



Massing Combat Effects: 1st Cav Fire Support TTP

by Major General Leon J. LaPorte and Colonel Raymond T. Odierno

During a recent III Corps simulation exercise, the 1st Cavalry Division, Fort Hood, Texas, experimented with some new approaches to combat in a tough theater of operations. Several factors in the scenario caused us to revise our tactics, techniques and procedures (TTP) and redefine how we conduct fire support at the division level. First, the simulation scenario had unique mission, enemy, terrain, troops and time available (METT-T) considerations. Second, the division com-

mander had increased intelligence-gathering systems available. Third, we learned to take full advantage of the advanced Field Artillery tactical data system's (AFATDS') ability to distribute fire missions quickly across the fire support spectrum.

Based on the corps' and our own intelligence preparation of the battlefield (IPB), the combination of terrain and enemy required us to rethink how to plan and execute division operations in this area of operations (AO). We were confident our

MIA2 tanks and M2A2 Bradleys could win any direct fire engagement; our concern was the enemy artillery's ability to destroy our maneuver forces with artillery in very restrictive terrain.

The tendency in our Army, as well as in the 1st Cav, is to plan the infantry, armor and cavalry scheme of maneuver and then have the fire support coordinator (FSCoord) or officer (FSO) develop a scheme of fires that supports the maneuver plan. Often this is manifested by separate intent statements, one



for maneuver and one for fires. The METT-T factors we faced in this exercise caused us to realize how dependent we were on timely and accurate fires. This led us to shift the paradigm from fires supporting the scheme of maneuver to maneuver supporting the scheme of fires.

This article discusses some of the lessons we learned during that process—lessons about the enemy, terrain and troops available; how the mission focused artillery fires, to include counterfire; and some *First Team* TTP developed for the fight.

Enemy

During this exercise, we fought an artillery-based opposing force (OPFOR) order of battle. The adversary was an army that has long used maneuver to exploit the effects of artillery. His fire

support system has three distinctive subsystems: the delivery means, observers and command, control and communications that link the two.

The OPFOR's delivery systems are dominated by two exceptional "long-shooters": the 170-mm Koksang gun and the 240-mm M1991 multiple rocket launcher (MRL). The Koksang gun's unclassified range of 50 kilometers and the 240-mm MRL's unclassified range of 43 kilometers provide the OPFOR a significant standoff range advantage.

In addition, we consistently faced more than 1,000 artillery pieces at any time and well over 2,000 in the exercise; we learned the OPFOR's significant numerical tube-to-tube advantage is the most critical factor in the correlation of forces matrix (COFM).

The OPFOR relies on relatively unsophisticated observers who straddle the

limited highway networks and call fires onto *his* high-payoff targets: multiple-launch rocket system (MLRS) launchers, target acquisition radars, air defense systems and attack helicopters along with our forward area rearm/refuel points (FARPs). Their observers and shooters proved to be the most difficult for friendly fires to destroy.

The enemy is quite adept at using burst transmissions and hard wire communications. The only way to adequately address this dismounted threat is to conduct continuous and aggressive counterreconnaissance throughout the AO.

The OPFOR also employs a significant dismounted infantry force to maximize the use of the restrictive terrain. A common tactic is to temporarily block the lead maneuver element, form a kill sack and call for all available fires from the regimental artillery groups (RAGs),



1st Cavalry Division Paladin (left) stands ready to provide indirect fires to mass combat effects with the M1A2 tank (top) and M2A2 Bradley (bottom).

divisional army groups (DAGs) and corps artillery groups (CAGs).

We knew we had a significant advantage in weapons systems and training; our Bradleys and Abrams tanks would decisively win any direct fire engagement. Therefore, we focused our tactics on defeating his most challenging killing system—artillery.

Terrain

What distinguishes this exercise theater more than any other factor is the restrictive terrain. Off-road maneuver by a heavy division is extremely limited, and the AO has few usable roads. A typical zone had two usable routes. This required friendly dismounts to clear the ridge lines that paralleled the friendly avenues of approach.

The terrain also prevents mutual support from adjacent units, an advantage we're accustomed to in other theaters. The lack of adequate road networks prevents the rapid maneuver of one unit to support another, and the narrowness of the defiles often prevents the maneuver commander from massing the fires of more than one company at a time. Consequently, the division commander rigorously enforced the guidelines found in *FM 71-100 Division Operations*, which discusses the importance of massing the effects of combat power as opposed to massing combat systems.

In this theater, the ability to mass combat effects is largely dependent on artillery, close air support (CAS) and attack helicopters. Properly positioned artillery provides mutual support, as opposed to the more traditional concept of mutual support by maneuver killing systems.

The restrictive terrain provides very few battery-sized artillery position areas because of slope and site-to-crest problems. Our division terrain team provided multi-spectral imagery processing system (MSIPS) and terra-base products that highlighted the few tenable firing positions. These products were extremely valuable as we templated likely enemy firing positions.

Troops Available

As the corps' main effort, the 1st Cavalry Division had some significant combat power in addition to its organic brigades. Attached were an armored cavalry regiment (ACR), a light infantry brigade, a military police battalion and an

attack aviation battalion. We also had two Field Artillery brigades reinforcing (R) and one Field Artillery brigade with a general support reinforcing (GSR) mission. These corps artillery assets brought six MLRS and three cannon battalions to the fight, significantly increasing our ability to mass fires.

Mission

To mass the effects of our combat power, we optimized the Field Artillery assets available to the division. Throughout the orders process, we highlighted the artillery organization for combat; we did not want the artillery organization for combat lost in an annex that only artillerymen read. The purpose was to paint a better picture of the combat power available to the brigade combat team (BCT) commanders and emphasize their responsibility for moving, positioning and securing the artillery.

Second, we determined that the only method of defeating the OPFOR artillery was to reduce its significant range advantage (standoff). Therefore, maneuvering artillery well forward in zone was critical. During the war-gaming process, we considered the movement and positioning requirements of all artillery before we considered maneuvering our ground brigades. We developed position areas for artillery (PAAs) and then built maneuver brigade graphics to support the artillery's occupation of those PAAs.

With the fielding of the M109A6 (Paladin) and MLRS, we no longer limited ourselves to the stationary, linear firing positions. For example, the position area for the Paladin is two kilometers by two kilometers and for MLRS, three kilometers by three kilometers.

Artillery was emphasized in the division commander's intent (see Figure 1). The intent statement from the our initial plan focused the BCT and captured the importance of artillery movement and positioning. Artilleryman Napoleon Bonaparte's Maxim Number 47 said, "The infantry, cavalry and artillery cannot dispense with each other. They must be positioned in such a manner as to always support each other."

The maneuver and positioning of artillery was further highlighted in the "Concept of the Operation" and "Tasks to Subordinate Unit." Here are two examples:

Concept of the Operation—3ACR AT-TACKS IN ZONE AS DIVISION MAIN EFFORT TO PENETRATE AND SECURE PAA 3A1.

Task to Subordinate Units—2BCT INTEGRATES 1-171 FIELD ARTILLERY BATTALION INTO UNIT MOVEMENT BEHIND THE LEAD TASK FORCE AND CLEARS PAA 2B1 FOR OCCUPATION NLT H+4.

By giving a specified task and purpose to the BCT commanders, we clearly portrayed the commander's intent and focused their efforts. The PAAs were selected during the war-gaming process, and responsibility for supporting them during various phases of the operation was assigned to the different BCTs.

We also recognized the importance of force protection for our critical fire support assets. The significant enemy special operations force (SOF) threat was oriented on killing high-payoff target systems, such as our MLRS and radars. Therefore, we devoted considerable protection assets to these units. Although it reduced the maneuver assets available for the close fight, we considered this force protection an investment in combat power.

Purpose: Attack to destroy OPFOR [opposing force] in zone to PL YYY [Phase Line YYY] and, on order, to PL ZZZ, leading to the isolation of (city).

Method: As the corps' main effort, we must be prepared to attack immediately upon passage-of-lines. Rapidly penetrate the enemy's defenses by infiltrating his security zone and quickly destroying three divisions. Aggressive reconnaissance, well forward, must identify and report enemy obstacles. Gain and maintain contact with the enemy. OUR MANEUVER IS PLANNED TO ADVANCE OUR ARTILLERY INTO SECURED FIRING POSITIONS FROM WHERE WE CAN ATTACK THE ENEMY ARTILLERY IN DEPTH AND REDUCE HIS RANGE ADVANTAGE. THIS ARTILLERY-ORIENTED MANEUVER, COMBINED WITH THE MASSING OF LETHAL AND NON-LETHAL FIRES, DEEP ATTACKS BY OUR MLRS, AH-64s AND AIR INTERDICTION WILL ALLOW US TO DEFEAT THE ENEMY'S ARTILLERY—HIS TACTICAL CENTER OF GRAVITY.

Endstate: Our division has destroyed the first and second operational echelons in zone, including all organic and supporting artillery. The division is positioned along PL YYY at 70 percent strength, prepared to conduct offensive operations to PL ZZZ.

Figure 1: 1st Cavalry Division Commander's Intent

We attached one mechanized platoon to our divisional MLRS battery and another platoon to protect the two Q37 radars. BCT commanders protected the Q36 radars. Our reinforcing brigades each came to us with six Avengers, four Chaparrals and two Allied infantry companies for protection. The aggregate cost for enemy high-payoff target protection was two mechanized infantry battalions.

The Counterfire Battle

Over the years, several means of providing counterfire have been established and tested, and most have been successful. Improvements in our capability to disseminate intelligence down to the division level have significantly enhanced our ability to target and fight the counterfire battle. Improved intelligence and AFATDS mean we can quickly prioritize and then digitally transmit fire missions.

These new capabilities caused us to shift our counterfire TTP development. We subdivided counterfire into two separate and distinct missions: proactive and reactive. The division artillery tactical operations center (TOC) executed proactive fires. The natural link to the division main command post (DMAIN) through the fire support element (FSE) facilitated the execution of these fires. One of our reinforcing units, the 75th FA Brigade from Fort Sill, was responsible for reactive fires.

Proactive Counterfire. This is defined as destroying the enemy artillery system *before* it can bring its fires to bear on the fight. The success of our proactive counterfire effort is directly attributable to the division's ability to manage the suite of intelligence assets and quickly incorporate targetable data into the decide-detect-deliver-assess (D³A) methodology. We found we could best accomplish this at the DMAIN. The key was the organization and management of data.

The ability of the commanding general, chief of staff, division artillery commander and aviation brigade commander to readily gain access to targetable data and make timely decisions was crucial to fighting the proactive counterfire fight. AFATDS played an important role. With its ability to quickly disseminate targets and fire plans and then allocate fire missions, AFATDS allowed us to attack critical enemy assets preemptively (see Figure 2).

Human intelligence (HUMINT) resources proved valuable; the combined

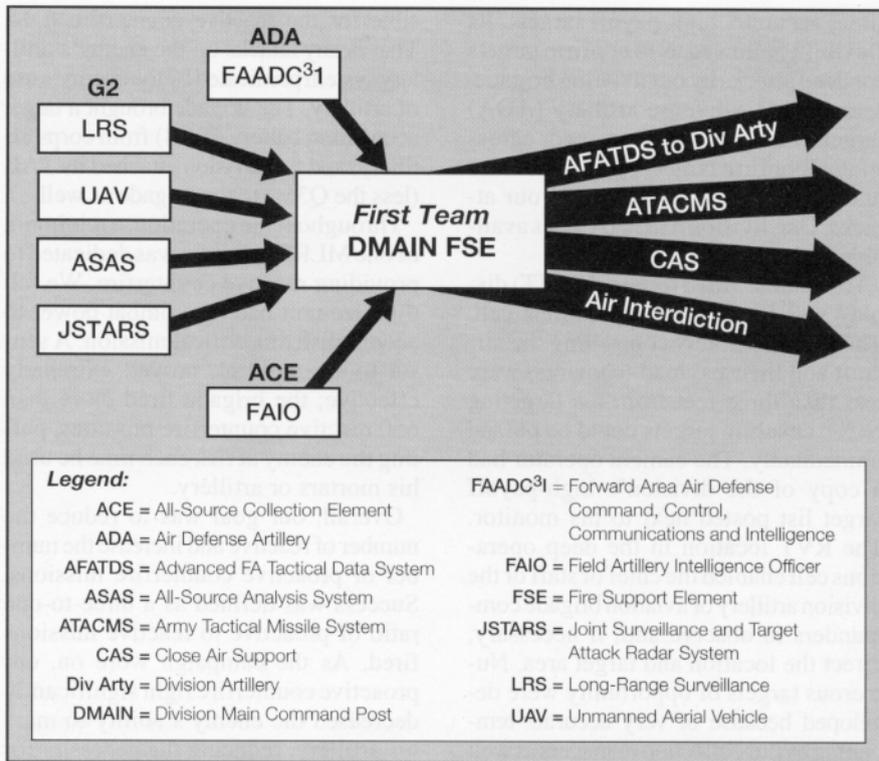


Figure 2: Proactive Counterfire Mission Flow

input from US and other SOF, the corps' long-range surveillance detachment (LRSD) and combat observation and lasing teams (COLTs) provided several key targets and instantaneous battle damage assessment (BDA) reports.

Positioning the LRSD liaison officer (LNO) in the DMAIN FSE enabled us to quickly attack targets. In one case, the enemy massed six battalions of 240-mm MRLs approximately 34 kilometers from our forward-most artillery units. A US SOF team observed this and reported it as a high-payoff target.

The report was received in the all-source collection element (ACE) in three minutes, and the Field Artillery intelligence officer (FAIO) passed it immediately to our targeting NCO. Although the target was out of range of our artillery, the targeting NCO passed it to corps as an Army tactical missile system (ATACMS) nomination. While waiting for the approval and clearance of airspace, the deputy fire support coordinator (DFSCoord) coordinated with the division artillery S3 and repositioned an MLRS unit to range the target. ATACMS missiles fired within 20 minutes, followed by MLRS rockets, destroying 57 240-mm MRLs.

The joint surveillance and target attack radar system (JSTARS) also contributed to our targeting capability during the exercise. JSTARS captures mov-

ing target indicators (MTIs) and displays and updates them graphically. We positioned the JSTARS ground station module (GSM) so the targeting NCO in the FSE could observe it.

JSTARS doesn't always provide targetable data, but it can cue other assets, such as unmanned aerial vehicles (UAVs), to confirm targets. JSTARS also provided targets for harassment and interdiction fires.

In one technique, the assistant division engineer analyzed the GSM's grid coordinate and recommended where to emplace scatterable mines in conjunction with a natural obstacle. After gaining approval to use family of scatterable mines (FASCAM), the minefield would be Field Artillery-delivered area denial artillery munition (ADAM) or remote anti-armor mines (RAAMS) munitions, helicopter-delivered Volcano, or Air Force-delivered Gator bombs. The effectiveness of the obstacle could be monitored by observing the MTIs on the JSTARS GSM.

Once the target was confirmed, the JSTARS GSM provided a 10-digit grid and allowed us to attack the enemy simultaneously and incrementally by CAS, attack helicopters and indirect fires. This technique proved to be extremely effective.

The UAV is an effective sensor platform for the division. It produced real-

time, accurate, high-payoff targets. Its flexibility allowed us to confirm targets for deep attacks by our aviation brigade, search for air defense artillery (ADA) targets along the ingress and egress routes, confirm targets by other sources and assess the effectiveness of our attacks. Our division had two UAVs available 16 hours a day.

The remote video terminal (RVT) display was in our deep operations cell. The pilots remotely controlling the aircraft and their payload (cameras) were less than three feet from the targeting NCO, ensuring targets could be passed immediately. The camera operator had a copy of the division's high-payoff target list posted next to his monitor. The RVT location in the deep operations cell enabled the chief of staff or the division artillery or aviation brigade commanders to observe and, if necessary, direct the location and target area. Numerous targets of opportunity were developed because of very accurate templating by our collection managers as well as real-time BDA. This enabled us to decide quickly and accurately if we needed to re-attack as part of the D³A process.

Also, the forward area air defense command, control, communications and intelligence system (FAADC³I) provided targets as it observed the taking off and landing of fixed- and rotary-wing aircraft. The air defense officer provided those grids to our targeting NCO, and we either attacked the aircraft immediately or confirmed them with UAVs.

A well-thought-out D³A process developed during war-gaming allowed us to decide in advance which targets warranted immediate engagement and which required confirmation. We must add, however, that we chose to err on the side of shooting questionable targets—as long as they were cleared—rather than not shooting targets.

The DMAIN FSE was the coordinating node for all targets and truly fought in a proactive manner. The AFATDS sent digital transmissions to the division artillery fire control element (FCE), which immediately passed them to a R or the GSR brigade. Additionally, AFATDS tracked active and inactive missions on the screen. AFATDS's ability to assign values to targets, which ensured rapid attack, coupled with improved communications enabled us to mass fires on targets with remarkable speed and precision.

Reactive Counterfire. The 75th Field Artillery Diamond Brigade was respon-

sible for the reactive counterfire fight. That is any attacks on the enemy's artillery system predicated by the enemy's use of artillery. The brigade brought a target acquisition battery (TAB) from corps artillery, and the division attached its TAB (less the Q36s) to the brigade as well.

Throughout the operation, a minimum of one MLRS battalion was dedicated to providing reactive counterfire. We felt this size unit had the combat power to accomplish this critical mission. A sensor-to-shooter link proved extremely effective; the brigade fired more than 650 reactive counterfire missions, putting the enemy at risk each time he used his mortars or artillery.

Overall, our goal was to reduce the number of reactive and increase the number of proactive counterfire missions. Success was defined as a three-to-one ratio of proactive to reactive missions fired. As the campaign wore on, our proactive counterfire fight significantly decreased the enemy's ability to mass his artillery, reducing the necessity for reactive counterfire. The dual reactive and proactive counterfire fights systematically defeated the enemy's indirect fire capability.

Fire Support TTP

Our inherent intelligence capabilities at the division level coupled with the digitization of the fire support system using AFATDS caused us to develop and further refine some TTP. Although none of these are new concepts, our ability to refine and execute them improved substantially.

Artillery Raids. As stated in *FM 6-20 Support in the AirLand Battle*, "Maneuver is the movement of forces in relation to the enemy to secure positional advantage. It is the means of concentrating forces at the critical point to achieve surprise, psychological shock, physical momentum and moral dominance which enable smaller forces to defeat larger ones."

Our concern over the enemy's artillery range advantage forced us to assume some risk and maneuver artillery to conduct raids. The criteria for determining whether or not to conduct the raid was if we could locate high-payoff targets accurately enough. Before crossing the line-of-departure in our initial attack, we discovered 240-mm MRLs that were about 12 kilometers out of range. We determined the potential payoff was well worth the risk and em-

ployed an MLRS battalion from our other reinforcing brigade (45th Field Artillery Brigade, Oklahoma Army National Guard) to conduct the raid.

After refining the targets to be attacked, we selected PAAs that would allow us to close the range disparity and destroy the targets. Our first concern was force protection for the MLRS battalion—we knew we had to husband our critical long-range artillery assets.

As part of our counterreconnaissance force, we infiltrated two companies of light infantry into the enemy's territory. They had the additional task of identifying tenable PAAs from which to fire during the raid.

The MLRS battalion had its habitual force protection package of two Avengers, two Chaparrals and one infantry company. This was augmented with a mechanized task force and an engineer company whose sole purpose was to clear the route and PAA for the raid unit.

The result of the raid was the destruction of 10 240-mm MRLs, 57 combat vehicles, eight mortars and six ADA systems with no loss of friendly artillery. From this mission we established new TTP, and incorporated standing operating procedures (SOP) into the division tactical SOP (TACSOP).

Penetration Box. This concept was first developed by Lieutenant General Thomas A. Schwartz, the III Corps commander, when he commanded the 4th Infantry Division (Mechanized) at Fort Carson, Colorado. The penetration box focuses all intelligence and fire support resources at the critical point in time and space to destroy the enemy in order to gain a decisive advantage.

During initial war-gaming, the pen box is established at the intended point of penetration of the enemy defenses. Its exact location is continually refined, based on the enemy's disposition. The division commander's collection capability then identifies all targets in the area. Finally, all fires available in the division and corps are positioned to attack those targets with the end state's being the rapid defeat and penetration of the enemy.

Pen box fires are executed in three phases (see Figure 3). Phase I is the attack of all enemy artillery that can influence the pen box, such as the artillery associated with the RAGs, DAGs, CAGs and, sometimes, battalion artillery groups (BAGs). This requires forward positioning of MLRS assets and the use of a nominal number of

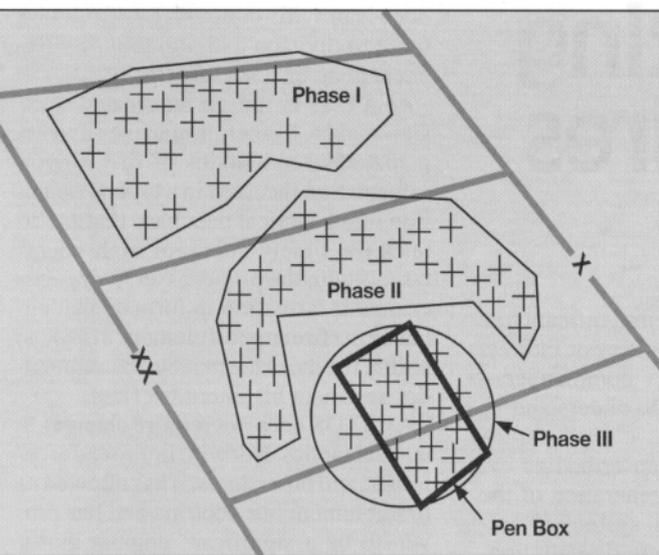


Figure 3: Penetration Box

ATACMS from corps artillery. This phase generally lasts 30 minutes, depending on the number of targets.

Phase II fires attack all command and control nodes, counterattack forces and observers in and around the pen box that can influence friendly maneuver. Phase III is an intense attack of all targets in the pen box with cannon and MLRS fires to neutralize killing systems. This phase lasts approximately one hour. The timing is such that the friendly maneuver units should be within direct fire range as the last round of Phase III fires lands.

The orchestration of intelligence assets and the synchronization of COLTs and Kiowa Warriors for Copperhead fires was a monumental task. The planning was conducted in the deep operations cell under the guidance of the chief of staff and division artillery commander and executed from the division tactical command post (DTAC).

One of the essential elements of our pen box methodology was the role of the maneuver brigade commander. He selects the exact grid locations for the pen box and establishes and executes the trigger to begin the planned two-hour program of fires.

The results of our pen box execution is equally as important as the process we used. The first pen box we fired was in support of the ACR's attack of the enemy's main defensive belt. Sixteen units fired 82 missions (2,361 rockets) and destroyed 28 artillery systems, 96 combat vehicles, 32 ADA systems and six antitank systems. We eliminated several of the enemy killing systems but, more importantly, allowed the ACR to maneuver quickly through the main de-

fensive belt with no loss of momentum or combat power. This rapid maneuver disrupted the enemy's tempo and allowed us to continue to maneuver artillery well forward to attack his long-range systems.

AFATDS played a key role in this process. Its ability to simultaneously prepare fire plans and conduct current operations and then quickly disseminate those plans allowed

us to fight the current fight and prepare for the next one.

Red Team Rain. The last TTP developed and refined was Red Team Rain. The division initially developed this concept to preclude the enemy from using a blocking force to temporarily halt our maneuver brigades and then kill us with his artillery.

Red Team Rain consisted of indirect fires from all assets available to the division. This included all direct support (DS), R, GSR and general support (GS) units supporting the division, except for the one MLRS battalion dedicated to executing reactive counterfire. Initially, we executed Red Team Rain to maintain momentum and deny lucrative targets to the OPFOR by engaging his blocking force.

We expanded the Red Team Rain concept to the defense, engaging enemy maneuver forces massing for the attack. Our massing artillery fires can destroy entire enemy battalions and regiments. One Red Team Rain mission during our exercise destroyed 25 tanks, 46 BMPs, 18 ADA systems and 387 troops—a regiment.

The cost of executing this mission significantly drains available artillery and has the potential to disrupt established fire plans. Because of this, we established a strict procedure for its use. First, the target must be stationary and be a threat to the division's mission. Second, a brigade commander must request it on the division command net (FM). Third, only the commanding general or the assistant division commander for maneuver can approve it. We fired Red Team Rain on 13 occasions and

destroyed a minimum of a battalion of enemy combat vehicles each time.

Conclusion

The exercise discussed in this article enabled us to hone our warfighting skills, particularly in terms of integrating fire and maneuver. We hesitate to draw too many conclusions from the results of a computer simulation, but we are convinced that our emphasis on moving and positioning artillery is appropriate.

Counterfire was the most critical fire support task. Our emphasis on force protection at the division level, harnessing and focusing intelligence assets and the digitization of the fire support system allowed us to proactively and aggressively attack enemy forces while reducing friendly losses. Our habitual training relationship with the corps artillery reinforced this capability.

All divisions have TTP, such as artillery raids, pen boxes and Red Team Rain. These were particularly successful for us because of the time dedicated to integrating them into the campaign. Across the force, we must continue a dialogue as we develop TTP to maximize technology for all combat functions.



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