

SPOTLIGHT 20-1

Massed Fires, Not Organic Formations

The Case for Returning Field Artillery Battalions to the DivArty

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With artillery, war is made.
—Napoleon

The U.S. Army needs to realize that in large-scale combat operations (LSCO) against competent adversaries, its divisional field artillery battalions should be controlled by a division artillery (DivArty) headquarters rather than by brigade combat teams (BCTs). To make the case for this change, this essay will trace the history of how U.S. field artillery has evolved since its inception; making the case requires understanding why field artillery battalions became organic to BCTs in the first place.

This essay is not a call to return to the past—rather, it is a call to prepare for the future. If the joint force is to mass fires against a peer adversary, centralized control will be important, just as it was in World War II. Now, with the need to converge fires and effects across multiple domains, it is even more essential. In such an environment, the DivArty will be the “go to” headquarters for Multi-Domain Operations (MDO) at the division level.

An Evolving Artillery Capability: from the American Revolution through World War I

The roles, missions and organization of American field artillery are a direct reflection of evolutions in technology, procedures, wartime missions and the types of adversaries that the U.S. Army has faced since its founding. These factors determined the location of field artillery in the U.S. Army. An additional factor is the understandable desire of maneuver commanders to own what they need for success in their brigade battle, coupled with keeping what they have.

Revolutionary War. The role of artillery—and its location in U.S. formations—has been evolving ever since Henry Knox hauled heavy cannons, captured from the British at Fort Ticonderoga, to General Washington in 1776. Knox’s cannons were direct-fire weapons with modest range (1,000–1,200 yards) and fired solid shot, explosive-filled cannon balls, large diameter grapeshot, smaller diameter cannister shot, various shrapnel shells and

ISSUE

To prevail in large-scale combat operations against competent adversaries, U.S. Army divisional field artillery battalions should be controlled by a division artillery (DivArty) headquarters, rather than by brigade combat teams (BCT).

SPOTLIGHT SCOPE

- Traces the evolution of U.S. field artillery since its inception.
- Describes the impact of modularity, driven by the demands of extended counterinsurgency operations, on the U.S. Army’s ability to train for and fight peer adversaries.

KEY POINTS/IMPLICATIONS

- The issue with keeping field artillery battalions in BCTs is that it violates one of the fundamentals of fire support: *never keep artillery in reserve*.
- The artillery’s *sine qua non* is its ability to mass fires.
- The advantage of the DivArty is that it ensures that all the fires that can range the fight are available to support maneuver commanders across an extended battlefield.

chain shot. These guns tipped the scale in the siege of Boston (April 1775–March 1776). They were emplaced on a commanding position on the fortified Dorchester Heights above the city and harbor, threatening the ability of the British to supply their garrison and the loyalists in Boston. In the face of this artillery threat, British General William Howe withdrew his forces to Halifax, Nova Scotia.

By war's end, there was an artillery company assigned to each infantry brigade for tactical control and a larger number of pieces in the artillery park that supported the Army. The parent artillery regiments that provided cannon to the infantry also maintained administrative control over them. On occasion, however, artillery was pulled from the brigades and its combined fires massed to great effect, as during the Battle of Monmouth in June 1778.¹

Mexican War. The U.S. Army took better artillery into the Mexican War of 1848 than it had during the Revolution. Bronze began replacing the heavier iron cannons, and stronger single-trail gun mounts replaced twin trails. This made the cannons sturdier, lighter and more maneuverable. Nevertheless, artillery remained a direct-fire weapon with two-gun detachments assigned to brigades. The artillery park was abandoned; instead, guns not with the brigades operated independently, responding to threats as needed.²

A pivotal event—the May 1846 Battle of Palo Alto—changed how Americans viewed artillery. Brevet Brigadier General Zachary Taylor, a great believer in the primacy of infantry, was convinced by his artillerists to mass his cannons in the same way Napoleon had, albeit on a smaller scale. This massed fire of cannons online decimated Mexican infantry. Taylor later recalled that his artillery “was the arm chiefly engaged, and to the excellent manner in which it was maneuvered and served is our success mainly due.”³ As historian Janice McKenney wrote, Palo Alto “foreshadowed the important role artillery and massed fire was to play in the Civil War.”⁴

Civil War. During the Civil War, cannon technology progressed marginally in terms of range and it remained a direct-fire weapon. Nevertheless, the tendency toward centralizing the field artillery took hold in both the Union and Confederate armies. Field artillery units were increasingly assigned to divisions and corps, rather than to brigades, where their massed fires could be exploited.⁵ Confederate Colonel Edward Porter Alexander wrote about the rationale for this move in his post-war memoirs: “It would have been a decided step in advance had we inaugurated, so soon, a battalion organization of several batteries. We came to it in about a year, but meanwhile our batteries had been isolated and attached to infantry brigades. So, they fought singly, and in such small units artillery can do little.”⁶

World War I. World War I saw incredible increases in the diversity, range and lethality of cannons, ranging from 75mm field guns to 12-inch railway guns. New means of executing accurate indirect fire, observation (airplanes and balloons) and targeting (sound and flash) complemented these developments.⁷ Centralized field artillery units at division, corps and Army levels



A battery of field artillery participate in a mock battle on Franklin Field at the University of Pennsylvania, 12 June 1917.

¹ Janice E. McKenney, *The Organizational History of Field Artillery: 1775–2003* (Washington, DC: United States Army Center of Military History, 2007), 3–16.

² McKenney, *The Organizational History of Field Artillery*, 41–46; Boyd L. Dastrup, *King of Battle: A Branch History of the U.S. Army's Field Artillery* (Fort Monroe, VA: Office of the Command Historian, United States Army Training and Doctrine Command, 1993), 71–81.

³ Quoted in McKenney, *The Organizational History of Field Artillery*, 41.

⁴ McKenney, *The Organizational History of Field Artillery*, 41.

⁵ McKenney, *The Organizational History of Field Artillery*, 55–59.

⁶ Edward P. Alexander, *Military Memoirs of a Confederate: A Critical Narrative*, ed. T. Harry Williams (1907; repr., Bloomington, Indiana: University of Indiana Press, 1962), 14; quoted in McKenney, *The Organizational History of Field Artillery*, 63.

⁷ Dastrup, *King of Battle*, 167.

provided either unobserved or observed fire against priority targets and fired rolling barrages in front of infantry formations to support their advance. Despite these advances, observed fire in close support of maneuver—where the gun crews could not sight directly on the target—was dependent both on reliable communications between the observer and the artillery unit and on the mobility in difficult terrain of mostly horse-drawn field pieces. As McKenney notes: “What both sides lacked during the war was a means of directing artillery fire efficiently. Telephone wires were cut, runners took time and messages were sometimes insufficient.”⁸ This reality made close support of the infantry tenuous and, as historian Boyd Dastrup wrote, the unreliability of indirect fire systems of the day “caused the infantry to adopt accompanying artillery as a means of having quick, accurate support . . . solving the communication problem and developing field artillerymen were imperative before indirect fire could be truly exploited.”⁹



American howitzers shell retreating German forces near Carentan, France, 11 July 1944.

Massed U.S. Field Artillery Dominates the World War II Battlefield

During the period between the two World Wars, the advent of tactical radios, motorization and mechanization solved the communication and mobility challenges that had plagued reliable close support of maneuver units in World War I. Mobility was provided by truck, tractor and self-propelled gun mounts—as compared to the German army, which still relied largely on horses to move its artillery. Most important, however, is that American field artillery officers developed the technical means to mass the fires of multiple battalions accurately—and rapidly—using telephone and radio networks. With this crucial innovation, the fires of all artillery tubes within range of a target could engage it simultaneously. This enabled American commanders to place devastating amounts of fire on their adversaries.¹⁰ Author Frank Comparato notes that a good example of this volume of fire was in Patton’s Third Army, which eventually had 1,464 field pieces. The Third Army fired some 6 million rounds and converted Patton to indirect fire, although he did not fully understand how the artillery units managed, noting it must be “by methods known only to God and the Artillery . . . fire was placed on target.”¹¹ At the end of the war, Patton stated: “I do not have to tell you who won the war. You know our artillery did.”¹²

Particularly effective was the time on target (TOT) mission, whereby the fires across corps artillery and DivArty massed their guns on a single target—often 10 or more battalions—with all shells arriving nearly simultaneously on target.¹³ This was devastating, as Comparato writes, because “the TOT mission often denied to the enemy the bare 10-second’s time to jump into a foxhole—and often Allied troops were able to walk in ‘without a scratch.’”¹⁴

At the end of the war, General R. O. Barton, commanding the 4th Division, reminisced that:

With this crucial innovation [advent of tactical radios and motorization and mechanization], the fires of all artillery tubes within range of a target could engage it simultaneously.

⁸ McKenney, *The Organizational History of Field Artillery*, 121.

⁹ Dastrup, *King of Battle*, 176.

¹⁰ McKenney, *The Organizational History of Field Artillery*, 150.

¹¹ Frank E. Comparato, *Age of Great Guns: Cannon Kings and Cannoneers Who forged the Firepower of Artillery* (Harrisburg, PA: Stackpole, 1965), 252.

¹² McKenney, *The Organizational History of Field Artillery*, 187.

¹³ Comparato, *Age of Great Guns*, 254.

¹⁴ Comparato, *Age of Great Guns*, 254.

The Artillery was my strongest tool. . . . I repeatedly said that it was more a matter of the infantry supporting the artillery than the artillery supporting the infantry. This was an overstatement, but not too much of one. . . . I wish I knew the countless times that positions were taken or held due solely to TOT's. I also wish I knew the innumerable times . . . when counterattacks were smeared by the artillery.¹⁵

The massing of fires, while a technical feat, also relied on artillery commanders exercising tactical control of field artillery firing units. Through careful positioning, the maximum number of guns would be available to support maneuver formations, execute counterfire and hit other high-priority targets.¹⁶ Furthermore, As General Courtney H. Hodges, commander of the First Army recalled,

Of the principal arms that could be brought to bear directly on the enemy, infantry, armor, and air were seriously handicapped by the weather and terrain. Through all, however—day and night, good weather and bad—the flexibility and power of our modern artillery were applied unceasingly.¹⁷

Post-World War II. The World War II methods for tactical and technical control of field artillery were the seminal experience for U.S. field artillery for the generations that followed. Although automation, digitization, precision guidance, global positioning systems, improved radars and other innovations advanced the ability of field artillery units to support maneuver forces, its *sine qua non* remained the ability to mass fires across the force. **The branch had one imperative: field artillery is never in reserve.**

Consequently, artillery units, rather than being assigned to maneuver brigades (with a few exceptions, e.g., the howitzer batteries with armored cavalry regiments), were provided tactical control by their parent field artillery formations and missions that determined their priority of fires.¹⁸

■ Modularity to Meet the Demands of Persistent Conflict

In the aftermath of Operation Iraqi Freedom, the Army has faced two protracted insurgencies in Afghanistan and Iraq. In 2003, Army Chief of Staff Pete Schoomaker reorganized the Army to be based on BCTs rather than divisions. Schoomaker believed that the central flaw in the division-based system was that “tailoring and task-organizing our current force structure for such operations renders an ad hoc deployed force and a non-deployed residue of partially disassembled units, diminishing the effectiveness of both.” He was also concerned that “right now, all these brigades are different—the number of helicopters in them, the number of units, sub-units within these brigades—and it’s extraordinarily inefficient.” He believed that modularity would be a more efficient way of organizing a force with more standardized brigades, enabling direct interchangeability when it is necessary to replace a unit.” This would “increase the number of BCTs available through



U.S. Soldiers assigned to the 115th Field Artillery Brigade fire rocket-propelled rounds from a truck during an exercise with Kuwait Land Forces at their Udairi Range, 10 February 2020. The 115th Soldiers from the Wyoming-based brigade deployed to support Task Force Spartan, which strengthens defense relationships, builds partner capacity and jointly deters regional aggression (U.S. Army photo by Master Sergeant Jeff Lowry).

[The Artillery's] sine qua non remained the ability to mass fires across the force.

¹⁵ Comparato, *Age of Great Guns*, 254–255.

¹⁶ McKenney, *The Organizational History of Field Artillery*, 186.

¹⁷ General Courtney H. Hodges, quoted in Joseph R. Reeves, “Artillery in the Ardennes,” *Field Artillery Journal*, (March 1946): 138; quoted in McKenney, *The Organizational History of Field Artillery*, 186.

¹⁸ McKenney, *The Organizational History of Field Artillery*, 190–195.

improved force management” and create more time between deployments for a stretched Army.¹⁹

Because of modularity, divisional non-maneuver battalions (e.g., military intelligence, signal, etc.) were decomposed and assigned to BCTs. This also happened with the DivArty, whose battalions were made organic to the BCT. This was appropriate for the wars that the United States was in at the time—counterinsurgencies (COIN) in Afghanistan and Iraq. Indeed, the need for fires in these wars was greatly diminished from earlier conflicts; they instead demanded precision to prevent civilian casualties and collateral damage. Skills across the artillery community diminished, as documented in a 2008 white paper for the Army Chief of Staff by three former BCT commanders (co-authored by one of this essay’s contributors), titled “The King and I: The Impending Crisis in Field Artillery’s ability to provide Fire Support to Maneuver Commanders.” This was a mere five years into modularity. Most telling was their conclusion: “Modularization places responsibility for fire support training on maneuver commanders who are neither trained nor resourced to perform these tasks.”²⁰ Furthermore, they lamented:

There is no competent higher FA [field artillery] headquarters to coordinate resources and enforce standards. [There are no more Corps Arty or Div Arty HQs and the number of FA Brigades has been reduced]. This leaves battalion commanders to handle ammunition management, doctrinal review, new equipment training, TACP integration, JAAT Training, MORTEP support, and FCX coordination, among other responsibilities. . . . Units are seriously challenged conducting Combined Arms Life [sic] Exercises in support of maneuver due to poor level of FO training, fire direction, and gunnery skills.²¹

Much of this degradation in skills was unavoidable, given the combat tasks facing BCTs in Iraq. Nevertheless, artillery skills waned, and field artillery Soldiers were employed—absent a fire support mission—as ground holders, convoy escorts and in service to other missions that had to be accomplished by BCTs with the Soldier resources at hand. The white paper also warned: “The once mighty ‘King of Battle’ has been described by one of its own officers as a ‘dead branch walking.’”²² The extent of this was also captured in a 2017 Fires Center of Excellence briefing that noted several challenges to the branch, specifically that “fires core competencies have atrophied.”²³

■ “All Available” Is Important for Maneuver Commanders

While appropriate for the nature of the COIN conflicts the U.S. was in, **the fundamental problem with placing field artillery battalions in BCTs is that it violates one of the fundamentals of fire support: never keep artillery in reserve.** In high-intensity combat of fire and maneuver envisioned in LSCO, this will not work. Armored and infantry brigades are positioned based on terrain considerations and time/distance calculations to enable them



Soldiers fire an artillery round from an M777 Howitzer at the National Training Center in Fort Irwin, California, 5 March 2020 (U.S. Army photo by Specialist Kamryn Guthrie).

“Modularization places responsibility for fire support training on maneuver commanders who are neither trained nor resourced to perform these tasks.”

The King and I: The Impending Crisis in Field Artillery’s ability to provide Fire Support to Maneuver Commanders, 2008.

¹⁹ Stewart E. Johnson et al., *A Review of the Army’s Modular Force Structure* (Santa Monica: RAND Corporation, 2012), 11.

²⁰ Sean MacFarland, Michael Shields and Jeffrey Snow, “The King and I: The Impending Crisis in Field Artillery’s ability to provide Fire Support to Maneuver Commanders,” white paper, 2008, 2, <https://www.npr.org/documents/2008/may/artillerywhitepaper.pdf>.

²¹ MacFarland, Shields and Snow, “The King and I,” 2.

²² MacFarland, Shields and Snow, “The King and I,” 1.

²³ Briefing in authors’ possession.

to mass at the decisive point against the enemy. In certain circumstances, it may make sense to keep one or more of them in reserve—out of range of enemy fires and ISR (intelligence, surveillance and reconnaissance) assets. In contrast, artillery assets are positioned based on survivability considerations and their ability to range targets *across the battlespace*. Thus, the artillery available to the DivArty also includes that of field artillery brigades external to the division and coordinated through tactical missions, i.e., direct support, reinforcing, general support reinforcing and general support. **This big difference between positioning considerations often leads to putting artillery far from its habitually supported maneuver unit to achieve coverage and the ability to mass fires across the battlespace.**²⁴

The imperative to mass fires will become even more pronounced as the Army fields new cannons, rockets and missiles with greater ranges and more lethal munitions. In the near future, even more fires will be available to maneuver commanders across an extended battlefield. This is the clear advantage of the DivArty—it ensures **that all the fires that can range the fight are available**. The DivArty (and other force artillery headquarters) also fuses targeting information—which will become ever more sophisticated as future Army programs deliver new capabilities to find the enemy.²⁵

A BCT commander lacks the means and the situational awareness to integrate his organic field artillery battalion’s fires outside of his area of operation (AO) with other units’ fires. This is in addition to requirements to integrate Army and Air Force aviation, targeting intelligence, electronic warfare and air and missile defense. The division is the first echelon at which a commander can do this.²⁶

Some may be concerned about fire support for the BCTs if DivArty are reformed in full. They should not be. This arrangement would benefit maneuver units most of all. In addition to freeing the BCT staff from worrying about the unique requirements of an artillery battalion, the BCT would enjoy better fire support when it matters most.²⁷

■ Bring Back the DivArty

The ability to rapidly shift reinforcing fires and integrate other effects, accepting risk in one AO to achieve success in another, is how a division commander contributes to a BCT’s fight. It is how to change divisions “from headquarters to formations,” improve the synergy between echelons and win on future battlefields.²⁸ Institutional learning efforts to restore field artillery competence are being addressed at the Field Artillery School at Fort Sill. But schoolhouse learning is not enough to reinvigorate the fire support system if direct support field artillery battalions remain organic to BCTs.

More important than the training and administrative burdens placed on the BCTs is the erosion of the principal skill on which the U.S. field artillery prided itself and with which it dominated its enemies in



Soldiers from Charlie Battery, 1-78 Field Artillery prepare and fire 155mm rounds from the M109A6 Paladin at a training range in Fort Sill, Oklahoma (U.S. Army photo by Luke Allen).

²⁴ Lieutenant General Sean MacFarland, USA, Ret., “DivArty Paper,” email to authors, 8–13 January 2020.

²⁵ MacFarland, “DivArty Paper.”

²⁶ MacFarland, “DivArty Paper.”

²⁷ MacFarland, “DivArty Paper.”

²⁸ MacFarland, “DivArty Paper.”

conventional combat: **timely massed fires**. Without a DivArty headquarters, it will be difficult for maneuver commanders to exercise the required skills with its subordinate and battalions. As was the case in World War II—the last time the Army confronted a competent peer adversary in LSCO—the **massed fires coordinated by DivArty and fire brigade headquarters are crucial to winning the fight**. Again, as Colonel Alexander realized during the Civil War, keeping artillery battalions in BCTs will have a deleterious effect, because, “in such small units artillery can do little.”²⁹

Most important, however—the world has changed since the Army adopted modularity. The potential adversaries detailed in the National Defense Strategy (China, Russia, Iran and North Korea) demand Army proficiency in LSCO and in MDO.³⁰ These are not operations where BCTs control an AO against irregular adversaries. These are offensive and defensive operations against increasingly capable adversaries that will require unity of effort across an extended battlespace.³¹ Just as the Army adapted to the threats and operational realities that demanded modularity—including making field artillery battalions organic to BCTs, it must again adapt to changing strategic conditions. The future requires new solutions to:

- assure responsive fires across the theater of operations;
- improve fire support coordination at the division and above echelons and for the joint force;
- maximize the fires available to maneuver formations;
- ensure no artillery is ever in reserve; and
- restore the competencies the field artillery has always been renowned for in the past through better training.

It is time to return the BCT field artillery battalions to the DivArty.



Senior Maneuver Commander Perspective

To ensure that this essay did not reflect only the views of field artillery officers, the authors provided drafts to several distinguished retired maneuver generals. These included Lieutenant General Sean MacFarland (former commander of III Corps); and General James D. Thurman (former commander of U.S. Forces Korea and U.S. Forces Command). Each provided useful comments and agree with the conclusion that field artillery battalions should be removed from BCTs and put back in DivArtys.



Staff Sergeant Jesse Reynolds, a Multiple Launch Rocket System crew member, assigned to 1st Battalion, “The Steel Warrior Battalion,” 14th Field Artillery Regiment, 75th Field Artillery Brigade, Fort Sill, Oklahoma, looks out the hatch of an M142 High Mobility Artillery Rocket System (HIMARS) during a field training exercise on 14 February 2020, on Fort Sill. The Steel Warrior Battalion continues to train in supporting worldwide contingency as III Corps and Fort Hood’s only airmobile long-range precision fires capabilities (U.S. Army photo by Sergeant Dustin Biven).

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²⁹ Alexander, *Military Memoirs of a Confederate*, 14.

³⁰ Headquarters, Department of Defense, *Summary of the National Defense Strategy: Sharpening the American Military’s Competitive Edge*, Washington DC, 2018; U.S. Army Training and Doctrine Command Pamphlet 525-3-1, *The U.S Army in Multi-Domain Operations 2028*, 6 December 2018; and David E. Johnson, *Shared Problems: The Lessons of AirLand Battle and the 31 Initiatives for Multi-Domain Battle* (Santa Monica: RAND Corporation, 2018).

³¹ David E. Johnson, *The Challenges of the “Now” and Their Implications for the U.S. Army* (Santa Monica: RAND Corporation, 2016).



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