brigade fire support plan.

Taking these failings into consideration, we implemented “TF FISTs.” The TF FIST’s role is similar to that of a brigade Striker team. The FSO gives the TF FIST specific observation missions. He positions the TF FIST to observe and execute a TF- or brigade-level target or group of targets.

During such missions, the TF FSO does not work for the company commander or serve as his FSOCORD. It is essential for the TF commander to understand that the company FIST is his resource to inject into the fight as he sees fit.

We have not completely abandoned employing the company FIST in its traditional role. However, there are times when a TF commander or FSO must position one or more company FIST to improve responsiveness of fires within the BCT zone or sector. Additionally, we are leveraging the technological advances of the M1A2 system enhancement program (SEP) tank, M1A1D and the M2A3 Bradley OPORD fighting vehicle. Maneuver shooters have always played a vital role in the execution of indirect fires at the company level. However, the ability to obtain an accurate target location was often difficult at best. Now with the improvements to the far target locating devices in these combat vehicles, the maneuver shooter’s ability to obtain an accurate target location is significantly enhanced.

The maneuver shooter simply identifies a target that meets the tactical trigger and quickly determines its 10-digit location by lasing the target. The vehicle commander then transmits his call-for-fire rapidly to the company FIST via the digital Force XXI battle command brigade and below (FBCB²). The company FIST’s FBCB² automatically transmits the call-for-fire to the forward observer system (FOS) lightweight computer unit (LCU). The LCU operator then transmits the call-for-fire to the battalion FDC’s advanced FA tactical data system (AFATDS) for processing to the firing unit.

Special Note: When receiving a call-for-fire via FBCB², the FIST must input the target’s altitude manually before sending the data to the FDC. If maneuver sends the 10-digit grid via FBCB² using the “short form” call-for-fire, then the message will not include the altitude. In that case, the FOS automatically will enter the last self-location altitude of the FIST. If maneuver sends the data directly to the battalion FDC (or FSE), it will enter the altitude of the firing unit. If maneuver sends the data via FBCB² using the “long form” call-for-fire, the altitude is optional—again, the FIST should ensure the target’s correct altitude is entered.

Advances in technology allow maneuver shooters to have a significant impact on the execution of indirect fires.

Company FISTs and maneuver shooters bring a tremendous capability to the battlefield. However, there are no more lethal indirect fire killers in the BCT today than the brigade reconnaissance troop (BRT) and their Striker platoon. These soldiers give the brigade commander a significantly enhanced means to take the indirect firefight to the enemy.

The Striker platoon’s primary mission is to execute the brigade commander’s deep fight and then hand off targets to the TF scouts and TF FISTs. Recent technological advancements have improved the lethality of the BRT and the Strikers.

The addition of the long-range advanced scout surveillance system (LRAS³) to the BRT gives the brigade commander a significant advantage in executing his observation and surveillance plans. Our BRT scouts now can gain and maintain surveillance as well as attack the enemy with indirect fires well beyond 15 kilometers. The Striker platoon still has the ground/vehicular laser locator designator (G/VLLD) with a range out to 10 kilometers.

When organizing the BRT and Strikers for combat, one scout team is with a combat observation lasing team (COLT) and has the LRAS³. The LRAS³ allows the observers to begin to attack targets at longer ranges. The capabilities of this tremendous system provide the brigade commander another tool to increase the lethality and responsiveness of fires.

Training the DS Battalion for Combat. As we prepared for our upcoming Paladin Table XVIII (battalion-level live-fire qualification) and NTC rotation, we examined the types of fire missions we needed to train to best prepare for our NTC rotation or combat, whichever came first.

We focused the training on missions for the howitzer sections, FDCs and fire supporters in a scenario-driven live-fire exercise. We broke the scenario down into offensive and defensive missions. This allowed the DS battalion staff to work through the military decision-making process (MDMP) and issue an FA support plan (FASP) to the battery commanders. Once we began executing the mission, observers provided intelligence calls via spot reports, enabling the battalion fire direction officer (FDO) and S3 to anticipate the battalion's next significant event.

During the defensive scenario, we executed missions, such as firing FASCAM, marking rounds for CAS, suppression of enemy air defenses (SEAD) for CAS and (or) attack aviation and at linear targets (the enemy delayed at an obstacle). Once we transitioned to the offensive scenario, we focused on suppression, obscuration, security and reduction (SOSR) actions, such as firing obscuration smoke, continuous suppression as well as group and series of targets. Additionally, each battery had a close support role during the Paladin Table XVIII and fired fire missions in support of its TF. As part of the close support evaluation, the observer requested additional fires on the target through the brigade FSO or FSCOORD; once they were approved, the battalion FDO massed the remainder of the battalion on the close support battery target.

We also tested the battalion's fire-for-effect shift times. The observer initiated a battalion fire-for-effect and in the middle of the mission, sent an "end-of-mission" message and then initiated another fire-for-effect mission.

Training on these types of missions not only allows the FSCOORD to assess the effectiveness of his organization during live-fire conditions, but also enhances the responsiveness of the BCT FISTS.

Fire supporters must strive continually to increase the effectiveness and lethality of fires. Leaders at all levels must be adaptive, conduct innovative training and increasingly provide our maneuver brethren the most responsive, lethal and devastating fires—whenever and wherever the BCT needs them.

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Major Michael D. Hilliard, until recently, was the S3 of 4-42 FA at Fort Hood. Currently, he is the XO of the 4th Infantry Division Artillery. Also at Fort Hood, he was the Assistant Fire Support Coordinator and FSO for the 1st Brigade Combat Team, both in the 4th

Infantry Division. Major Hilliard was a Firing Battery Combat Trainer on the Werewolf Fire Support Training Team at the NTC, Fort Irwin. He commanded A Battery, 3d Battalion, 1st Field Artillery, part of the 3d Infantry Division (Mechanized) in Germany, the same division in which he served as a task force FSO. During Operations Desert Shield and Storm, he was the S1 for the 4th Battalion, 5th Field Artillery, 1st Infantry Division (Mechanized) out of Fort Riley, Kansas. He is a graduate of the Command and General Staff College, Fort Leavenworth, Kansas.

Attack Aviation Fires for the Close Fight: A New Approach

by Major Brooke H. Janney, USAR

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Divisional employment of attack aviation is changing. For almost 15 years, the employment of divisional attack helicopters has focused on striking deep at second-echelon forces. While retaining the ability to attack deep, this focus has begun to emphasize the AH-64 Apache helicopter in the close fight alongside brigade combat teams (BCTs).

The new structure of the opposing force (OPFOR) for the contemporary operational environment (COE) is in Battle Command Training Program (BCTP) exercises and National Training Center (NTC) rotations at Fort Irwin, California. This COE OPFOR increases the value of employing aviation in the close attack while simultaneously reducing the high-value targets in the division's deep attack battlespace of 15 to 30 kilometers beyond the forward-line-of-own-troops (FLOT). Army aviation now faces OPFORs with more air defense systems of higher quality, increasing the risks of employing aviation beyond the FLOT.

Fire support doctrine for supporting aviation operations has not kept pace with changes in aviation operations, equipment or threat. Changes in the means and objectives of divisional deep attacks, the advent of aviation close attack operations and the fielding of the AH-64D (Longbow) alter both the missions assigned to attack helicopter battalions and aviation brigades and the tactics, techniques and procedures (TTPs) they employ. Fire support TTP also must evolve to account for these changes and leverage the increased capabilities of the advanced FA tactical data system (AFATDS).

The 3d Infantry Division (Mechanized), Fort Stewart, Georgia, recently experienced all these changes. The 1st Battalion, 3d Aviation Regiment (Attack) fielded the AH-64D Longbow in March 2001. The division artillery fielded AFATDS in the fall of 2001. The division participated in a BCTP Warfighter exercise facing the COE OPFOR in January 2002. These changes enabled a substantial shift in aviation operations and demanded a similar shift in our fire support planning and execution in support of those operations.

AH-64D Longbow. The AH-64D is a remarkable weapon that brings a new suite of capabilities to the attack helicopter battalion. Its multi-functional displays, active fire control radar (FCR) and passive radar emission detection systems provide a quantum leap forward in situational awareness (SA) and target attack options. Its digital communications equipment enables the AH-64D to exchange information with other Longbow helicopters and link with its battalion fire support element (FSE) via AFATDS. This enhanced SA fundamentally alters the way the attack battalion fights. (See Figure 1.)

AH-64A Helicopter

Speed is life.

- It moves at high speeds at low altitude between air checkpoints (ACPs).
- Its routes are aligned by terrain and air defense threats to maximize protection.
- It has a relatively fixed schedule for movement supported by suppression of enemy air defenses (SEAD) and based on an H-Hour or F-Hour time line.

AH-64D (Longbow) Helicopter

Knowledge is power.

- It moves at moderate speeds at low-altitude maneuver between ACPs and can support infiltration by a team, platoon or company.
- Its routes are aligned by terrain and air defense threats to maximize protection while taking advantage of its fire control radar (FCR) and increased situational awareness (SA) to conduct traveling overwatch and bounding overwatch maneuvers.
- It has less of a fixed time schedule for movement as the unit will respond to new information acquired en route to its target area. This requires an alternative form of SEAD fire planning: event-driven SEAD (single targets or groups of targets) vice a fixed, time-driven SEAD plan.

Figure 1: Air Movement vs Air Maneuver: The AH-64A vs the AH-64D (Longbow)

Lacking these on-board SA capabilities, AH-64A battalions conduct detailed planning before execution to compensate for its inability to detect changes in the threat and adapt the plan significantly while en route. The battalion's standard tactics for near-FLOT and cross-FLOT operations center on high-speed flight down an established air corridor under radio listening silence to minimize its emissions signature.

Fire support for these tactics reflected this approach. Suppression of enemy air defenses (SEAD) was conducted at the time of attack along the ingress and egress routes using a time-driven fire plan. Deception SEAD was recommended doctrinally but rarely conducted, usually because of limitations in the number of firing units available.

In contrast, the AH-64D Longbow leverages its increased SA in ways that significantly alter such tactics. Extensive planning is still conducted before launch, but flexibility is built into the plan, reflecting the anticipated increase in SA. Scout aircraft teams move ahead of the main body of aircraft. Aircraft with the FCR are in the formation to ensure all-around scanning and early warning. Designated teams identify and attack air defense threats acquired en route. Lead elements "paint" the engagement area (EA) before the main body arrives and pass the EA digital picture back to the rest of the attacking unit, complete with assigned sectors of fire and target priorities. In effect, the unit transforms what was once an air movement into an air maneuver.

These tactics alter the standing operating patterns of the battalion. Elements move from air checkpoint (ACP) to ACP using formations similar to traveling overwatch and bounding overwatch. Aircraft speed up and slow down in response to the changing tactical situation. Air corridors now must be wider to enable teams to conduct air maneuver.

Operating under radio listening silence reduces combined arms coordination capabilities and flexibility. This is no longer as important because the AH-64D aircraft's signature already has been increased by its millimeter-wave radar emissions and digital radio transmissions.

Because attack aviation units no longer move using a rigid time line, time-driven SEAD techniques become too inflexible. Digital fire plans using only a time line cannot be altered once they are activated. An event-driven fire plan using separate targets and target groups provides the required flexibility. The SEAD plan retains a time line but is structured as discreet targets and target groups to maintain flexibility. En route communications are not required to keep the fire support plan synchronized with the movement of the attacking element.

Airspace Management. Fire support TTPs for airspace management require changes. Units conducting offensive and defensive air maneuver need broader and more flexible airspace management and fire support coordinating measures (FSCMs). These FSCMs enable air maneuver while protecting and deconflicting operations with the rest of the combined arms and joint team.

The aviation brigade's airspace is of interest to the fire support community. Preventing the simultaneous use of the same airspace by rotary- and fixed-wing aircraft and artillery rockets, missiles and projectiles is as critical a deconfliction function for the aviation FSE as FSCM management and clearance of fires is for the ground maneuver FSE. While there is a formal process and channel for divisional airspace command and control (AC²) planning and execution, the aviation FSEs play a critical role in execution. The ground maneuver and aviation FSEs enable both forces to establish and revise airspace management measures and deconflict airspace rapidly during execution.

AFATDS provides a means of rapidly building and disseminating supporting FSCMs that help airspace management. For each air route, restricted operating zone (ROZ), forward arming and refueling point (FARP), hold area (HA), battle position (BP) or attack-by-fire position (ABF), the FSEs must enter an appropriate FSCM.

Doctrinally, several airspace management measures have no clear impact on fire support operations. A ROZ, for example, deconflicts airspace between aircraft but is not doctrinally recognized as a FSCM. A BP or ABF can be entered into AFATDS as a graphic control measure and will appear on the display screen. However, they do not generate a requirement message to deconflict fire missions into that area.

This oversight must be countered by translating airspace management measures and graphic control measures into appropriate FSCMs. Aviation ROZs become airspace coordination areas (ACAs) established at the same locations and altitudes as the ROZs. Air routes become air corridors segmented at each set of ACAs to align the affected airspace with the exact length, width and altitudes of the route. FARPs, BPs and ABFs all have ACAs established from one foot above ground level (AGL) to the maximum altitude at which the aviation unit expects to operate for the mission; this creates a three-dimensional "buffer" within the airspace and applicable ground battlespace used by the aviation unit that signals the need for a coordination requirement before executing fire missions in that battlespace.

These measures are built and disseminated in a planned status. The FSEs activate them as required by aviation operations, and the FSEs deactivate them as soon as possible to minimize the impact on FA fires. AFATDS makes dissemination and activation/deactivation faster and simpler than older, analog methods, particularly when operating in a tactical local area network (LAN).

A review of firing table data for multiple-launch rocket systems (MLRS) and 155-mm cannons reveals that as long as aviation units remain 2,200 meters from the firing point and impact point of a fire mission, the ordnance will pass above the aviation unit operating at 200 feet AGL and below. This careful application of FSCMs supporting aviation operations, when paired with proactive deconfliction of position areas for artillery (PAAs) with airspace control measures during operations planning and execution, results in minimal impact on either community. (See Figure 2.)

Battle Position (BP) or Attack-by-Fire Position (ABF) Airspace Coordination Area (ACA)
<ul style="list-style-type: none">• It is at least 1 foot above mean sea level (MSL) to 200 feet above ground level (AGL).• The ACA dimensions match the BP or ABF.• Rule of Thumb: The ACA is 2 x 2 kilometers with an attitude along the orientation of the BP or ABF to the engagement area (EA).
Air Corridor and ACA Activation
<ul style="list-style-type: none">• The air corridor is segmented by air checkpoints (ACPs).• The advanced FA tactical data system (AFATDS) only allows segmented air corridors, so they are used in lieu of ACAs.• The width of the air corridor matches the route's actual maneuver space.
Route and Air Corridor
<ul style="list-style-type: none">• The altitude must be at least 1 foot AGL and up to 200 AGL.• The width must be a minimum of 3 kilometers (1.5 kilometers from the center line); the preferred width is 4 kilometers wide (2 kilometers from the center line).

Figure 2: Airspace Management for the AH-64D (Longbow). The use of these measures and required altitudes reduces the amount and duration of airspace restricted during aviation operations. Artillery is only restricted when/if aircraft fly across the gun-target line within 2,200 meters of the multiple-launch rocket system (MLRS) or 155-mm howitzer firing point or the target area and only when the airspace/fire support coordinating measure (FSCM) is activated.

Fire Support for Attack Aviation in the Close Fight. Army aviation is returning to its roots with its doctrinal move toward employing attack helicopter in attacks close to or in support of a BCT. This type of mission harks back to the advent of the armed helicopter and maximizes several of its characteristics that make it uniquely qualified for this role.

One approach to these close attacks is to employ the attack battalion or company in an operational control (OPCON) relationship to a BCT. While reducing the aviation brigade's role in planning and execution, this relationship is critical to greatly simplify mission planning and on-the-ground coordination. Working through the aviation brigade liaison officer (LNO) assigned to each BCT, the attack battalion or company commander coordinates the unit's role in the BCT's scheme of maneuver. Attack battalion tactical command posts (TACs) can collocate with ground maneuver brigade tactical operations centers (TOCs) or TACs, further improving coordination.

Attack helicopter units generally continue to operate from the aviation brigade assembly area for protection and maintenance support. They frequently establish FARPs and occasionally HAs in the brigade support area or an area nearby to ensure more responsive support to the BCT commander if a second or third turn of aircraft is required.

Each BCT FSE and its direct support (DS) FA battalion integrate the attack battalion's fire support requirements and essential fire support tasks (EFSTs) into the fire support plan. The BCT's DS and reinforcing artillery are the primary units to provide SEAD while division artillery general support (GS) assets remain prepared to fire SEAD if the DS assets are insufficient or over-tasked at the time aviation is committed to the close fight. (See Figure 3.)

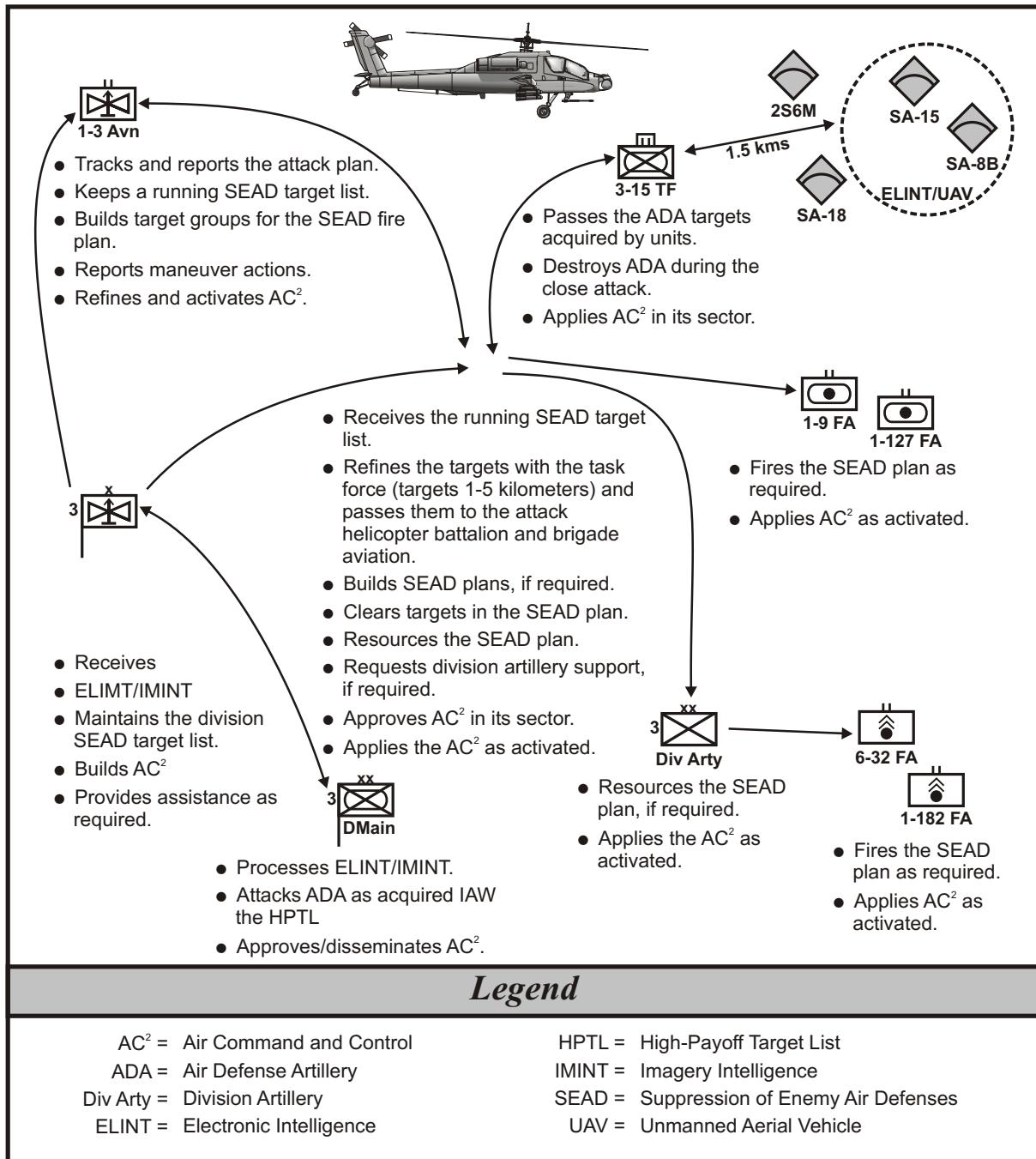


Figure 3: Fire Support for SEAD in the Close Attack

The attack battalion FSE becomes a subordinate maneuver FSE to a BCT FSE when fighting close. The aviation brigade FSE provides continuous air defense artillery (ADA) targeting support, airspace coordination and FSCM support, and planning assistance to the BCT and attack battalion FSEs.

There are several considerations associated with planning fire support for attack aviation in the close fight within minimal time. If a current ADA picture is available and pre-established air routes meet mission requirements, the attack battalion and FSE still require 30 to 45 minutes notification before launching aircraft. This allows the FSEs to refine the final SEAD target list, allocate firing units to the fire plan, finalize the situational and mission briefings for the aircrews, and coordinate for and clear the airspace and battlespace.

The maneuver forces must refine the target list before the aircraft are launched in the close fight. Electronic intelligence (ELINT) and imagery intelligence (IMINT) provide a relatively accurate picture of the ADA threat five kilometers behind the FLOT and beyond. ADA located beyond the five-kilometer zone move less often and, therefore, can be located and engaged with high confidence using intelligence that is one to two hours old. ADA elements at or near the FLOT (up to about five kilometers) move constantly and are time-sensitive targets that cannot be accurately engaged by intelligence that is one to two hours old. This area also contains the vast majority of man-portable air defense systems (MANPADS) with infrared (IR) homing that are the most difficult to locate using ELINT/IMINT. When the BCT FSE and attack battalion FSE use the aviation brigade FSE ADA target list and target updates as a start point and refine it with bottom-up additions and corrections, units have their best effects.

The usual targeting process is to have the attack battalion FSE build the SEAD target list from aviation brigade and BCT FSE target lists and then transmit a finalized target list to the BCT FSE for target clearance, firing unit allocation and execution. The BCT FSE clears all targets and sends it to the DS FA battalion to resource as much of the fire plan as it can. Targets that cannot be fired by DS and R units are transmitted to the division artillery for engagement by GS units.

Execution is a combined effort by all parties. The attack battalion FSE establishes triggers for executing the SEAD plan and announces when the attack battalion meets the triggers. The FSE also activates and deactivates airspace control measures and FSCMs. The BCT FSE and DS battalion fire direction center (FDC) control the execution of SEAD fires and synchronize any close air support (CAS) employed in concert with the attack helicopters, passing CAS terminal guidance responsibility to the air mission commander, if appropriate. The aviation brigade FSE monitors the operation and relays any immediate ADA threat indicators that develop in the area of the operation.

SEAD in this type of environment is not a one-time event. The suppressive effects of a SEAD plan are temporary unless a sufficient volume of fire is generated to neutralize or destroy ADA systems. This is the appropriate approach if target location is accurate and sufficient firing units are available. ADA systems are thin-skinned vehicles with delicate exterior armament and equipment and do not require large quantities of munitions to neutralize or destroy them.

Air defense systems are highly specialized and a limited commodity. There is little likelihood the OPFOR can replace these assets rapidly, if at all. If an FSE elects to fire suppressive effects only, that FSE will have to repeat the SEAD in the general area of the operations every five minutes. As the engagement continues, additional firing requirements begin to build as functional ADA systems have moved quickly after taking indirect fire and are firing again.

A partially effective or an ineffective SEAD plan usually results in either aircraft losses or mission failure. Even if aircraft are not shot down or damaged, ADA threats that remain

operational force aircrews to divert ordnance to killing ADA rather than the tanks, infantry fighting vehicles (IFVs) or artillery they were sent to kill

The AH-64D is quite capable of conducting self-SEAD or, as the aircrews call it, destruction of enemy air defenses (DEAD). The drawback of self-SEAD is that aircrews expend their time and ordnance on targets that do not directly help the ground maneuver commander achieve his mission.

Daytime missions are particularly dangerous as ADA gunners can acquire their Apache targets visually and orient MANPADS IR missiles and air defense guns to those targets. Daytime missions require more detailed SEAD plans and more firing units to achieve even suppressive effects.

Issues Ahead. The Army's use of aircraft and airspace is currently undergoing transformation. The Army Aviation Transformation Plan will alter attack, assault and general support aviation operations and tactics. The reduction in the number of helicopters in an attack and lift company, for example, will have a direct impact on the number of aviation units or sub-units required to complete mission profiles. Further proliferation of unmanned air vehicles (UAVs) will increase the type and quantity of management measures needed to deconflict a more crowded airspace.

Air defense measures continue to develop. These already formidable weapons and networks will continue to rise to the challenge presented by US air dominance and our expanding use of Army aviation for attack, intelligence surveillance and reconnaissance (ISR) and movement.

Ultra-modern ADA surface-to-air systems, such as the SA-11 and SA-12, are already being upgraded and replaced by new systems, such as the SA-17 and SA-20. The deadly game of action, reaction and counteraction continues.

With every change in air maneuver operations and the threats to them, fire support TTPs must evolve similarly. Tactics that support today's operations against today's threats will inevitably fail to optimally support those of tomorrow. Just as Field Artillerymen constantly reevaluate TTPs to support ground maneuver operations, we must constantly reevaluate our TTPs to support air maneuver operations.

The combination of lethal and nonlethal indirect fires paired with fixed- and rotary-wing observation and attack aircraft remains one of the Army's most potent joint/combined arms teams. The proper employment and synchronization of this team has become one of the lynchpins of division operations and is becoming more crucial to brigade operations. The fire support community must maintain its effectiveness in support of that lethal team.

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Fire Base Defense is a Red Leg Mission!

by Major Gregory M. Smith, Fire Support Division Planner, JRTC

The battery commander received his mission as part of the division defense. He was to move to a position area (PA) and harden it in preparation for a mounted attack by Atlantican mechanized and armor forces. The S2 indicated the division reconnaissance (recon) would pass through the area in about 20 hours, with the brigade recon and the initial dismounted attack about 24 hours after that. The tanks would be close behind the dismounts. This meant he had about 48 hours to prepare his defenses.

The battery conducted a daylight occupation and immediately placed its crew served weapons on the perimeter. By nightfall a single strand of concertina surrounded the perimeter. The next day the first sergeant supervised the position improvement and the rest of the leadership focused on providing effective fires for the upcoming battle. Some triple strand concertina was in place and every section had some version of a range card. The battery was confident it could withstand the upcoming onslaught in the morning.

The brigade recon easily identified the battery location as they passed through the sector. Stay behind special forces (SF) were notified and at 0300 they hit the battery. The trooper on guard saw the opposing force (OPFOR) approaching the wire and attempted to engage. Because his ammo had been laying in the dirt, his squad automatic weapon (SAW) jammed. Panicked, he was unable to perform immediate action and his position was quickly destroyed. The SF destroyed one gun and the Q36 radar before they were driven from the position by an unorganized and unrehearsed defense.

At first light the tanks arrived. They appeared just as the commander estimated and his two sections attempted to engage with direct fire. Both section chiefs drastically erred on the range and the rounds missed the target. The tanks were able to destroy 4 howitzers before disappearing back the way they came. The battery was down to one operational gun and 30% of its personnel. Fortunately the brigade defense held and the Atlanticans were repelled.

Equally fortunate was that this was a training scenario and the casualties would be back for the next battle...

Artillery units coming to the Joint Readiness Training Center (JRTC) consistently prepare poor battery defensive positions. Batteries generally establish basic defenses. They dig rollover pits, emplace crew served weapons on the perimeter and highspeed avenues of approach, and place some concertina around the perimeter. However, these preparations generally prove insufficient when the OPFOR attacks or just probes because they lack depth and the defense is not integrated. Add to that, most units do not execute their battle drills properly. These problems

begin with the individual soldier and are compounded at every level of command. Below are six of the most frequently observed shortfalls with some recommendations for improvement.

Soldier Skills. Soldiers lack basic defensive skills such as proper employment of weapon systems, construction of individual fighting positions, and emplacement of barriers and obstacles. Few fighting positions are constructed to standard with overhead cover. An open “foxhole” is an unfilled grave! Section chiefs are not versed in hardening a howitzer position or tying in their defensive efforts with adjacent sections. Units need to conduct weapons training on all systems found in the battery. This should include capabilities, employment, corrective action and maintenance, and finally test firing each of them. After soldiers are proficient on these tasks, the proficiency must be sustained. Units should integrate sustainment training into semi-annual range weeks. This sustainment training should include completing range cards and loading, firing, and clearing the weapons systems, including antitank systems. Batteries should also conduct leader professional development (LPDs) on the integration and synchronization of battery defense to ensure the section chief understands required tasks and can facilitate the concurrent execution of preparation at the section and battery level.

Engineer Assets. When digging assets are allocated to a firing battery, they often do not focus on priority of work. Moreover once digging begins, there is no consistent standard between sections in quality and time spent,. Additionally, units are not prepared to receive the dozers and often waste hours of blade time reconfiguring their position to support digging operations. All too often they have to call themselves "out of action" while the engineers are in the position. Units need to designate a ‘CINC Dozer’ who is responsible for executing the priority of work by allocating assets to the sections. Additionally, he verifies that the positions are prepared to standard and section chiefs are prepared to receive the asset when it becomes available rather than allowing it to sit idle. The battery also needs to understand if it will or will not receive engineer support and how that affects positioning. These considerations, as well as positioning attachments need to be planned for and incorporated into the initial occupation and firebase construction. Battery leadership should incorporate an engineer rehearsal into their PCCs prior to movement. Executing this on a sand table will facilitate efficient priorities of work for the engineers and an integrated position when the firebase is complete.

Preparation Monitoring. Batteries fail to track the progress of defensive preparations and report this information to battalion in a coordinated manner. Each section starts its own defenses but no single person in the battery tracks the information and reports it to battalion. This prevents higher from accurately assessing progress and potentially pushing more assets to the battery or allocating excess assets to the main defensive area fight. A single source needs to track how the unit’s defensive preparations are proceeding. That person must be able to relate this information to the commander and first sergeant as well as the battalion tactical operation center (TOC). This information should be tracked at the battery operation center (BOC) and can be reported in one of several formats. It is crucial that it is complete, accurate, and timely enough to allow the leadership to assess progress in relation to the required completion time or other milestones. This information also allows the battalion to allocate more assets (digging and Class IV) if the need is identified early and the assets are available.

Situational awareness. Situational awareness, including adjacent unit coordination and use of early warning nets is poor. The battery will always be positioned in a maneuver unit’s battle space. Coordination with this unit is mandatory to ensure adequate defensive measures are taken and to prevent fratricide as the units conduct combat operations. Combat support nets also provide a picture of events on the battlefield (threat air, chemical attack, mass casualty evacuations, and enemy contact) that can prompt the unit to a higher state of alert. Adjacent unit coordination is the single most effective method of preventing fratricide. At a minimum, a leader from the battery needs to coordinate face-to-face with the TOC of the neighboring unit. This

allows units to deconflict terrain, exchange frequencies and graphics, and discuss ongoing and planned operations such as security patrols and resupply in the area. Monitoring the nets of adjacent and supporting units also allows the leadership to exploit situational awareness to their advantage in countering enemy actions. Constant communications with the artillery battalion S2 also have a large payoff in this effort. All too often, battalion S2s fail to update firing batteries on changes to the enemy situation that can have a huge effect on how the battery commander approaches his defensive measures. As a result, firing batteries are often surprised by enemy air or a rear area air assault insertion. In most cases, the artillery S2 sees the indicators that these actions will occur, yet fails to inform the firing batteries in a timely manner.

Battery Level Intelligence Preparation of the Battlefield (IPB): Batteries do not use IPB to establish priorities of work and position weapon systems or obstacles. Preparations begin at the section level without the battery leadership analyzing the threat and the vulnerabilities at that specific location. Batteries are generally assigned a position area by battalion based on operational requirements and the S2's IPB. However, leaders need to conduct an IPB once they arrive in position to identify most likely enemy threat, most dangerous threat, and avenues of approach. Weapon systems are then positioned to maximize their capabilities: the M2 covers mounted routes, section M240s are placed to provide the most advantageous killing effects, and MK19s cover dead space. By visualizing these things the leadership is better able to design a defense to counter the enemy and establish priorities of work to ensure time and effort are not wasted.

Defense in Depth: Units fail to position obstacles and cover them with cannon fire, both direct and indirect. Units generally focus on the direct fire weapon systems and only plan to about 400 meters from their position. Depending on terrain, the battery defense can extend well beyond 400 meters and even beyond line of sight. Obstacles can be 800-1600 meters away and covered by a target and observer from the battery. This allows engagement prior to the direct fight when armored vehicles have a decisive advantage. Batteries generally do not extend the defense beyond line of sight and direct fire weapon systems. Even if a howitzer is employed in the direct fire mode there are no range cards or range markers to facilitate rapid and accurate engagement of maneuver forces. Ranges sometimes extend 2000 meters or more yet the gunners and chiefs use range estimation only. The Precision Lightweight GPS Receiver (PLGR), Gun Laying and Position System (GLPS), maps, and pace count, as well as the battalion Position Azimuth Determining System (PADS) team, all provide accurate distance to reference points. Additionally, units need to push obstacles, targets, and tank killer teams forward of the position to engage mechanized forces before they are aware of the battery location and are able to deploy into combat formation. Targets may be fired by another battery or by the unit itself if the obstacle is outside minimum range. Good and effective use of wire that reinforces what the battery commander wants to do with his defense is another asset that batteries fail to fully exploit. Quite often triple strand is not pushed out to eliminate hand grenade and satchel charge engagements and wire turning obstacles that would canalize the enemy into direct fire kill zones are rarely utilized even when there is enough Class IV to do so.

The OPFOR dismounts were easily identified by the security patrol and engaged. They were forced by turning obstacles into the triple strand, where the battery engaged them with multiple weapon systems as they attempted to breach the triple strand concertina. The quick reaction force (QRF) quickly assembled and destroyed the threat before it reached the battery's inner defense. The two casualties were quickly evacuated to the brigade support area (BSA) along the rehearsed route.

At first light the brigade nets were clogged with spot reports of the fight. Most tanks were being destroyed in the main battle area (MBA), but some were making it to the rear area. The observation post (OP) forward of the position reported two T72s and one BMP approaching from the south. The executive officer (XO) quickly reacted by having guns 5 and 6 lay for direct fire on the target reference point (TRP) the battery had emplaced the night prior. After the vehicles cleared the tree line, three volleys of direct fire destroyed the tanks, every round a direct hit at that known distance. The antitank team eliminated the BMP as it attempted to flee.

This is how we want to see every fight at the CTCs end and with proper home station training it doesn't have to be a fairy tale.

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