The Division Artillery: Linking Strategy to Tactics

A Monograph

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Abstract

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In 2016, with his initial message to the force, Chief of Staff of the Army, GEN Mark Milley established readiness as the top priority for the US Army. Within the field artillery branch, the implication was how to achieve the highest level of readiness, while also preparing for ground combat against a near peer competitor. Additionally, the deterioration of the field artillery in the twelve years of persistent low intensity conflict created a sense of urgency within the Army that spawned the reestablishment of the division artillery. With the subsequent suspension of the reestablishment of the division artillery, there has been confusion on how to best achieve readiness and prepare for future combat.

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Acronyms

BCT	Brigade Combat Team
CCA	Combat Command A
CCB	Combat Command B
CCC	Combat Command C
FDC	Fire Direction Center
FDU	Force Design Update
FORSCOM	US Forces Command
1AD	First Armored Division
1ID	First Infantry Division
1MEF	First Marine Expeditionary Force
2ACR	Second Armored Cavalry Regiment
34ID	Thirty-Fourth Infantry Division
9ID	Ninth Infantry Division

Introduction

Historical Context and Importance of Study

Since September 11, 2001, the US Army has played a critical role in operations globally stemming from the 9-11 attacks in Washington DC, New York, and Pennsylvania. After the initial invasions into Afghanistan and Iraq, respectively, the US Army quickly transitioned to stability operations, where the skills and training needed to conduct major combat operations against a near peer competitor atrophied.[1] This has been particularly evident within the field artillery. Over the past fifteen years, the ability for field artillery units to deliver accurate and timely fires synchronized with maneuver and aviation support has greatly diminished.

Within the context of the Global War on Terror, the 2016 Army Posture statement highlights readiness as the top priority of the United States Army. In his initial message to the force, Chief of Staff of the Army, GEN Mark Milley states "A ready Army is a manned, trained, equipped, and well-led force that can conduct joint missions to deter and defeat a wide range of state and non-state actors. No American soldier should ever go to combat unready for the brutal and unforgiving environment of ground combat."[2] This strategic guidance from the Chief of Staff of the Army has far reaching implications for Army organizations. Specifically, within the field artillery branch, the implication is how to achieve the highest level of readiness, while also preparing for ground combat against a near peer competitor.

In April 2014, the Army re-established the division artillery, a brigade level field artillery headquarters. Its stated mission, not yet codified in doctrine, but outlined in a Fires Center of Excellence white paper, is to "fight fires for the division" and to "provide training certification

[1] Sean MacFarland, Michael Shields, and Jefferey Snow, *The King and I: The Impending Crisis in the Field Artillery's Ability to Provide Fire Support to Maneuver Commanders*, accessed August 8, 2016, www.npr.org/documents/2008/may/artillerywhitepaper.pdf

[2] Mark Milley, 2016 US Army Posture Statement to Congress, April 2016, 1-2.

standardization of all field artillery units in the division."[3] This is further outlined in the US Forces Command (FORSCOM) Division Artillery implementation order addressing declining proficiency levels, the ability to mass and synchronize, since the advent of modularity in 2003 and the decline of artillery skills as a result of 'in lieu of' missions in support of the Global War on Terror.[4] In 2015, the Army suspended the phased reestablishment of the division artillery. This decision has caused uncertainty and confusion about the role of the division artillery. Research findings and historical context demonstrate that the role of the division artillery will continue to be the link connecting the Chief of Staff of the Army's strategic guidance to tactical action.[5]

Prior to World War II, the US Army went through a period of transformation. The prewar doctrine, modernization and organizational updates were significant and laid the groundwork for implementation in the Battles for Kasserine Pass. The failure and lessons learned in the Kasserine Pass campaign set the stage for further reform. Forty years later, observations from the Yom Kippur War drove transformation and set the conditions for the success in Operations Desert Shield and Desert Storm. Post 9-11, the environment changed yet again, and with it, so did doctrine and organization. Proficiency in conducting major combat operations dropped. Currently, the way to regain proficiency and readiness is through going back to lessons learned and improving on this base of knowledge. With regard to reduced proficiency within the Field

[3] US Army Fires Center of Excellence, *DIVARTY White Paper*, May 2014, 14.

[4] US Army Forces Command, *US Army Forces Command Division Artillery Implementation Order*, April 9, 2014, 2.

[5] Historically known as "non-divisional units", or what are now known as Field Artillery Brigades will not be discussed. They generally consist of Multiple Launch Rocket System (MLRS) battalions and High Mobility Artillery Rocket System (HIMARS) battalions. Field Artillery Brigades generally support a corps or field army. The principal missions of non-divisional artillery were the neutralization or destruction of hostile artillery (counterbattery fire), destruction of hostile defenses, long-range interdiction fire, and reinforcement of division artillery fires. This mission has generally remained unchanged between WWII and today.

Artillery, the burden rests on division artillery as the mechanism for increasing proficiency. Increased proficiency logically contributes directly to readiness.

Additionally, the division artillery has a role in improving not only the "supply" side of providing fires, but also the education of maneuver leaders on the importance of combined arms maneuver, getting at what retired Brigadier General Huba Wass de Czege argued for "improving the demand side of fire support."[6] Coming full circle, the army saw an overreliance on tanks and direct fire in WWII, initially in the Kasserine Pass campaign and now sees an overreliance on maneuver in contemporary environment.

Methodology

In draft US Army doctrine, the role of the division artillery is to facilitate the training, manning, equipping, of field artillery battalions, as well as ensure the professional development of field artillery soldiers and leaders.[7] In future conflict, specifically in major combat operations against a near peer adversary, the division artillery will be vital in synchronizing and delivering accurate and timely fires.

Historical case studies illustrate the role and effectiveness of division artilleries in both major combat operations and as a part of stability operations. Section one includes a case study comprised of the Battles of Kasserine Pass in World War II. An analysis of the doctrine used during World War II is integrated into the case study. Section two consists of a case study of Operations Desert Shield and Operation Storm. An analysis of the AirLand Battle doctrine used during the operation is also integrated with the case study. Section three examines the effects of modularity and operations in support of the operations in response to the 9-11 attacks, and

[6] Huba Wass de Czege and Michael Cuff, "Improving the Demand Side of Fire Support", *Military Review* (November 1993), 41-53.

[7] US Army Fires Center of Excellence, *DIVARTY White Paper*, May 2014, 32.

provides the context leading up to the reestablishment of the division artillery, along with an analysis of current doctrine, Operations. Part four provides recommendations for improving readiness within field artillery organizations based on the historical case studies and the recent trends. The framework for part four will show how the division artillery will take the strategic guidance from the Chief of Staff of the Army and translate the guidance to tactical action, improving readiness and effectively preparing for future combat.

The historical case studies show the evolution of doctrine, organization and employment of field artillery in two instances against near peer competitors. This is the framework in which GEN Milley has framed his strategic guidance to the Army, to be prepared for ground combat with a near peer competitor.[8] The Battles of Kasserine Pass and Operation Desert Storm both demonstrated several of the tenants of unified land operations, which "describes the Army's approach to generating and applying combat power in campaigns and operations."[9] Specifically, the elements displayed were flexibility, lethality, adaptability, and synchronization. Flexibility is defined as employment of a versatile mix of capabilities, formations, and equipment for conducting operations.[10] The employment of field artillery in both operations displayed lethality, which in this context "is the capacity for physical destruction, which is fundamental to all other military capabilities."[11] Adaptability in this case refers to "a willingness to accept prudent risk in unfamiliar or rapidly changing situations, and an ability to adjust based on continuous

[8] Mark Milley, Thirty-ninth Chief of Staff of the Army: Initial Message to the Army, August 2015, accessed July 7, 2016, https://www.army.mil/e2/rv5_downloads/leaders/csa/Initial_Message_39th_CSA.pdf.

[9] Army Doctrine Publication (ADP) 3-0, *Operations* (Washington, DC: Government Printing Office, 2016), 7.

[10] ADP 3-0, 8.

[11] Army Doctrine Reference Publication (ADRP) 3-0, *Operations* (Washington, DC: Government Printing Office, 2016), 1-11.

assessment."[12] Finally, both operations displayed synchronization or "the arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time."[13]

A review of current trends is necessary to tie the historical case studies to the current state of the field artillery. Current refers to that time since the beginning of operations in Afghanistan, the 2003 invasion of Iraq, and the advent of the modular Brigade Combat Team in 2003.[14] The deterioration of the field artillery in the twelve years of persistent low intensity conflict has created a sense of urgency within the Army that spawned the reestablishment of the division artillery as a brigade level headquarters. With the suspension of the reestablishment of the division artillery, there has been confusion on how to best achieve readiness and prepare for future combat. The conclusion and recommendations will demonstrate how the division artillery will achieve the Chief of Staff's strategic guidance, specifically the objective of readiness "through the arrangement of tactical actions in time, space, and purpose."[15] The division artillery is the operational artist, whereas within modularity, there is no advocate for ensuring that subordinate field artillery units are getting the manning, training, and employment that prepares them for future conflict.[16]

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[12] ADRP 3-0, 3-10.

[13] Ibid., 3-15.

[14] With the modular Brigade Combat Team came the reduction of several brigade level headquarters historically associated with a US division, including the division support command and the division artillery. The intent was to, as the name implies, make brigades modular, self-contained organizations. While the Brigade Combat Team performed well when conducting stability/counterinsurgency operations, the unintended consequence of the deactivation of division artilleries across the army resulted in the atrophy of skills and proficiency of artillerymen and artillery units to perform their military occupational skills and mission essential tasks.

[15] ADRP 3-0, 2-1.

[16] "Who we are" United States Army Field Artillery School, accessed October 16, 2016, http://sill-www.army.mil/USAFAS/who-we-are.html. The Field Artillery Branch and the Field Artillery School,

Battles of Kasserine Pass

Background

Analysis of the role of artillery during the Battles of Kasserine Pass is separated into three sections. Specifically, the analysis will highlight doctrinal achievements and shortfalls with each of the battles. Each phase is examined in terms of the elements of operational art and both the Army's capstone doctrine and field artillery doctrine.[17] Using this context demonstrates how the division artillery conducted operational art, or linked tactical actions to strategic objectives. This case study is being used for several reasons: to examine the successful employment of field artillery against a peer competitor, to identify the factors that enabled the linking of tactical actions to operational and strategic objectives, and to show the evolution of doctrine and employment of field artillery from WWII to present times.

During the interwar period, between end of World War I and the beginning of the United States' involvement in World War II, the US Army adapted to technological advances and lessons learned from WWI. The bulk of the development revolved around organization, manning, and functionality of the division. This functionality experimented with troop levels, types of units within the division, and method of employment. New communication technology and the advent of motorization also impacted development of the division. The field artillery mirrored the trends within the division, with improvements consisting of motorizing its forces with both towed artillery and new self-propelled artillery pieces and the adoption of radio communications.

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headquartered at Ft Sill Oklahoma, have the shared responsibility for basic and mid-level training for Field Artillery soldiers. Within the scope of the division artillery, they also contribute to generating and revising field artillery doctrine and gather and disseminate lessons learned from across the force.

[17] Field Manual (FM) 100-5 *Operations* (Washington, DC: Government Printing Office, 1940); Field Manual (FM) 6-20 *Field Artillery Tactics and Techniques* (Washington, DC: Government Printing Office, 1940).

Improvements in radio communications led to the uniquely American fire direction center, which greatly contributed to artillery enabling several tenants of operational art.[18] Specifically, technological, doctrinal, and organizational advances led to improvements in tempo, operational reach, which in turn helped to prevent culmination and mitigate risk. The fire direction center enabled field artillery units, for the first time, to mass fires effectively on an area or point target. The center itself generally consisted of an officer in charge, two radio telephone operators, and two or three other soldiers and non-commissioned officers. The fire direction center concept was integrated from the platoon, managing three or four artillery pieces, all the way to the brigade level within the division artillery, coordinating operations for three or more subordinate artillery battalions. The fire direction center, both then and now, integrated, prioritized, and synchronized all planned and immediate requests for artillery fire in support of maneuver elements, from company to division level.[19]

The fire direction center enabled other improvements in the employment of artillery. Through radio communications, the fire direction center facilitated movement of firing units, in order to support the friendly scheme of maneuver. The fire direction center also aided in ammunition management and coordinating resupply with supporting logistics units. Through the aforementioned mechanisms, the fire direction center exponentially increased the effectiveness of American field artillery. The improvements were reflected doctrinally in the 1941 Field Manual (FM) 100-5, *Operations*. It stated, as field artillery was "capable of intervening over a zone of great width and depth, and of rapidly shifting and concentrating its fire without changing its

[18] FM 6-20, 111. "In its broadest sense, fire direction is the tactical command of one or more fire units for the purpose of bringing their fire to bear upon the proper targets at the appropriate time. In a more restricted sense, it comprises the tactical employment of artillery fire to include the location and selection of targets on which fire is to be placed, technique of delivery of fire thereon, and allocation of ammunition to fire missions."

[19] FM 6-20, 5-9.

positions which, makes it possible to concentrate the fire of large masses of field artillery under a common fire direction."[20]

Overall, the technological and organizational advances, coupled with the experiences at the Battles of Kasserine Pass set the groundwork for the division artillery to link strategy and tactics. The fact that the battles themselves were largely a failure contribute to their significance as a case study. The battles demonstrated effective use of both combined arms and field artillery doctrine, as well as the repercussions for failing to follow doctrine. This case study will focus on doctrine and the actions that took place in the eight battles that make up the Battles of Kasserine Pass. This case study will not address changes in the effectiveness in weapons systems, projectiles, or the ratios of artillery to maneuver units on the battlefield. These factors are congruent with advances in warfighting. Through testing in combat, artillery had the potential to become the decisive combat arm in the next conflict.

Training and Organizing

With the advent of motorization, the fire direction center, and radio communications, in addition to being able to mass on preplanned targets, the division artillery could respond to unplanned calls for fire support. Improved communications capabilities and mobility enabled flexibility in combat to deviate from plans as necessary. The fire direction center enabled separate field artillery units to mass their fires on a target or targets based on the commander's established priorities. Previously, artillery units had to be in sight of one another in order in order to adjust rounds onto a target, now with the radio communications and new gunnery methods, massing was possible for all units in range of the target.

Development of the fire direction center ultimately led to an emphasis on centralized control, to maximize the effectiveness of field artillery. The centralized control would maximize

[20] FM 100-5, 8.

the ability to mass when necessary, but also provide fire support to smaller elements, down to an infantry or armor company-sized element.[21] By conducting standardized training under the direction and supervision of the division artillery, the idea was to create interoperability and increased skill across artillery units within a division. The fire direction centers, at all levels, prioritized targets from any number of forward observers supporting infantry and armor formations. They sent firing data to different artillery formations based on their location and amount and type of ammunition on hand. The fire direction center also ensured that the repositioning of subordinate artillery units could also range targets in support the maneuver commander's plan. Lastly, the fire direction center was responsible for facilitating sustainment for subordinate units, most importantly managing ammunition usage and resupply.[22] The fire direction center became the brains of the field artillery system. The fire support elements, consisting of forward observers, ensured integration between artillery fires and the maneuver plan. Finally, the artillery batteries and battalions, manned and operated the howitzers themselves. All three elements, the fire direction centers, the observers, and the firing elements, were organized doctrinally under the division artillery, and each subordinate artillery battalion would provide habitual support to each of the infantry or armor regiments. The 1941 Field Manual 6-20, *Field Artillery Tactics and Techniques,* stated:

> the assignment of direct-support missions to artillery units permits direct cooperation with the supported units and enables it to act with greater promptness in meeting the requirements of the rapidly changing situation on the front of the supported units. Such assignment does not, however, imply subordination of the artillery units to the commander of the unit supported.[23]

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[21] An interesting innovation that resulted from centralized control from the Fire Direction Center (FDC) was the ability to conduct time on target" missions, massing fires on a specific target at a specific time. Advances in gunnery enabled each separate FDC to compute their firing data based on their location, among other variables, from the target location. The time on target mission is generally used during the initial barrage of an operation.

[22] Jonathan House, *Toward Combined Arms Warfare: A Survey of 20th Century Tactics, Doctrine and Organization*, 1984, 184.

[23] FM 6-20, 71.

The division artillery was created as part of the triangular division. At each echelon within the division artillery, from platoon to regiment, fire direction centers provided and maintained continuous artillery fires integrated with the maneuver plan. Depending on the type of operation and the level of artillery support needed, the division artillery could tailor the level of support given to the respective maneuver element. By centralizing control at the division level, the division artillery provided the most flexible and responsive support. These changes were reflected in not only artillery doctrine, but also in the Army's primary operations manual, FM 100-5. The 1941 version of *Operations* states, "whenever the situation permits, artillery [is] retained under centralized control. Field Artillery operates most effectively in this manner."[24] The benefit of the new organization was its responsiveness in providing general support to the division while also providing a battalion of artillery to associate habitually with each infantry or armor regiment.[25] The fire direction center provided a "superiority to American artillery by enabling commanders to control the fires of many battalions accurately and rapidly."[26] In relation to operational art, these FM 100-5 imperatives most closely associate with providing the commander with tempo, increased operational reach, and the ability to strike and mass on decisive points.[27]

Training exercises reinforced doctrinal changes prior to World War II, where more than a battalion of artillery would need to mass, for example, to destroy an enemy tank formation.

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[24] FM 100-5, 9.

[25] Janice E. McKenney, *The Organizational History of Field Artillery, 1775-2003*, 2007, 157.

[26] McKenney, 154.

[27] Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 2011), 4-5. Operational reach is "the distance and duration across which a joint force can successfully employ military capabilities." ADRP 3-0, 4-4-4-7. Tempo is "the relative speed and rhythm of military operations over time with respect to the enemy." Decisive point is "a geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success."

Through training, the role of the division artillery and the philosophy of centralized control and flexibility within the division was reinforced.[28] As early as 1937, then Brigadier General Lesley McNair, commander of the Second Infantry Division's Second Field Artillery Brigade voiced this sentiment to his division commander, the commander of the Second Infantry Division. In an April 8, 1937 memo, McNair expressed his beliefs that modern artillery had great power and the key to success lay in the massing of fires on decisive points. McNair stated:

> Rarely in war, would there be sufficient artillery to cover all points thoroughly and continuously; therefore, fire should be massed in succession on the most important targets. The procedure requires centralized control, great flexibility in delivery, considerable range, and good communications.[29]

If artillery lost its power to mass fires over a wide front and was dissipated in local combat, then it would no longer exert the influence that had given it such importance in the past.

The Battles

The Battles of Kasserine Pass, which took place from February 14 to February 25 1943, illustrated the importance of centralized control and a tension between maneuver and artillery commanders. The brief campaign signaled a transition, from doctrine that was not wholly understood or applied to an application in the final battle, demonstrating the proper application of artillery. This ultimately helped the Allied force avert disaster. The battles served as a foundation, which both incorporated the advances in technology and doctrine, and largely through failure, carried forward lessons learned throughout the remainder of WWII and beyond. The timing of the shift to the triangular infantry division corresponded with the start of World War II, so in effect the doctrine had not been thoroughly promulgated and contributed to some of the friction at the Battles of Kasserine Pass. Military historian Johnathan House asserts some of the friction

[28] McKenney, 165-166.

[29] Ibid., 147.

stemmed from the incongruence between training and doctrine was that armored divisions had stressed decentralized, mobile combat by direct fire so often in training that their artillery battalions had neglected the study of indirect-fire techniques.[30] Additionally, the fluid multinational command and control structure within II Corps also contributed to Allied ineffectiveness.

Prior to the invasion of the mainland of Europe, American-led Allied forces had focused on reducing Axis forces in Northern Africa. Leading up to the Battles of Kasserine Pass, the US II Corps was sent to reinforce and ultimately replace the XIX French Corps. The French corps had taken heavy losses and faced complete destruction by numerically and materially-superior German forces. The US II Corps consisted of four divisions, the First Infantry, Ninth Infantry, Thirty Fourth Infantry, and First Armored, along with the Thirteenth Field Artillery Brigade. Initially, the II Corps commander, now under the First British Army, had hastily spread his forces across a front of more than sixty kilometers, reinforcing the French, limiting the effectiveness of his combat power, and more importantly the ability of artillery to mass to support against German offensive. German forces had established defensive positions and were preparing to retake the French positions, which were key nodes along the east-west lines of communication. [31]

Overall, the campaign was a series of Allied tactical defeats with an operational victory. There were a total of seven battles in the Kasserine Pass area. Working chronologically, each battle took the names of local geographic features, Faid, Sidi bou Zid, Sbeitla, Sbiba, Kasserine, Tebessa, and Thala. Five of the battles demonstrated a piecemeal defensive struggle that lacked a unified command and control structure and poor tactical implementation, all coupled with poor

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[30] House, 128.

[31] Rick Atkinson, *An Army at Dawn: The War in North Africa, 1942-1943* (New York: Holt, 2003), 305-312; Boyd Dastrup, *King of Battle: A Branch History of the US Army's Field Artillery*, 1992, 209; Carlo D'Este, *World War II in the Mediterranean, 1942-1945* (Chapel Hill, NC: Algonquin Books, 1990), 10-12.

weather and a poor understanding of the enemy.[32] More specifically, these five battles highlight the ineffective integration of artillery, especially given the pre-war doctrinal updates. FM 100-5 prescribed general guidelines which were followed to varying degrees, including employing "adequate control, close liaison with supported troops, sufficient observation, and dependable signal communication."[33]

Under the cover of howling wind and blowing dust, the battle at Faid began shortly after dawn on February 14. A portion of the First Armored Division (1AD) fell in on French defensive positions two weeks prior to the German attack. Miscommunication, indecisiveness, and overall poor leadership between II Corps and 1AD leaders prevented Combat Command A (CCA) from developing and implementing a sound defensive plan. Despite the imminent warning of the attack the day prior, a series of unfortunate events prevented Allied forces from engaging the German attack. The CCA screening force was quickly overrun by German forces, and lacked communications back to the CCA command post to report the German offensive. The cover of the weather kept CCA commanders from requesting artillery support until German forces were already within their minimum range. The final losses at Faid, in less than six hours, were six killed, more than twenty wounded, and more than 130 missing. Equipment losses were even more staggering with more than forty tanks, fifty half-tracks, twenty five artillery pieces and forty other vehicles destroyed. By midday, German forces had overrun CCA forces and had turned south toward their next objective, Sidi bou Zid.[34]

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[32] David W. Hazen, *Role of the Field Artillery in the Battle of Kasserine Pass* (Ft Leavenworth, Command and General Staff College), 1973, 15.

[33] FM 100-5, 9.

[34] Atkinson, 339-340; Martin Blumenson, *Kasserine Pass: An Epic Saga of Desert War* (New York: Jove Books, 1983), 140-149; Hazen, 30-41; Orr Kelly, *Meeting the Fox, The Allied Invasion of Africa, From Operation Torch to Kasserine Pass to Victory in Tunisia* (New York: John Wiley and Sons, 2002), 184-188; D'Este, 17-19.

Much like Faid, the battle at Sidi bou Zid was characterized by poor anticipation of the enemy's intentions and disposition, and lack of integrated air and artillery support. The attack on Sidi bou Zid began just after dawn on February 15. With vastly inadequate and outnumbered forces, the Allies took heavy losses for the second day in a row of more than 300 men and fifty tanks. Early the next day, Allied reinforcements would counterattack with Combat Command C (CCC), but again, without air support, and underestimating the number of German forces. The counterattack had initial success, being on the offensive for the first time. CCC was able to incorporate its forward observers and reduce the German armor threat. As the fighting continued on throughout the day, CCC was overcome by the German fires, air support, and maneuver, which effectively enveloped the CCC. The counterattack cost the 1AD more than forty tanks and three howitzers, and another 300 men. Overall, the defense and counterattack cost the 1AD precious men and materials and ceded the territory to the Germans.[35]

News of the losses on the 15th drove II Corps leaders to evacuate defensive positions at Gafsa to conserve combat power. The Combat Command B (CCB) from Gafsa was to join a new line to the northwest at Sbeitla. The remainder of CCC would also consolidate at Sbeitla for a short time. Maintaining the initiative, German forces attacked this new line late in the morning on February 17. Despite suffering significant losses each of the previous three days, 1AD delayed the German forces for several hours before hastily withdrawing. The relatively fresh CCB delayed the German forces while CCA and CCC withdrew to Sbiba. By 1700, CCB began its withdrawal, starting what would amount to a thirty-six hour operational pause before the next battle. In the four days of fighting 1AD had lost more than 1,100 men, twenty-five howitzers, 100 tanks, and almost 300 other vehicles. The delaying action and withdrawal enabled 1AD to reconsolidate at Sbiba, where the II Corps would have its first marginal taste of success.[36]

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[35] Atkinson, 340-343; Blumenson, 157-163; D'Este, 18-19; Hazen, 50-59; Kelly, 188-200.

[36] Atkinson, 363-366; Blumenson, 204-212; Hazen, 68-74; Kelly, 221-226.

The battle at Sbiba was significant in that the Allies were finally able to field a comparable force to the Germans. The defense at Sbiba consisted of the British Sixth Armored Division, and the US Thirty-Fourth Infantry Division (34ID). These forces primarily maintained their unit integrity, including their supporting artillery. This is unlike the 1AD, which was divided into four maneuver elements vice three. The Thirty-Fourth Division Artillery Commander provided centralized control and direction of its three subordinate artillery battalions in preparation for the defense. Once the German main attack began on the afternoon of February 19 they felt the effects of this preparation. Units within the 34ID had conducted registration the day prior and had generated more than one hundred pre-planned targets on likely German avenues of approach.[37] The resulting artillery fire quickly destroyed twelve German tanks. The destruction of the tanks coupled with heavy rain and the resulting lack of maneuverability all contributed to a German withdrawal.[38] This German setback led to shifting their focus from Sbiba to Kasserine Pass, where again, Allied forces would struggle.

Instead of waiting until the morning to attack at Kasserine Pass, German forces began assaulting the Allied forces during the period of darkness from February 19 to 20. The Allied defense was a disparate group comprised of two infantry battalions, two artillery battalions (one French and one US), a tank destroyer battalion, and an engineer battalion, in all about two thousand men. The task force defending Kasserine Pass had about a day to establish their defensive positions. During their preparations, a directive from the British First Army arrived stating, “there will be no withdrawal from the lines now held. No man would leave his position

[37] Field Manual (FM) 6-20, *Field Artillery Tactical Employment*, (Washington, DC: Government Printing Office, 1944), 6. Artillery registration is defined as: fire delivered to obtain corrections for increasing the accuracy of subsequent fires.

[38] Blumenson, 243-245; Hazen, 78-79.

unless it is to counterattack."[39] The mounting losses were starting to take a toll on the Allied forces.

Although the US artillery battalion had conducted a registration and made other preparations, they were not integrated into the defensive plan of the improvised group. Despite this shortcoming, German reconnaissance on the 19th was repelled by accurate artillery fire. The main German attack began on the morning of the 20th, and once again, well placed artillery fires bogged down the assault. Once German leaders realized the composition and limited depth of the Allied defense, all available units were sent to expedite the assault. Slowly, the German forces worked their way up the narrow pass, overwhelming the Allied defenses. Five additional battalions of reinforcing artillery greatly contributed to the German victory. By nightfall, Kasserine Pass was under German control. Despite the convincing victory, the German forces did not pursue the Allied task force, setting the conditions for the next engagements at Tbessa and Thala.[40]

After the defeat in the Kasserine Pass, II Corps leaders needed to predict where German forces would advance next. They were at a crossroads leading to two the villages of Tbessa and Thala, respectively. Beginning on February 20, Allied forces began preparing their defensive positions. The CCB from 1AD prepared at Tbessa, being in the best shape from previous operations. The British Twenty-Sixth Armored Brigade with American attachments established its positions on the approach to Thala. When the Axis attacks came the next morning, as in the previous battles, the Allied forces had some initial success. Registered artillery destroyed some enemy armored vehicles until the overwhelming might of German combined arms took effect.[41]

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[39] Blumenson, 254.

[40] Atkinson, 369-373; Blumenson, 245-257; Hazen, 83-97; Kelly, 230- 237.

[41] Blumenson, 258-268; Hazen, 101-110.

At Tbessa, CCB was able to hold its defensive lines despite taking heavy losses to men and equipment. The next day they would be reinforced by the relatively fresh US First Infantry Division (1ID). Despite being overmatched by German armored forces, the 1ID was able to synchronize and coordinate accurate and effective fires through its division artillery. Unlike 1AD, 1ID had kept centralized control of its artillery under the division artillery commander. By midday, some Axis elements had been fixed in the pass, with trailing elements beginning to disengage from the attack. By nightfall German forces had retrograded completely. Command issues, along with the heavy losses from the day previous, prevented the CCB and 1ID from counterattacking. Ultimately, the Germans would misinterpret intelligence, believing that an overwhelming Allied counterattack was imminent. Despite their clear advantage, the German forces would cede Tbessa.[42]

Concurrently at Thala, the British armored brigade faced a similar fate as the CCB. The Germans methodically reduced the Allied forces throughout the day, forcing the defensive line back repeatedly. By nightfall the Allies had lost nearly six hundred men, forty tanks and a number of other vehicles and were preparing to make their last stand at Thala. Predictably, the German forces established positions for the evening and prepared to make their final offensive in the morning. Fortunately for the Allied forces, reinforcements that had been on the move for the previous three days would soon arrive.[43]

The US Ninth Division Artillery (9ID), commanded by Brigadier General Leroy Irwin, arrived at Thala early in the afternoon on February 21, staying out of the fray until making proper preparations. After dark, the 9ID Division Artillery began to emplace its three battalions, along with two additional cannon batteries.[44] Their work throughout the evening to integrate with the

[42] Atkinson, 379-384; Blumenson, 276-281; Hazen, 110-115; Kelly, 241-246.

[43] Atkinson, 385; Blumenson, 281-285; Hazen, 118-131.

[44] Kelly, 246. 9ID Division Artillery consisted of twelve 155mm howitzers (one (1) battalion,

existing defense was incredible. There actions were even more extraordinary when considering the division artillery had just completed an eight hundred mile movement with more than two thousand men, four hundred vehicles, and forty-eight cannon, all in less than four days.

Beginning at daybreak the next morning the 9ID Division Artillery began to conduct registration fires. After partially completing the registration, and establishing communications and observation posts overnight, the forty-eight newly arrived howitzers were ready. The first German assault came two hours later, first sighted 2,500 yards from the front. Observers called in for the maximum rate of fire on the German armor. The volume and accuracy of fire was earth shattering. German leaders called back for guidance, thinking the increase in firepower was a sign of an Allied counterattack. The German guidance was to wait until four o'clock, when air support could soften up the Allied defenses enough to break through the thin line. Throughout the day, artillery continued to pound the German lines, in what BG Irwin would call "the toughest day [I] experienced during World War II".[45] The addition of artillery was enough to prevent the German offensive that day. After nightfall, Axis forces were pulled off the lines at both Thala and Tbessa to reinforce Axis forces elsewhere.[46]

For their actions, the 9ID Division Artillery and subordinate battalions received a distinguished unit citation, for "repelling an attack by vastly superior forces which contributed in great measure to the defeat of the of the enemy's attempt to break through the Thala defile."[47] The remainder of Allied forces at Kasserine Pass faced no further enemy aggression. The only

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which was commanded by then LTC William Westmoreland), twenty-four 105mm howitzers (two battalions), twelve mounted 75mm guns (two batteries). Overall the division artillery consisted of more than 400 vehicles, and nearly 2200 soldiers.

[45] Atkinson, 386.

[46] Atkinson, 385-388; Blumenson, 275-287; Hazen, 129-133; Kelly, 246-251.

[47] Joseph Mittleman, *Eight Stars to Victory* (Washington DC: Ninth Infantry Division Association, 1949), 91.

thing that remained was clearing the heavily mined routes to open lines of communication for follow on forces.

Analysis and Conclusion

While the Battles of Kasserine Pass resulted in series of Allied defeats, the Allied forces hung on just long enough, and conditions elsewhere changed so that Axis forces were compelled to withdraw. The campaign was the first real test for the US Army's new equipment, doctrine, and organization.[48] The battles showed that the doctrine established just a couple of years prior was effective when followed. When artillery was employed under centralized control, as prescribed in both field artillery and combined arms doctrine, in the battles of Sbiba and Thala, fires were effective in destroying the enemy, primarily by massing overwhelming fires on a target area**.** Additionally, in Sbiba and Thala, the artillery successfully integrated with the maneuver plan, or in these cases with the defense. Finally, Sbiba and Thala demonstrate how effective fires facilitated the tempo and extended the operational reach of the Allied forces while causing the German forces to halt their attack rather than culminating.

The successes of the campaign resulted in codified changes to doctrine in the form a reorganization directive from the Headquarters of the Army Ground Forces to all US Army forces. The directive, signed by a former division artillery commander, Lieutenant General Leslie McNair, reflected some of the lessons learned in the campaign. The number of combat commands within the armored division was reduced from three to two, with the amount of artillery remaining the same. This created a much greater ratio of artillery to maneuver, which was like that of the triangular infantry division, enabling flexibility within the organization. The artillery battalion became the lowest self-sustaining unit, which had been at the regiment. Again, this created flexibility, this time with respect to sustainment. An artillery battalion could now support

[48] D'Este, 23-24.

any element within the division, under the direction of the division artillery, while managing its own logistical needs.[49]

Throughout the less successful battles there was many instances of task organization changes without regard overall capability, particularly with respect to artillery support. These shortcomings were due to several factors, inexperience and misapplication of doctrine among other things, which unfortunately cost many lives. Inexperience with how to employ artillery resulted in units placed too far forward, where they were vulnerable to enemy maneuver, or were to employed as direct fire weapons.[50] In the case of Tbessa and the CCB, there were more than four battalions of artillery available, yet no more than one battalion massed in opposition to enemy armored forces. The underemployment of artillery at Tbessa is an example of why a division artillery is essential. Without its oversight, there is no other formal mechanism to plan, coordinate, or synchronize across the number of separate artillery battalions needed to defeat a superior maneuver force, as was the case at Tbessa. US Army doctrine stated that artillery should not kept in reserve and plans should include the "coordinated employment of all artillery with the force."[51] By not maximizing the effectiveness of the artillery, it was effectively placed in reserve. This undoubtedly led to higher casualty rates and material losses by the Allied force at Tbessa.

While the German forces ultimately withdrew, the Allies missed a potentially decisive victory, with three battalions of artillery largely underemployed. This resulted from 1AD's decision to use its division artillery to act as an additional combat command headquarters. The Combat Command D, led by the division artillery, was the II Corps' reserve and was not used during the campaign. This is troublesome given the losses suffered during the battles against a

[49] Kent Greenfield, Robert Palmer, and Bell Wiley, *The Organization of Ground Combat Troops* (Washington DC, Historical Division, Department of the Army, 1947), 375-382.

[50] Hazen, 148-149.

[51] FM 6-20, 119.

generally superior force.[52] Overall, the technological and organizational advances, coupled with the experiences at the Battles of Kasserine Pass set the groundwork for the division artillery to link strategy and tactics. The will continue to develop throughout the war and its progression will be evident in Operation Desert Storm.

Operation Desert Storm

Background

Analysis of the role of artillery during Operations Desert Shield and Desert Storm is separated into three sections. Specifically, the analysis will highlight the preparation for deployment, the use of artillery in preparation for the ground offensive, and finally for the attack of Iraq itself. Each phase is examined in terms of the elements of operational art, unified land operations, and the AirLand Battle doctrine. Using this context demonstrates how the division artillery conducted operational art. This case study is being used for several reasons: to examine the successful employment of field artillery against a near peer competitor, to identify the factors that enabled the linking of tactical actions to operational and strategic objectives, and to pull forward best practices for how to best train, prepare, and employ field artillery in the future.

Training and Organizing

Operation Desert Shield, the preparation and buildup of forces in the Saudi Arabian desert, followed by Operation Desert Storm, which began with the offensive into Iraq, were the result of the August 1990 Iraqi invasion of its southern neighbor Kuwait. At the time, Iraq had the fourth largest military in the world, numbering over one million men. Its organization and doctrine reflected its ties to the British empire as well as with its main supplier of arms, Russia, and was formed into seven corps-sized elements, with four of the corps oriented to the south,

[52] Atkinson, 392; Hazen, 154-155.

toward Saudi Arabia and in Kuwait.[53] Each mechanized corps not only had a robust armored force, but also contained a substantial indirect fire capability. Each corps contained a brigade of artillery, numbering between seventy and 140 artillery medium artillery pieces. The overall numerical artillery advantage was exacerbated by the generally overall greater ranges possessed by the Iraqi artillery systems.[54] Overall strength of direct support artillery was some 3,300 pieces along with some 300 more longer ranging multiple launch rocket systems. Complicating matters was the capability for the Iraqi army to employ chemical munitions with its artillery assets.[55]

The threat of the use of chemical weapons and the large number of Iraqi artillery drove training and emphasized the importance of US artillery. Across the deploying force, division artilleries led training of all subordinate artillery battalions, which created a familiarity between the subordinate units and facilitated interoperability within the units. Firing, logistical, and communications operations were all standardized within the subordinate artillery units within a given division artillery.[56] By standardizing operations subordinate artillery units would later be able to provide flexible support to any of the maneuver units based on the enemy threat or friendly mission. For maneuver commanders, the level of support could be counted on,

[53] Theresa Kraus and Frank Schubert, The Whirlwind *War: The United States Army in Operations Desert Shield and Desert Storm* (Washington, DC: Government Printing Office, 1995), 133-134.

[54] Kraus and Schubert, 135-136. Iraqi tube artillery consisted of at least six different variants, ranging from 100 millimeter (mm) to 160 mm caliber rounds. For context, artillery less than 100 mm is considered light, 100 mm to 210 mm is medium caliber, and greater than 210 mm is considered heavy artillery. A common Iraqi artillery piece was the G5, with a range of thirty-nine kilometers. This range exceeded the thirty-kilometer maximum range of the M109A2 self-propelled 'Paladin', the most common howitzer within the US armored divisions.

[55] Kraus and Schubert, 135; Kevin M Woods and Michael R. Pease, *The Mother of All Battles: Saddam Hussein's Strategic Plan for the Persian Gulf War* (New York, NY: Naval Institute Press, 2008), 60.

[56] US Army, Third Armored Division Artillery *Historical Summary*, 1991, 2.

regardless of artillery unit. This, in effect, reduced some of the fog and friction that Clausewitz famously points out happens in war.[57]

One example to indicate commonality across the force stems from the Third Armored Division Artillery, who would later help spearhead the Seventh Corps attack into Iraq. By focusing on command post exercises with its subordinate battalions, it was able to create a shared understanding of the processes and procedures needed to provide accurate and timely fires in support of the division. The division artillery commander noted that the "training exercises proved highly invaluable in getting all available artillery assigned to the force field artillery headquarters working together prior to deployment."[58] The common training and familiarity greatly aided in employment the of the division artillery which was "responsible for recommending the fires organization for combat and positioning all units organic to, assigned to and supporting the maneuver force commander."[59] This would prove fortuitous once operations began in facilitating flexibility, mass, and tempo that led to US forces overwhelming success. This training can arguably be traced back to the way of thinking seen in Brigadier General Leslie McNair as a division artillery commander in 1937, and guidance from McNair as Army Ground Forces commander in 1943. Almost fifty years later, the doctrine had become firmly ingrained.

The first tenant of unified land operations that was met during the division artillery training and preparation for deployment was flexibility.[60] This common understanding and familiarity enabled commanders at each level to tailor their force, specifically field artillery units,

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[57] Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton, New Jersey: Princeton University Press, 1984), 101.

[58] Third Armored Division Artillery, 2.

[59] Field Manual (FM) 3-09, Field Artillery Operations and Fire Support (Washington, DC: Government Printing Office, 2014), 1-6; US Army Fires Center of Excellence, *DIVARTY White Paper*, May 2014, 32.

[60] ADP 3-0, 7. Flexibility is "the ability to employ a versatile mix of capabilities, formations, and equipment for conducting operations."

to achieve the mission, weight the main effort, and have the confidence that they would receive the lethal effects to face a severely reduced enemy. This flexibility, which could be translated to the AirLand Battle imperative of agility, was defined as "the ability of friendly forces to act faster than the enemy, [which] is the first prerequisite for seizing and holding the initiative. Such greater quickness permits the rapid concentration of friendly strength against enemy vulnerabilities."[61] Achieving the AirLand Battle imperatives would have been considered critical considering the nature of the enemy that coalition forces were preparing to face during Operation Desert Shield.

Preparations

As the overall war plans developed, the US Army portion of coalition would attack with two corps abreast, conducting a flanking maneuver on the Iraqi defenses into Iraq.[62] Additionally, a corps sized coalition led by the First Marine Expeditionary Force (1MEF) was to attack into Kuwait itself.[63] To reduce the Iraqi forces and mitigate some of the risk of being overmatched by sheer numbers of armored forces and artillery, the coalition waged an extensive air campaign. The air campaign was extremely effective at reducing and demoralizing Iraqi forces and engaging strategically important targets deep within Iraq. Artillery, along with rotary wing support, was used for setting the conditions for the close fight, specifically the initial breach of the Iraq border defensive belt. An effective tactic used to prepare for the ground offensive was the artillery raid. Overall, the organization, training, and finally the execution would demonstrate that the division artillery was the level of command that would link strategy to tactical action.

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[61] Department of the Army, Field Manual 100-5, *Operations* (Washington, DC: Government Printing Office, 1986), 16.

[62] Robert Scales, *Certain Victory*: *The US Army in the Gulf War* (Fort Leavenworth, KS: US Army Command and General Staff College Press, 1994), 132.

[63] Kevin M Woods and Michael R. Pease, *The Mother of All Battles: Saddam Hussein's Strategic Plan for the Persian Gulf War* (New York, NY: Naval Institute Press, 2008), 6.

Artillery raids were employed to reduce enemy artillery, mitigating the threat of both conventional and chemical munitions. Each division artillery demonstrated its proficiency prior to the invasion by facilitating the numerous artillery raid operations along the Iraq international border. The artillery raid involved sending artillery units forward, into range of their known targets and massing fires. Prior to execution, the division artillery facilitated these raids by deconflicting airspace with army aviation and other air assets. In order to prevent being engaged by enemy artillery, US artillery would displace after every few barrages. Division artillery radar and dedicated firing units stood by, ready detect to engage Iraqi artillery counterfire. These artillery raids had devastating effects on the enemy, one report stating that ninety-seven of one hundred howitzers within an Iraqi division had been destroyed by massed fires.[64] On February 13, the First Cavalry Division Artillery massed an entire attached multiple launch rocket system battalion, destroying twenty four Iraqi targets with more than three hundred rockets, all in less than five minutes.[65]

The tremendous effects of this tactic would not have been possible without the organization of the artillery within the division artillery. As outlined previously, the fires force headquarters, doctrinally, had the responsibility for ensuring the training and readiness of all artillery organizations as well as "recommending the fires organization for combat and positioning all units organic to, assigned to and supporting the maneuver force commander."[66] The effectiveness of the artillery raid is also indicative of extending operational reach prior to conducting the ground offensive."[67] To achieve the desired surprise with the artillery raid, a

[64] Kraus and Schubert, 165.

[65] United States Army Field Artillery School (USAFAS), *Redleg Update* (Fort Sill, OK: USAFAS PAO, 2017), 22.

[66] FM 3-09, 1-6; *DIVARTY White Paper*, 32.

[67] JP 3-0, 4-5. Operational reach is "the distance and duration across which a joint force can successfully employ military capabilities."

significant amount of synchronization was required. The division artillery set the conditions for successful artillery raids through standardized training. During planning and execution, the division artillery managed the movement, observation, target observation and sustainment capabilities of the subordinate battalions.

Additionally, by reducing the enemy forces prior to the invasion, the tactical actions facilitated the attainment of an operational level decisive point.[68] In this case, Army Central planners had "assumed that the proper level of attrition was roughly fifty percent of the Iraqi armor and artillery, including ninety percent of the tanks and guns at the breach sites."[69] Thus, the critical factor was the destruction of enemy forces prior to commencing the ground offensive. Prior to the invasion, the Third Army intelligence cell assessed that fifty-three percent of Iraqi artillery and forty-two percent of the Iraqi armor had been lost.[70]

Finally, the artillery raids demonstrated phasing and transitions. This usually "involves a change of mission, task organization, or rules of engagement. Phasing helps in planning and controlling and may be indicated by time, distance, terrain or an event."[71] In this case, artillery units displayed their flexibility as they transitioned between massing fires on Iraqi forces prior to the ground offensive to providing direct support to maneuver units. The ability to organize quickly into a mobile artillery task force, maneuver within range of enemy targets, synchronize massed artillery fire to destroy the enemy, and quickly return to the supported maneuver

[68] ADRP 3-0, 4-4. Decisive point is "a geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success."

[69] Kraus and Schubert, 167.

[70] Richard M. Swain, *Lucky War: Third Army in Desert Storm* (Fort Leavenworth, KS: US Army Command and General Staff Press, 1994), 204.

[71] ADRP 3-0, 4-7.

formation is a testament to the collective training, communication, and standardization prior to deploying.

The artillery raids conducted by coalition forces prior to the ground attack exemplify the AirLand Battle Doctrine during Operations Desert Shield and Storm. Specifically, when planning for or conducting offensive operations “firepower exploits maneuver by neutralizing the enemy's tactical forces and destroying his ability and will to fight. Firepower may also be used independent of maneuver to destroy, delay, or disrupt uncommitted enemy forces.”[72] Additionally, the artillery raids conducted prior to the invasion exemplify the doctrinal imperative that “engagements must be violent to shock, paralyze, and overwhelm the enemy force quickly. They must be terminated rapidly to allow the force to disperse and avoid effective enemy counterstrikes.”[73]

The Attack

Actions once US forces crossed into the Iraqi defensive zone once again demonstrated that the training, organization and execution of the division artillery was the tactical headquarters which could link strategy to tactics. Once the attack into Iraq began early on the morning of February 23 1991, field artillery continued to play a significant role in the success of the US forces. Units displayed the skill they had gained in training and continually demonstrated flexibility as the offensive proceeded. The offensive began as the Second Armored Cavalry Regiment (2ACR) entered Iraq as a covering force for the two corps which were the main effort. As the spearhead for offensive into Iraq, the 2ACR depended heavily on artillery to mitigate the superior numbers of Iraqi forces. Intelligence reports indicated 2ACR would encounter the elite

[72] FM 100-5, 12.

[73] Ibid., 24.

Republican Guard, which possessed its most formidable weapon, the T-72 tank.[74] To mitigate the risk of facing the Republican Guard, the regiment, in addition to considerable air support, was augmented with an entire field artillery brigade. This flexibility enabled the 2ACR to conduct thirty minutes of preparation fires with an entire brigade to "suppress or destroy Iraqi observation posts located in several bunkers and observation towers."[75] The thirty-minute artillery barrage on the Iraqi positions along the border crushed the enemy morale. Three separate division artilleries coordinated targeting of numerous Iraqi command and control, artillery, and sustainment nodes in order to eliminate the possibility of enemy forces disrupting the offensive. The Third Army battle damage estimate reported that all one hundred Iraqi artillery pieces that 2ACR initially faced were indeed destroyed.[76] Throughout the entire operation the thirty minutes of artillery preparation involved more than 350 artillery pieces. Three field artillery brigades supported breaching operations, firing more than 11,000 rounds and 414 rockets. This massed fire destroyed more than fifty Iraqi tanks, 139 other armored vehicles, and 152 artillery pieces.[77]

As the 2ACR maneuvered, its supporting division artillery tailored artillery support based on the enemy situation template, which was surprisingly accurate. After the initial breach of the Iraqi defense, 2ACR received light contact throughout its sixty-four-kilometer movement on the first day of the ground offensive. When the regiment did receive enemy contact, it was quickly suppressed and neutralized by responsive field artillery support.[78] The support on the first day of the offensive enabled and exemplified the AirLand Battle dynamic of maneuver in that actions

[74] Scales, 223.

[75] 210th Field Artillery Brigade, *Summary of Significant Events: Operation Desert Storm* (New York: Department of the Army, March 1991), 2.

[76] Scales, 226.

[77] USAFAS, 22.

[78] 210th Field Artillery Brigade, 3.

demonstrated “the means of concentrating forces at the critical point to achieve the surprise, psychological shock, physical momentum, and moral dominance which enable smaller forces to defeat larger ones.”[79] As demonstrated with the artillery raids, the execution of the artillery units in support of 2ACR also displayed the fundamentals of firepower as described in AirLand Battle, by facilitating “maneuver by suppressing the enemy's fires and disrupting the movement of his forces. Firepower exploits maneuver by neutralizing the enemy's tactical forces and destroying his ability and will to fight.”[80] This was clear as enemy infantry, in entrenched positions, were engaged with US artillery, resulting in “numerous enemy prisoners of war surrendering.”[81]

Into the second day of the ground offensive, the weather took a turn for the worse with poor visibility due to dust and haze, severely restricting the employment of close air support. This made the role of the field artillery even more critical as 2ACR continued its movement toward the Iraqi premier force, its Republican Guard. Again, the division artillery seamlessly increased artillery support to lead elements is the regiment approached the elite Iraqi unit. AirLand Battle prescribed that “priority of support should change automatically when the commander shifts his main effort.”[82]

This not only demonstrated flexibility, but also the AirLand Battle imperative of depth. The doctrine stated, “through the use of depth, a commander obtains the necessary space to maneuver effectively; the necessary time to plan, arrange, and execute operations; and the necessary resources to win.”[83] Despite the challenges presented with the poor weather and corresponding reduction in air support, once the Republican Guard was engaged, field artillery

[79] FM 100-5, 12.

[80] Ibid., 12.

[81] 210th Field Artillery Brigade, 2.

[82] FM 100-5, 44.

[83] Ibid., 16.

fires had a devastating effect. According to the battle damage assessments over a brigade's worth of enemy armored vehicles were destroyed. This is remarkable given the supposed maneuverability of Iraqi armored forces, and the general inability for field artillery to have effects on moving targets.[84]

While the 2ACR saw the majority of the action during the initial forty-eight hours of the invasion of Iraq, the remaining two corps followed and prepared to become the main effort of the operation. Field artillery units were continuing to demonstrate their agility as the corps maneuvered in division columns. Artillery commanders continually reallocated forces to weight the main effort within the division columns, in this case the elements most likely to make contact with enemy forces.[85] Despite minimal enemy contact the agility prepared the divisions "for the rapid concentration of friendly strength against enemy vulnerabilities."[86]

Analysis and Conclusion

Intelligence reported that forty-three Iraqi divisions prepared to defend along its border, organized into four corps. Despite their overwhelming numerical superiority, the Iraqi army was woefully overmatched and defeated soundly in a little more than four days of ground combat. The coalition force was prepared to face a much more determined enemy.[87] Specifically, the field artillery exemplified the tenants and imperatives of the current doctrine, AirLand Battle. The field artillery heeded "integrating fire support into operations, the most important considerations are adequacy, flexibility, and continuity."[88] They carried out their doctrinal imperatives due to the

[84] 210th Field Artillery Brigade, 1-3.

[85] Third Armored Division Artillery, 10.

[86] FM 100-5, 16.

[87] Kraus and Schubert, 133-135.

[88] FM 100-5, 44.

integrated training led by each division artillery, which had begun long before being notified of deploying. Notification of the deployment focused their training, creating a sense of urgency that enhanced unit cohesion.[89]

Upon arriving in theater and preparing for ground combat, fires facilitated by the division artillery displayed flexibility by reducing enemy defenses with numerous artillery raids. This satisfied the imperative that "engagements must be violent to shock, paralyze, and overwhelm the enemy force quickly. They must be terminated rapidly to allow the force to disperse and avoid effective enemy counterstrikes."[90] The artillery raids completely neutralized the threat of artillery delivered chemical munitions during the initial attack into Iraq and vastly reduced the conventional artillery threat. This undoubtedly had a huge psychological benefit to the coalition forces as one of had neutralized one of the enemy's most dangerous tools.

Finally, the division artilleries continually adjusted the task organization of their subordinate units to provide the maximum available support to maneuver elements in contact or probable contact with the enemy. The AirLand Battle imperative which states "priority of support should change automatically when the commander shifts his main effort", though simply stated, takes quite a bit of foresight, common training and understanding, and effective communication.[91] This is exemplified as at one point on the third day of the advance through Iraq, when the 3 AD Division Artillery massed fires from three artillery battalions to destroy both an enemy bunker system and the supporting artillery that was a part of the bunker's defense.[92] By the end of the

[89] Third Armored Division Artillery, 2.

[90] FM 100-5, 24.

[91] FM 100-5, 44.

[92] Third Armored Division Artillery, 13.

ground offensive, American field artillery had fired more than fifty-eight thousand rounds, helping to drive Iraq out of Kuwait.[93]

Overall, the performance of the field artillery was a testament to the training, habitual relationships within each division artillery, their subordinate units, and the comprehension and application of their current doctrine. These units displayed their readiness as a key part of the coalition force as it closed with, destroyed, and achieved a decisive victory over the Iraqi forces. When looked at through the lens of operational art, the division artilleries which participated in Operations Desert Shield and Desert Storm were the organizations that ensured that artillery was the decisive arm, "enabling the achievement of operational and strategic objectives through tactical action in time space and purpose."[94] This will become important to remember as the US Army transitions to the modular brigade combat team and operations in support of the Global War on Terror drastically changes the field artillery.

Modularization

Introduction

Counter-insurgency operations in Iraq and Afghanistan, the reduction of senior leader oversight (the disestablishment of the division artillery) and doctorial and organizational changes has led to the degradation of the ability of field artillery organizations to provide lethal and non-lethal fires effectively in support of major combat operations. This context, taken with the recent guidance from the chief of staff of the Army does not signal a return to the division artillery of the 1990s, but to one that is ready, as described in the current Field Artillery Vision "to integrate

[93] USAFAS, 22.

[94] ADRP 3-0, 4-4.

and employ Army, joint, and multinational fires across multiple domains" and which ultimately enables the readiness the Chief of Staff of the Army is directing.[95]

Post 9-11 Context

As the Cold War ended and the military reflected after its success in Operation Desert Storm, leaders saw the need to be able to deploy smaller, more agile forces rapidly. The US military saw the need to improve on the lengthy buildup of forces in Saudi Arabia during Operation Desert Shield. The thinking was that in future combat, coalition forces would not have the time or the freedom of action to spend so long generating combat power, as well as the relatively large sustainment system needed for such a large force. In 1996, an influential paper entitled *Breaking the Phalanx- A New Design for Landpower in the 21st Century* was widely disseminated throughout the ranks of senior officers and became a blueprint for future organization. The tenants of the new design were speed, technology, joint, and rapidly deployable. This would signal a move away from the division as the building block for tactical action, toward a smaller, more agile, modular force, centered on the Brigade Combat Team (BCT).[96]

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[95] USAFAS, 3.

[96] Douglas Macgregor, *Breaking the Phalanx,* (Washington DC: Center for Strategic and International Studies, 1996),199-201. "Based on the assumption that future combat operations involving American Ground Forces will, of necessity, be rapid and intense, that they will take place over extended frontages and depths, and that ground combat formations smaller than the contemporary Army division will have to operate independently for long periods. Under these conditions, the potential advantages of revolutionary change in warfare must be exploited at lower levels of command than was the case in either World War II or in the years since 1945. Rapid deploy-ability and reduced demand for elaborate logistic support combined with the need to link multi-service capabilities to Army Ground Forces positions Joint command, control, communications, computers, intelligence, surveillance and reconnaissance at the heart of this organizational effort. In this connection, the real promise of information age warfare is not that it will enable the centralization of decision making and the exercise of increased control, but rather that it will liberate the initiative of junior officers and noncommissioned officers to perform independently and synergistically within the operational and strategic commanders' intents"….. "The strategic value of American Landpower rests on tactical proficiency at the "point of the spear " Soldiers and organizations will do in war what they do in peacetime. Tactical organizations that have not lived and trained together before they deploy, cannot be transformed overnight on the basis of a single exercise into a fighting force that will stand up to future adversaries that are potentially much more capable than the Iraqi

Moving forward to 2001, Secretary of Defense Donald Rumsfeld, saw the strategy of being prepared to fight in two theaters of war wars simultaneously as being unrealistic. His assessment, stated in the Quadrennial Defense Review of 2001, was that by being able to deter in one theater and engage in another, the military would be able to free up valuable resources and increase capability. The changes that Secretary Rumsfeld sought to make, shifting to a lighter more expeditionary force, incorporated with superior technology, were influenced by the success that US forces had in late 2001 operations in Afghanistan. His selection of retired General Peter Schoomaker as Chief of Staff of the Army reflected his motivations, as Schoomaker was a career special forces officer who could help to implement the Secretary of Defense's new vision.

The next step in this transformation was the modular BCT. The aim of the modular brigade combat team change was to "increase the number of brigade combat teams for operational commitments while maintaining combat effectiveness that is equal to or better than previous divisional brigades."[97] This both created units for operational requirements for geographic commanders and was an attempt to reduce sustainment needs. With three standardized brigade combat team types (Stryker, Infantry, and Armored), the logistical requirements across the army would shrink. With the streamlining of forces as part of modularity, the division artillery was disestablished. The stopgap measure was for the Field Artillery Brigade that is now habitually associated with the corps level, to provide training readiness, and oversight to the artillery battalions within each BCT. The Field Artillery Brigades themselves were charged with maintaining the training, readiness, and oversight of their own subordinate battalions and fulfilling operational requirements. Specifically, there are only three field artillery brigades associated with First, Third, and Eighteenth Airborne Corps within the continental US. There are two additional field artillery brigades in Korea and Ft Sill respectively which are aligned to

[97] Milley, 1-2.

specific operational requirements and do not provide training, resources, or oversight to BCT field artillery battalions.[98]

The division fires and effects cell that remained after modularization primarily focused on the tactical employment of fires and effects for the division. When deployed in support of operations in Iraq or Afghanistan, they coordinated fires for the ad hoc group of BCTs within its area of responsibility.[99] Because of the high operation tempo of divisions and the subordinate BCTs, coupled with the nature of counter insurgency operations, training and integration across the division was challenging. Additionally, the division fires cell was and is a staff section and possesses no formal authority over field artillery battalions within the subordinate BCTs. This was a glaring deficiency with the disestablishment of the division artillery.[100]

Effects of Global War on Terror

The initial invasion of Iraq was as swift and successful as the previous campaign a little more than a decade earlier. Division artilleries displayed incredible skill as they had overwhelmingly positive effects during the march to Baghdad and the period of transition to counter-insurgency operations.[101] Due to the nature of the counter-insurgency operations in Iraq

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[98] Samuel R. White, *Fires: A Joint Professional Bulletin for U.S. Field and Air Defense Artillerymen. The U.S. Army Professional Writing Collection*, accessed October 15, 2016, http://www.army.mil/professional writing/volumes/volume6/october_2008/10_08_4_pf.html.

[99] Michael Bledsoe, *Joint Fires Collection and Analysis Team*, U.S. Army Combined Arms Center (Fort Leavenworth, KS: Center for Army Lessons Learned, 2008).

[100] Department of the Army, Field Manual 100-13, *Battlefield Coordination Detachment* (Washington, DC: Government Printing Office, 1996). The Battlefield Coordination Detachment (BCD) was formally established in 1995, with its primary mission to liaison between the senior Army and Airforce headquarters in a theater of operations to ensure close coordination of effects of air support, air defenses, and airspace coordination at the operational level. Although the BCD is generally comprised of Field Artillery officers, the BCD does not play a role in tactical field artillery operations within the division and is outside of the scope of this monograph.

[101] Thomas Torrance and Noel Nicolle, "Marne Thunder: The 3rd Division Artillery in Operation Iraqi Freedom," 2004, 4. "Determined to be as prepared as possible, the division artillery planned and executed multi-echelon live-fire training before the initiation of hostilities, confirming the DS battalions' ability to execute artillery-specific tasks. These exercises, combined with the already close integration of

and Afghanistan, artillery soldiers and units were, in many instances, given missions outside of their core competency of employing fires. While performing what have been coined "in lieu of" missions admirably, the ability of artillery to deliver accurate and timely fires synchronized with maneuver has been drastically reduced. The best illustration of the downward spiral of the field artillery as a branch was illustrated by a 2007 memo sent to the Chief of Staff of the Army, titled: *The King and I: The Impending Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commanders.* This memo, written by three former brigade combat team commanders highlighted the deficiencies within the field artillery branch based on their observations,

> No branch of the Army has suffered a greater identity crisis than Field Artillery, as a result of transformation, COIN-centeric operations and the non-standard manpower demands of OIF/OEF. The once-mighty "King of Battle" has been described by one of its own officers as a "dead branch walking." Now the Army is beginning to see real consequences in our ability to integrate fires with maneuver-an important capability for both COIN and High Intensity Operations… We believe that it's urgent that we take another look at the structure of this important combat arm.[102]

The former commanders cited combat training center statistics illustrating the deficiencies within artillery battalions and fire supporters within brigades at the combat training centers. These observations came from the culminating training event prior to deploying in support of operations in Iraq or Afghanistan. Fundamental issues included the general lack of planning for artillery support with the concept of an operation, a lack of training and certification for both howitzer crews and observers, and mismanagement of artillery personnel in conjunction of

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artillery within the brigade combat teams (BCTs), simplified fire support execution across the division. All three BCTs regularly trained with their artillery units integrated as part of ground maneuver formations and planned fires as a part of maneuver. Maneuver commanders within the 3ID trusted and respected their fire support officers and relied heavily on the field artillery to set the conditions for successful combined arms operations. Field artillery maintained its preeminence as an indispensable combat arm within the division. The Redlegs of the Third Division Artillery distinguished themselves repeatedly over the course of twenty one days of sustained combat during Operation Iraqi Freedom and won the admiration of maneuver commanders throughout the division, firing 13,923 155mm rounds and 794 MLRS rockets on their behalf. The soldiers of the Third Division Artillery performed their mission with a sense of excellence and professionalism, traveling farther and in a shorter amount of time than any campaign in history."

[102] MacFarland, Shields, and Snow, 1.

counterinsurgency operations. The senior officers cited more than "ninety percent of fire supporters are serving outside of their military occupational specialty and are uncertified and cannon crew drills are very slow and any type of friction halts operations." [103]

The operational tempo for brigade combat teams has remained high. Combat deployments ended in Iraq in 2011, but operational deployment requirements emerged in Europe, Korea, and Kuwait. Recent Combat Training Center trends continue to show similar issues as illuminated in the 2007 *King and I* memo. Field artillery units performed very poorly when faced with conducting major combat operations. Lack of training within field artillery military occupational specialty, lack of collective training above the section level, lack of planning and rehearsals all contribute to an overall lack of proficiency.[104]

These issues were the driving factors that led senior field artillery leaders to develop and propose a Fires Headquarters Force Design Update (FDU). The FDU involved several initiatives, with primary proposal being the reestablishment of the Division Artillery as a brigade level headquarters aligned to the division headquarters. The FDU was approved in late 2013, with the first of the new division artilleries reactivating in 2014.[105] The implementation order for the division artillery acknowledged that "after twelve years of persistent conflict, there is a continuing atrophy in FA skills and erosion of leader and professional development" within the field artillery.[106] The division artilleries were directed to plan, execute and assess all artillery training, to oversee all manning, professional development and evaluations of artillery leaders and soldiers, and to supervise the employment and maintenance of all related equipment. The division

[103] MacFarland, Shields, and Snow, 2.

[104] US Army, Joint Readiness Training Center Fires Trends briefing, 2014; US Army, National Training Center Fires Trends brief, 2015.

[105] Forces Command, 1; Scott Gourley, "Return of Division Artillery Stokes the Fires", *Fires* (November 2014), 1-4.

[106] Forces Command, 2.

artilleries were to do all of their directed tasks in order to provide the BCT commanders with trained, ready and lethal forces "to employ on the battlefield."[107] In late 2015, though, a fragmentary order to the division artillery implementation order was issued. This order suspended the attachment of several of the direct support artillery battalions to the division artilleries and kept full control of the artillery battalions with the respective BCT commander. Division artilleries without attached battalions were still responsible for establishing training and certification standards, while the BCT Commander maintains responsibility for his artillery battalion.[108]

Recommendations

Conclusion

The fragmentary order reducing the authority of the division artilleries offers mixed signals with regards to the initial guidance issued by the Chief of Staff of the Army. Historically, the Battles for Kasserine Pass and Operations Desert Shield and Storm demonstrated the evolving nature of employment of field artillery as doctrine, organization, and technology has advanced. Since the advent of modularity in 2003, and most certainly due to operations in Afghanistan and Iraq, the US Army has seen some of its core competencies atrophy. For the field artillery branch, these negative effects were magnified by the disestablishment of the division artillery. Without the brigade level headquarters to provide centralized control and oversight of training, manning, equipping, and employment, the conditions outlined in *The King and I* developed. Maneuver commanders lost their confidence in field artillery to accomplish its mission.

[107] Forces Command, 6-7; Gourley, 4.

[108] Forces Command. *FRAGO 1 to US Army Forces Command Division Artillery (DIVARTY) Implementation Order*. Fort Bragg, NC, 2015, 1-4.

The role of the division artillery is even more imperative in massing fires. This is critical as the US Army discontinues the use of cluster munitions, that were incredibly effective in Operations Desert Shield and Storm. Without cluster munitions, massing fires, or concentration of effects of "combat power at the most advantageous place and time to produce decisive results" is imperative.[109]

More broadly, the Battles of Kasserine Pass and Operations Desert Shield and Storm illustrate how the division artillery was critical in both training for and executing in major combat operations. Division artillery training ensured a high level of proficiency from subordinate artillery units. The training and readiness levels were woefully inadequate in the period without the division artilleries, between 2003 and 2014. Each case study demonstrated how common training set the conditions for success during combat operations by creating a baseline of skill, common understanding within the subordinate artillery units, and confidence from maneuver leaders. Both case studies also illustrate how the division artillery enabled increased operational reach, tempo and flexibility when combat operations began. These elements of operational art ultimately lead to victory in both campaigns.

The current US Field Artillery Commandant's stated vision is to "be the world's premier field artillery force; modernized, organized, trained and ready…"[110] Withholding the division artillery the authorities needed to ensure the highest levels of readiness for their subordinate battalions creates an unnecessary level of coordination which has been shown to hinder readiness. By either attaching or even assigning direct support field artillery battalions to the division artillery, enables the division artillery commander and his staff to ensure the training, readiness, and overall development of field artillery personnel.

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[109] ADRP 3-0, 4-1.

[110] USAFAS, 3.

Finally, field artillery leaders at all levels must work to build on the relationships they have fostered with their infantry, armor, and cavalry counterparts since the advent of modularity. The division artillery should be the advocate to the division and to the BCT commanders for all things related to the Fires Warfighting Function. A concerted effort to train, educate, and promote artillery to maneuver leaders is critical. Junior leaders must embrace the dual nature of training both under the division artillery, and with their supported maneuver element. The fully functioning and enabled division artillery, coupled with a robust plan to train and educate maneuver leaders on the benefits it brings works to achieve the Chief of Staff of the Army's number on priority of readiness. This establishes the division artillery as the link between strategy and tactics.

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