DOCTRINE AND ITS USE 1939-1943, SPECIALIZATION OF CAPABILITIES IN THE U.S. INFANTRY DIVISION

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This study analyzes the doctrinal development and implementation of emerging technologies and how they were integrated into infantry divisions of the United States Army from 1939 through combat operations in North Africa. The concept and discussion revolve around specialized units pooled at echelons above division. The thesis discusses infantry divisions and these specialized units responsibilities' and doctrine from the 1939 and 1941 versions of FM 100-5. The thesis concludes that despite apparent risks identified by tactical commanders in the prewar maneuvers, such as lack of organic capabilities and struggles relating to rapidly integrating specialized units, the U.S. Army believed the specialization concept was the best way to build a combined arms team. The results of Kasserine pass proved, operationally, that the U.S. doctrine which had been validated in the prewar maneuvers functioned, at the cost of placing tactical units at higher risk. The study looks to explain how doctrine changed in exercises, and how it was ultimately tested in combat.

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ABSTRACT

DOCTRINE AND ITS USE 1939-1943, SPECIALIZATION OF CAPABILITIES IN THE U.S. INFANTRY DIVISION, by Major Jacob W. Knell, 103 pages.

This study analyzes the doctrinal development and implementation of emerging technologies and how they were integrated into infantry divisions of the United States Army from 1939 through combat operations in North Africa. The concept and discussion revolve around specialized units pooled at echelons above division. The thesis discusses infantry divisions and these specialized units responsibilities' and doctrine from the 1939 and 1941 versions of FM 100-5. The thesis concludes that despite apparent risks identified by tactical commanders in the prewar maneuvers, such as lack of organic capabilities and struggles relating to rapidly integrating specialized units, the U.S. Army believed the specialization concept was the best way to build a combined arms team. The results of Kasserine pass proved, operationally, that the U.S. doctrine which had been validated in the prewar maneuvers functioned, at the cost of placing tactical units at higher risk. The study looks to explain how doctrine changed in exercises, and how it was ultimately tested in combat.

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CHAPTER 1

INTRODUCTION

When World War Two started the United States Army was ranked 17th in size and effectiveness compared to other world powers, according to *Newsweek Magazine*. The army's transformation from a force grounded in the past to one that was able to compete on the modern battlefield intensified in a period known as "Protected Mobilization."[1] Guided by leaders such as Army Chief of Staff General George Marshall, and Chief of Staff of the General Headquarters Lieutenant General Lesley McNair, the U.S. Army began the momentous task of updating to compete on the modern battlefield. Technical advances and lessons from world events made modernizing a difficult task. In 1940 both Marshall and McNair envisioned a small, agile force, similar to the American Allied Expeditionary Force of World War One, which could project American power, defend the nation, and assist U.S. allies abroad. The army of the future had to field formations small enough to keep shipping and logistical costs low, but possess enough combat power to succeed on the modern battlefield. McNair, as part of General Headquarters (GHQ), oversaw a series of massive war games that developed, tested, and proved new organizational models, leaders, and concepts. As the U.S. inched toward conflict, McNair recognized that the U.S. would need a more robust force. Leaders in the army debated the best way to combat the rapid armor attacks occurring on the European continent. When the U.S. entered the war in December 1941, the existing force that had

[1] Christopher Gabel, U.S. Army Center of Military History Publication (CMH Pub) 70-41, *The U.S. Army GHQ Maneuvers of 1941* (Washington, DC: Government Printing Office, 1991), 8-9.

been modernizing formed the cadre for a rapidly growing army. The field armies of the GHQ maneuvers became training armies responsible for the training of new divisions.[2] Some divisions that took part in the GHQ maneuvers, such as 1st Infantry Division, deployed soon after war broke out, and would be among the first American forces in contact. The doctrine and lessons learned in pre-war exercises would face trial by combat in North Africa.

American doctrine matured during this period. In 1939, on the eve of Germany's invasion of Poland, the U.S. Army published a new doctrine, Field Manual 100-5, Tentative Field Service Regulations: Operations. This 1939 version of FM 100-5 would serve as the guideline for mobilization and training during large-scale maneuvers in the summer of 1940. From the time of the release of the tentative doctrine, until its replacement in 1941, the U. S. Army solicited change from across the service. General Marshall also sought to bring individual branch doctrine under more centralized control. In May 1941, the War Department published an updated FM 100-5. It was validated through another set of wargames in 1941 and provided the doctrinal baseline for U.S. forces first engaged in combat in North Africa.

The Army understood that the world was changing. Emerging technologies had increased mobility and provided new weapon systems to consider from a doctrinal standpoint. Military thinkers tried to envision the battlefield of the future, and many believed it would be dominated by maneuver. The futurist’s best guess was predicated on what happened during the last war augmented by new technology. Theorists of the

[2] Mark Calhoun, *General Lesley J. McNair: Unsung Architect of the US Army* (Lawrence: University Press of Kansas, 2015), 220.

interwar years reviewed war plans for offensives in the closing days of World War One as a starting point for the next operational environment. Plan 1919, authored by the British Major-General John Frederick Charles Fuller, outlined techniques that would evolve into combined arms and provided a theoretical benchmark for U.S. planners. Fuller described "…a carefully mounted tank, infantry, and artillery attack should be launched, the objective of which is the zone of the enemy's guns: namely the secondary tactical zone some 10,000 yards deep…[once] penetration has been effected, pursuit should follow, the pursuing force consisting of all Medium tanks available and lorry-carried infantry." Fuller detailed how, following the penetration, a lighter more mobile force would continue the pursuit, and many of his ideas centered on the tank.[3] German combined arms practices, or *Stoßtruppen* tactics, also relied on artillery and infantry working together. Most militarily-developed nations seemed to understand that combined arms was the solution to the next conflict, but there was much debate as to the methods of combining new technologies in ways that took into account national strategic priorities, resources, personnel, and, perhaps most importantly, time. U.S. doctrine in the interwar years well illustrated this struggle. With the release of 1939 FM 100-5 General McNair had shaped the U.S. Army around the infantry-artillery team as the basis for combined arms maneuver. The fall of France in June 1940 changed all of that. The apparent success of German armored thrusts combined with lessons learned from its own large-scale

[3] Major General J.F.C. Fuller, *Memoirs of an Unconventional Soldier* (London: Ivor Nicholson and Watson Limited, 1936), 322–334, quote 330, accessed March 18, 2019, https://archive.org/details/in.ernet.dli.2015.77218/page/n3.

maneuvers caused the U.S. Army take a more inclusive look at its combined arms doctrine.

While both the 1939 and 1941 versions of FM 100-5 included the term "combined arms" the 1941 version was a much more inclusive document, but the updated manual was not without flaws. The 1941 maneuvers demonstrated that the U.S. Army had a basic idea of combined arms, but was still struggling on the details of implementing its doctrine. The final set of U.S. Army maneuvers prior America's entrance into World War Two ended in November 1941. Further doctrinal development as well as the painful shift from theoretical to execution happened when the Germans exercised a vote.

Two schools of thought emerged in the 1941 FM 100-5. The newest idea was in favor of generalization, which involved placing all elements of a combined arms team at the division level. The newly established armored divisions were the manifestation of the generalization concept. The more traditional specialization school of thought mirrored the 1939 doctrine and had the backing of General Marshall and McNair. Specialization involved the base infantry-artillery division augmented by specialized non-divisional enablers held or "pooled" at the GHQ level. This thesis examines the more traditional specialization theory and how it applied to the infantry division.

The Japanese attack on Pearl Harbor on December 7, 1941, and Germany's declaration of war against the U.S. on December 11, 1941 defined the enemy. After much deliberation within the executive and legislative branches, along with debate with our new allies, the United States settled on a "Europe First" strategy. The United States and the United Kingdom settled on North Africa as the initial commitment point of land forces against Axis powers. Following Operation Torch, the first major battle against

Axis forces would be in Tunisia where the U.S. Army would prove itself, but not without setbacks. In each engagement, commanders either used, adapted, or discarded the doctrine.

Kasserine Pass is often thought of as a decisive tactical defeat, an embarrassing first showing by a fledgling U.S. Army. Rommel launched his attack on the February 14, 1943 against an allied force that was at the end of its operational reach. Overextended and arranged in unfavorable, piecemealed defensive positions, American forces were ripe for a counterattack. Early German success had as much to do with their ability to mass forces as it did with U.S. positions and unpreparedness. Most U.S. divisions fought as part of the U.S. II Corps, commanded by Lieutenant General Lloyd Fredendall. II Corps' ability to rapidly reinforce a penetration and occupy deliberate positions are often overlooked. The battle included many tactical engagements, from initial contact and allied counter attacks near Sidi bou Zid on the Eastern Dorsal, through the eventual halt of the Axis advance west of Kasserine Pass. While American performance within this ten-day battle was far from perfect, U.S. reactions were doctrinally sound. Pooled GHQ units supported infantry divisions and were able to fight efficiently. When tactical situations placed units in positions with unsecure flanks, infantry divisions did not fight efficiently. The specialized tenants of "Antimechanized Defense" outlined in the 1941 version of FM 100-5 had worked in combat, and triangular infantry divisions could counter *Blitzkrieg*. The Combat Teams(CTs) of 1st Infantry Division played a large role in halting the armored, Panzer divisions of the *Panzerarmee Afrika*.

Leaders within the U.S. Army tried to solve the real world logistical, shipping, and financial constraints of an expeditionary army by fielding the majority of formations

along the lines of specialization. This thesis explores the debate around integrating emerging technologies, and how they were incorporated into doctrine. The thesis concludes that despite apparent risks identified by tactical commanders in the prewar maneuvers, such as lack of organic capabilities and struggles relating to rapidly integrating specialized units, the U.S. Army believed the specialization concept was the best way to build a combined arms team. The results of Kasserine pass proved, operationally, that the U.S. doctrine which had been validated in the pre-war maneuvers functioned, at the cost of placing tactical units at greater risk.

CHAPTER 2

DOCTRINE IN A CHANGING WORLD; INFANTRY AND IMPLEMENTATION OF SPECIALIZED UNITS

Germany's invasion of Poland sent a shock through the world, and leaders in the United States began to recognize an imminent crisis in the future. On 9 September 1939, General George C. Marshall, the U.S. Army Chief of Staff, approved the document *FM 100-5 Tentative Field Service Regulations: Operations* that set the groundwork for the army's contingency war preparations. *Field Manual 100-5: Operations* was tentative in nature because General Marshall solicited input from across the U.S. Army for future development. With input from branches and maneuver commanders, FM 100-5 formed a transitional doctrine, providing the foundation for a rapidly growing U. S. Army.[4] The foundation was tested and improved upon through maneuvers in 1940 and would become the basis for a 1941 version.

The manual focused on fighting an enemy that was ". . . armed, organized, and equipped along modern lines. An army capable of waging a successful war under these conditions will prove adequate to any emergency less grave."[5] It discouraged using the doctrine as a strict rule book; instead, the manual advocated for doctrinal methods to be applied in a continuously varied manner. Knowledge of the doctrine was essential for

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[4] Walter Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror* (Lawrence: University Press of Kansas, 2011), 143.

[5] Department of the Army (DoA), Field Manual (FM) 100-5, *Tentative Field Service Regulations: Operations* (Washington, DC: Government Printing Office, 1939), Prefix: II.

commander's decisions on how to adapt accepted methods to different situations. The process of using doctrine as a guideline became a hallmark of American forces throughout the war.

In 1939 the U.S. Army was in a state of change, restructuring its infantry divisions to a new 'triangular' design. The move to streamline infantry divisions and incorporate new developments in technology provided a snapshot into American doctrine. Doctrine authors attempted to incorporate enablers, such as tanks, anti-tank weapons, anti-aircraft artillery, and artillery as infantry support. However, with the attempt by General McNair and others to keep infantry divisions light and expeditionary, the relationship with these enablers was rocky and often idiosyncratic. A debate formed around providing infantry divisions that were expeditionary, but still possessing the lethality needed on the modern battlefield. Maneuvers in 1940 and events in Europe would expose glaring problems with the 1939 doctrine and be a catalyst for further change. The 1939 version of FM 100-5 was still grounded in the past, looking more like Plan 1919 of World War One, rather than the combined arms maneuver that was about to stun the world. The force structure, and enabler integration incorporated into the 1939 document featured the infantry-artillery team as the main combat force.

Roles and Responsibilities: Infantry and Enablers

1939 FM 100-5 categorized the army into two separate groups "arms" and "services." "Services" were charged with supporting roles, such as administration, supply, replacement, medical treatment, and evacuation. "Arms*"* would today be considered "Combat Arms," consisting at the time of Infantry, Cavalry, Field Artillery, Coast Artillery, Air, Engineer, and Signal Corps. The outlined role of "arms" was to

engage and win in combat directly. The manual charged commanders with coordinating and directing all arms to achieve the desired end-state.[6] In 1939 the U.S. Army still had not recognized tanks, tank destroyers or air defense as a separate "arm" or branch.

Infantry was the essential *arm* of combat in 1939. FM 100-5 defines infantry's role as: " . . . in the attack [to] close with the enemy and destroy or capture him; in the defense to hold its own positions, check the enemy's advance, and throw him back by counterattack."[7] The infantry's role, not necessarily its organization or armament, made it the primary combat force. The manner by which infantry achieved its mission was through fire, movement, and shock. "Fire," was defined in the manual as a tool to inflict losses or neutralize an enemy combat power. "Movement," not maneuver, described as closing upon the enemy to place fire upon him. "Shock" was a finishing move, or how infantry was to complete the destruction of the enemy. By combining these three principles, infantry was capable of limited independent offensive action, but needed assistance in defensive operations.[8] Rifle units were to maneuver, without other enablers, by using their organic weapons. In the offense, specifically, infantry was limited when operating against organized defenses and would require artillery or other enablers. The idea of infantry units being a self-contained maneuver force was unique to the 1939 document, and would be dismissed by commanders in coming wargames and combat alike. Defensive operations were most effective when infantry could form organized

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[6] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 5.

[7] Ibid.

[8] Ibid.

positions, and restrict the enemy's maneuvers with the use of terrain and other obstacles. Readers of the FM were cautioned that in the defense, infantry is vulnerable to artillery and air attack.[9]

Although not discussed in the 1939 FM 100-5, the infantry division was undergoing organizational change. Until the late 1930s U.S. Army infantry divisions, the Army's main large fighting formation, had been categorized as "square divisions." With four infantry regiments, divisions numbered between 22,000 to 28,000 men depending on the year. The square division was designed for attritional battle and not tailored for the "fire and movement" warfare that the 1939 doctrine specified. Generals Marshall and McNair began to implement a replacement organization, known as the "triangular division," in 1939. At just 15,000 soldiers, triangular divisions were smaller, consisting of only three infantry regiments, and more agile than the older square divisions. With heavy weapons task organized at echelon, the development of the 1939 doctrine occurred with the triangular division in mind. Every unit from company to regiment possessed three maneuver elements, plus the means to support them with both direct and indirect fires. The force structure allowed, regardless of the size of operation conducted, commanders to fix the enemy and maneuver to a flank while still maintaining a reserve. The concept of infantry conducting fire and movement saturated the doctrine.[10]

1939 FM 100-5 formalized the role of the tank. The manual laid out a framework of directing tanks as specialized units to be held by and "pooled" within the General

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[9] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 5-8.

[10] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 9-11.

Headquarters reserve. To give infantry units access to this combat multiplier, FM 100-5 directed GHQ reserve units to be habitually attached, forming relationships between the non-divisional tank battalions and infantry divisions they would support. The manual described only divvying out tanks to divisions in situations where the terrain was favorable for the use of armor. The manual did not envision tanks taking part in all phases of combat, and it recommended instead they only be used in the assault. Further, to maximize their full power, armored units were to be given clear objectives, and only employed with surprise and in mass in support of infantry operations. The authors predicted that if employed piece-meal, concentrated enemy artillery fire and anti-tank weapons would destroy these expensive machines. Tanks primary role was to assist the infantry, described as leading the assault echelon or passing the infantry assault to attack successive objectives in support of infantry. FM 100-5 emphasized armor's ability to shock the enemy in support of the infantry maneuver.[11]

FM 100-5 did not portray anti-tank weapons in an offensive role. Anti-tank weapons' main purpose within the infantry division was to increase the division's defensive power, even on extended fronts. Although the lack of anti-tank firepower was a problem identified in the 1940 maneuvers, it remained an ongoing problem that infantry divisions would struggle with during the North African Campaign.

Hampered by an absence of formalized doctrine through 1940, the Army had made little progress in anti-tank capability. Ground forces still relied on the towed 37mm anti-tank gun. This anti-tank gun was a copy of the 1936 German model, and was the

[11] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 6-7.

primarily used in a defensive or flank security role.[12] As a towed weapon the 37mm lacked the mobility to maneuver against an armored thrust quickly. Additionally, from 1937 to early 1941 infantry regiments within triangular infantry divisions only possessed one anti-tank company, consisting of only eight guns per regiment. Eight weapons per regiment and no divisional or corps enablers gave an infantry division in 1939, twenty-four total organic anti-armored weapons.[13] The lack of anti-tank weapons, as well as the practice of using such weapons as flank security, limited concentration of fire needed to combat an armored force at the regimental level. Similar to combat operations in 1918, infantry divisions were to use their artillery, defensive preparation, anti-tank mines, and terrain to combat enemy armor. The Army would continue to experiment with task organization of anti-tank units throughout mobilization and much the war. In 1941, the anti-tank debate would culminate in the formation of the Tank Destroyer branch. Following the 1940 maneuvers however, the lack of anti-tank capability would drive change in the task organization of the triangular infantry division.[14]

The Field Artillery's primary missions in the 1939 doctrine was "supporting Infantry and Cavalry by fire, engaging those targets which are most dangerous to the

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[12] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 31–33.

[13] Christopher Gabel, *Seek, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War II,* Leavenworth Papers No. 12 (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, September 1985), 5-6.

[14] Jonathan M. House, *Toward Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organization* (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Command and General Staff College, August 1984), 72-75, accessed October 10, 2018, http://usacac.army.mil/cac2/cgsc/carl/download/csipubs/house.pdf.

supported arms. [Giving] depth to combat by counterbattery fire, by attacking hostile reserves, and by dislocating the enemy's communication system and agencies of command."[15] This definition involves two main tasks. First, artillery directly supported operations of infantry and cavalry. Second, it provided general support to commanders by conducting counterfire to neutralize enemy artillery and other forces deep in enemy held territory. Different artillery units were described for each of the tasks. With the role of direct support the specialization concept was not applied to artillery. Leaders understood that the infantry-artillery team was needed at lower echelon. Depending on the task and echelon, artillery units had different equipment.[16]

Artillery in the infantry division changed significantly with the transition from square to triangular divisions. Under the square division, there had been three regiments of artillery, two 75mm regiments, and one 155mm howitzer regiment. With the transition to the triangular division, the amount of artillery organic to the division was reduced to a total of four battalions. Three battalions of light artillery and one battalion of medium artillery.[17] The light battalions supported the maneuver regiments, while the medium artillery was held at division level, supporting the deep fight.[18]

General Lesley McNair was the leading proponent of the ideas behind the revised doctrine. Becoming the head of GHQ, in charge of all units training and organizing

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[15] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 11.

[16] Ibid., 11-12.

[17] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 10–11.

[18] House, *Toward Combined Arms Warfare*, 73.

during Protected Mobilization, his observations would continue to influence Army doctrine throughout the war. Generals Marshall and McNair believed that heavy specialized weapons should be pooled in centralized units held above the division, and employed by the higher commander. The units would then only be committed when the enemy's main force had been identified, or other tactical situations required their use. The main result of this idea was a lighter and more mobile infantry division, but ones with limited capability. The theory of specialization gave the U.S. lighter formations that were more expeditionary, easier to supply and deploy. McNair believed that limited capability could be addressed as the tactical situation arose with the addition of specialized units. Additionally, with the principle of fire and movement, the lighter formations, in theory, could still fight and win against similarly-equipped enemies. However as the maneuvers would demonstrate, when faced with other combined arms teams or armored threats U.S. infantry divisions struggled.[19]

Concepts and Integration

Army doctrine for offensive and defensive operations in 1939 was still being developed. Although leaders were offensively minded, and incorporated fire and movement into the document, the manual still had an eye to the past. The FM introduced some modern concepts, but also retained contradictory ideas about the operational environment. Additionally the doctrine was vague, and offered few descriptions of how

[19] House, *Toward Combined Arms Warfare*, 72-75.

to implement the ideas put forth.[20] FM 100-5 remained an infantry-centric document emphasizing it as the premier fighting force.

The authors of the 1939 draft of FM 100-5 viewed offensive operations as a balance between fire and movement. Each offensive operation would incorporate fire and movement and would incorporate a main, or decisive, attack and a secondary, or holding, attack. The main attack was to possess the greatest possible offensive power, and was to be concentrated to bring about a decisive point. The secondary attack was designed to contain, fix, or cause the enemy to commit forces away from the area of the main attack. Each type of attack had distinctive characteristics, but shared the forms of maneuver envelopment, turning movement, penetration, or a frontal attack. Commanders were to transition between the forms of maneuver as the tactical situation changed. Using a combination of maneuvers, a commander was to prevent the attack from breaking up into a series of separate actions, and steer combat power toward a common objective to achieve success. [21]

Offensive operations were based on movement and characterized by envelopment, turning movements, and penetrations. Envelopment was the most preferred form of maneuver. In an attempt to move away from the frontal attacks of World War One, the manual took considerable time to address maneuvering out of contact to be successful in attacking an enemy's flank. An envelopment avoided attacking the ground selected by the enemy and sought to endanger his lines of communications and strike him in a decisive

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[20] Calhoun, *General Lesley J. McNair*, 186.

[21] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 128-129.

direction. A turning movement was similar, making the enemy "turn" out of prepared defenses to face an attack from a new direction. Envelopments and turning movements were to be used for the main attack. To be successful, main attacks relied upon the secondary attacks to fix the enemy in a position.[22]

If no assailable flank was present, a penetration would be necessary to create one. To penetrate the enemy line, troops would be required to create a breakthrough of the enemy's front, so enemy forces could not reconstitute his front on a rearward line. Troops would continue to attack until a commander determined whether the attack should become a turning movement or envelopment. Commanders were to keep a reserve ready of sufficient combat power to complete the breakthrough, and transition to an envelopment or turning movement.[23]

In keeping with the concept of the infantry as the main arm of offensive movement, General McNair's triangular infantry divisions would act as both the fixing and movement force. Infantry commanders at echelon possessed reconnaissance elements and heavy weapons to assist in independent action. Supported by artillery concentrations, infantry units were to assault their objectives under organic direct supporting fire, utilizing fire and movement. Alternating fire and movement allowed infantry units to bound onto their objectives.[24] A pool of assets held at the corps or higher would reinforce the assault force. Specialized units such as tank, anti-tank, anti-aircraft or additional

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[22] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 130.

[23] Ibid., 131-132.

[24] Ibid., 152.

artillery units would form the pool of non-divisional units. As the tactical situation dictated, these specialized units would be attached to infantry units for an operation. Depending on the mission, such as a defense or an attack on a hardened objective, the infantry division's composition could potentially change daily. However, in ways unanticipated by the designers, changing a formation's composition daily created friction. Supporting units proved to be unfamiliar with the area of operation, mission, or the supported unit causing inefficiencies. The process of integrating attachments varied between divisions due to varying working relationships, personalities, and how commanders used combat power in the high stress of combat. Attaching non-divisional units to different units, created tactical inefficiencies as the attached unit had to become aware of the new situation and the operating procedures of the supported unit.[25] To counter the inefficiencies, division commanders would attempt to form habitual relationships with attached units.

The term "combined arms" does not appear until page 137 of the 1939 FM 100-5. As discussed earlier the term "arms" refers to branches that do the fighting in combat, but tank and anti-tank forces were not included as an "arm of combat." It can be interpreted from the definitions in the 1939 doctrine, that combined arms in the 1939 doctrine is the infantry-artillery balance, on occasion supported by tanks. A section called "Combined Arms in the Attack" reinforced this interpretation. The section's description outlines artillery support to attacking infantry, and the close coordination required for a successful attack. The manual only discusses movement in terms of infantry and artillery, other

[25] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 152.

forces were added as an afterthought. In close combat, rifle units were to be supported by artillery and other rifle units as well as heavy weapons including tanks.

The manual provided contradicting ideas when discussing the use of tanks on the offense. Not seen as a separate arm, the new technology was employed like any other heavy weapon, and pulled into the specialized pool held above the division level. With the specialization theory in mind, the manual discouraged tanks operating beyond effective fire support provided by infantry. However, it goes on to state that armored units should not be tied too closely to foot troops, because that would cause a sacrifice in mobility. The description of tank assaults were similar to how they had been used in World War One, to break through defenses, destroying machinegun nests, thus allowing infantry to continue the breakthrough. The manual made the higher commander responsible for their employment and coordination. However, doctrine gave conflicting guidance for how to best employ them.[26] Since the supporting commanders were always infantrymen, and the fact that tanks were not yet integrated permanently into any type of division, armored units supporting role in the offense was ingrained in the doctrine.

The 1939 version of FM 100-5's concept of defense was still grounded in the lessons of World War One. Defensive operations were to be conducted "[to] gain time for the development of more favorable conditions for undertaking the offense or to economize forces on one front with a view to [concentrate] superior forces for decision elsewhere."[27] To be successful, an enemy was to be brought under fire as early and often

[26] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 140-142.

[27] Ibid., 170.

as possible, to limit his movement and retain the initiative. Infantry and artillery were the main focus of the defensive doctrine, with little or no mention other emerging enablers, or the use of pooled specialized units. How to best employ these two forces was the basis for defensive doctrine. With few exceptions, the 1939 method to conduct a defense ignored the threat of massed mechanized forces, and discussed, exclusively a linear battlefield, that lacked mobility.

Infantry was to form the main line for defensive operations. The manual advocated for a defense in depth that was to bend but not break under an enemy assault. As an enemy assault was halted, aggressive counterattacks were to restore friendly lines allowing forces to consolidate and return to the offense. As part of the defense in depth, the battlefield was split into zones; combat outposts, the main line of resistance, and reserve areas. Combat outposts were to provide early warning through reconnaissance and attrite the enemy as much as possible. The main line of resistance was to be on selected terrain that best favored the defense. This included anchoring flanks to natural obstacles, clear fields of fire for medium weapons, and concealment from observation.[28] Reserve forces were to be placed out of artillery range and prepared to counterattack.

Rifle units were to be the central unit taking part in the defense. Infantry was to defend positions by employing all weapons at their disposal, not relying solely on artillery to halt an enemy attack. As the enemy came into range, heavy weapons were to begin to engage the enemy, and as the enemy got closer all light weapons were to engage

[28] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 175-176.

until the assault was halted or driven back with the bayonet.[29] FM 100-5's description of rifle units defending with little support from other pooled units continued the narrative that infantry alone could be successful in the defense.

The infantry-artillery relationship was extremely important in the defense. Lower level tactical commanders lost their direct support artillery in favor of centralized artillery to ensure more control over ordnance and to shape the battle deeper with more significant effect. Indirect fire was to be placed in dead ground or on critical areas, to shape the direct fire fight for the infantry. The ability to mass fire on the enemy as the situation became more clear, would help attrite the enemy as it moved toward infantry defensive positions.[30] A commander of the division artillery would shift priority of fires to where they were needed most throughout the conduct of the defense. If an attack broke through combat outposts, artillery would then be concentrated to assist in the counterattack. Fires were designed to provide concentrations of fire only in critical areas, not the entire frontage.[31] Centralized control of artillery was thought to be necessary to best concentrate effects on the enemy's main attack.

There were some glaring holes in the doctrine even by 1939 standards. The use of tanks, anti-air weapons, and antitank or anti-mechanized units was discussed briefly, but their contributions lacked detail. The doctrine continued to be infantry specific, and these other enablers are envisioned to help infantry units accomplish missions.

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[29] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 189.

[30] Kretchik, *U.S. Army Doctrine*, 146.

[31] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 187-188.

Anti-tank or anti-mechanized defense techniques were perhaps the greatest shortcoming in the doctrine. The manual mentioned defense against mechanized formations when choosing where to defend, and emphasized how terrain could aid in slowing or canalizing a mechanized assault. However, there was no mention of anti-tank weapon employment. Anti-tank defense was only discussed for one paragraph. The limited discussion detailed artillery supporting rifle units against mechanized formations, with a few mobile artillery batteries who were to prepare to counter penetration.[32] Again, the infantry-artillery team was the only type of unit examined for massed anti-tank defense. How an infantry division was to stop a mass of enemy tanks would become an ongoing question within the theory of anti-mechanized defense

With the transitional doctrine of 1939 in place, the U.S. Army embarked on the largest wartime maneuvers to date. In the summer of 1940, new triangular infantry formations, along with GHQ specialized unit pools, travelled to Louisiana for war games where U.S. Army's new doctrine would be tested.

Proof of Concept: The 1940 Maneuvers

The Third Army Maneuvers of 1940 were a step towards large scale combat preparedness. The purpose of the maneuvers was "to train the new type of corps, composed of triangular divisions, in concentrations over long distances against a mobile enemy, and maneuver under combat conditions, both alone and coupled with combat aviation and mechanized forces." Small unit collective training was already completed at home station. With a focus on large scale operations, the maneuvers began in May of

[32] DoA, FM 100-5, *Tentative Field Service Regulations: Operations*, 190.

1940, incorporating over 70,000 soldiers, and was the U.S. Army's largest wargame to date. The wargames took the form of a series of corps sized engagements between the Red IX Corps and the Blue IV Corps with the exercise controlled by the Third U.S. Army, commanded by Lieutenant General Stanley D. Embick. Each engagement took place over a three-day period.[33] The two corps incorporated the new triangular divisions, provisional tank brigades, as well as motorized transport.[34] The movement of new types of units over long distances was a major training objective. The maneuvers took place in four phases between May 8th and the 24th.

The deployment to the training area over long distances was Major General Walter Short's IV Corps first test. Tasked to move his corps from Fort Benning, Georgia to Louisiana, a distance of 550 miles, Major General Short was given six days. to complete the movement. On arrival, it became the Blue Force and was tasked to face the Red IX Corps, in a series of four operations. Historian Christopher Gable provides a quick synopsis in his book *1940 Maneuvers Prelude to Mobilization*:

> In the first exercise, Red Army took the offensive, crossing the Calcasieu while Blue Army defended the river line. In the second exercise, Blue Army attacked, enveloping both flanks of the Red force. The third maneuver again saw Blue on the attack, this time with penetrations of the Red line at Slagle and Hornbeck. In the fourth exercise, the provisional tank brigade and the 7th Mechanized Cavalry Brigade were combined into a provisional division totaling some 382 tanks—the first armored division in Army history. This force spearheaded a Red Army

[33] Mark Perry, "Louisiana Maneuvers (1940-41)," HistoryNet, November 25, 2008, accessed December 6, 2018, https://www.historynet.com/louisiana-maneuvers-1940-41.htm.

[34] Major General Walter C. Short, "Final Report Third Army Maneuvers May 1940, " Headquarters, IV Corps, n.d.), 5.

attack, which the Blue force countered with an antitank defense extending as far east as Gorum and Flatwoods.[35]

In light of the infantry-centered 1939 version of FM 100-5, leaders observed negative trends within the training force. Lieutenant General Embick, made some quick observations before publishing a formal after-action report. Many commanders were not prepared for the pace of modern mobile warfare. Command and control was executed similarly to World War One, with senior commanders safe in their command posts. Officers were not leading from the front, relying instead upon maps and unclear reports through telephones. The limited communication and slow pace of command led to uncoordinated attacks and ineffective defenses.[36] Attempting to fight, using somewhat outdated command and control techniques, commanders struggled with the pace of modern mobile warfare.

The 1940 maneuvers occurred at a time of world upheaval. During these maneuvers Hitler's Wehrmacht demonstrated the power of armored assault against the western European powers. With a spearhead of nine panzer divisions, Germany smashed a French army considered to be the best in the world.[37] Despite being well-armed and prepared for an attack, the French were unable to stop the German *Blitzkrieg,* a fact present in the minds of those participating in the 1940 Louisiana maneuvers.

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[35] Perry, "Louisiana Maneuvers (1940-41)."

[36] Ibid.

[37] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 23.

Results of 1940 Maneuvers

Following the 1940 Maneuvers the Third Army published a formal review of the training exercise. Complete with analysis of each combat arm, the report made many suggestions for decision-makers, such as General Lesley McNair, to consider when adjusting organizational structures, equipment, and doctrine. Third Army's final report made sweeping recommendations that manifested themselves in future maneuvers and combat operations.

The report identified a lack of anti-tank capability within the infantry regiments. It praised the 37mm anti-tank gun as an admirable weapon, with the only criticism being that there were too few of them. The report recommended exchanging six .50 caliber machineguns in the infantry regiments for 37mm guns to strengthen anti-tank defenses. It also recommended that non-divisional units, such as the corps antitank battalion, should nearly double the number of 37mm cannons from thirty-six to sixty-four guns.[38] The authors did not realize it at the time, but the 37mm anti-tank gun was already outdated, and would struggle in the coming conflict against more heavily armored German panzers.

Infantry divisions in the exercise, combined capabilities of organic artillery battalions with infantry regiments, into units called Combat Teams (CT). This was to establish better working relationships within subordinate maneuver units, and provide infantry with additional capabilities. The CT's main component was the infantry regiment and had a semi-permanent relationship with a light artillery battalion from the division artillery brigade. Other enablers, such as tanks, anti-aircraft and anti-tank units, would be

[38] Short, "Final Report Third Army Maneuvers May 1940," 15.

attached in direct support to the CT as the tactical situation required. In 1st Infantry Division each CT consisted of the Infantry Regiment, a 105mm field artillery battalion, and other attachments depending on the mission. These CTs became the main maneuver units of the infantry divisions throughout the maneuvers. However, due to equipment shortages infantry CTs would enter the 1940 maneuvers with lighter 75mm artillery in the direct support role, and the 105mm battalion would fulfill the division medium artillery role. Slowly, as the army procured more heavy artillery, formations would reflect the 105mm in direct support, and a heavier 155mm in the general supporting role.

Third Army formalized the CT during the maneuvers. It became standard operating procedure for the artillery battalion and infantry regiment to march, bivouac, and initiate combat as a combined unit reporting to the regimental commander. Some regimental commanders thought that division medium artillery was also too sluggish. On certain occasions, regimental commanders advocated for the larger artillery to be included under the CT control in a direct support role.[39] Although the 1939 doctrine called for extremely centralized control of artillery, the CT was to prove to be an effective maneuver force in the 1940 maneuvers and beyond.

In the absence of clear doctrine "Anti-mechanized" defense tactics varied. Third Army described the main procedure as "defense against tanks massed for an attack within a sector." Third Army followed FM 100-5 doctrine by making extensive use of the canalizing terrain to help force enemy armor into terrain with clear fields of fire. Canalizing terrain limited armored forces throughout the exercise. Using pooled Anti-

[39] Short, "Final Report Third Army Maneuvers May 1940," 33-34.

tank units as flank security against more maneuverable mechanized or reconnaissance forces was also practiced. Third Army used rivers as natural obstacles to secure its flanks, added by its anti-tank units to guard key crossing sites. Flank security was conducted using corps level assets, freeing divisional units to achieve their objectives, but siphoning away the pool of available non-divisional units for counterattacks.[40]

In the fourth phase of the maneuvers IV Corps executed a deliberate anti-tank defense against IX Corps with a force of 382 tanks. From Third Army reports the defense was executed flawlessly, just as FM 100-5 suggested. Combat outposts were employed by a small infantry, artillery, and anti-tank force to destroy leading armored elements and disrupt infantry. On the main line of resistance, the armored assault was stopped using massed direct and indirect fires, and at the end of the exercise only eleven tanks had achieved any penetration. However, upon deeper examination there were some biases in the situation that aimed at proving an infantry formation could stop an armored thrust. The defending infantry of IV Corps had a defensive position that was described as perfect. The position had clear fields of fire over canalizing terrain with secure flanks, and the divisions had ample time to prepare. Mechanized forces of IX Corps, conversely were forced to conduct a frontal attack across canalizing terrain on an enemy strongpoint. In reality, armored forces would never attack in this manner in an actual conflict. IV Corp was able to mass over 120 anti-tank weapons, fifty 37mm guns and sixty-six .50 Caliber machineguns, against the advancing IX Corp armor. Additionally, rain further limited mobility of attacking forces, slowing the advance. The biases of the adjudication of anti-

[40] Short, "Final Report Third Army Maneuvers May 1940," 33.

tank and artillery engagements will be discussed in chapter three. However even ignoring adjudication prejudice, the attack seemed to be seeking to confirm the FM 100-5 doctrine rather than test it.[41]

Tank employment fell in along the specialization theory that FM 100-5 advocated. If terrain favored the employment of tanks in offensive operations, armored units were normally attached to a division or subordinate CT to achieve limited objectives. Third Army did express some frustration in not being able to "foster teamwork" because of limited time with the Tank Brigade participating in the maneuvers.[42] Attaching units at the lowest level possible increased teamwork and saw better results than large units attempting to coordinate movements. However, the ability to establish working relationships between supporting and supported units was a luxury that forces in combat would seldom have time for.

Third Army employed anti-tank battalions in line with the specialization theory, as a reserve to either reinforce its divisions or as detachments on flank security to prevent a counterattack. The authors did recognize that uncertainties realized during conflict may prevent the anti-tank battalions from responding quickly to a penetration. Leaders in the U.S. Army seemed to handwave the tactical issues that pooling specialized units at higher echelon might cause. In a rear area, higher headquarters would have to be involved more closely in the tactical fight. Operational headquarters, were inexperienced in the

[41] Short, "Final Report Third Army Maneuvers May 1940," 12-13, 39.

[42] Ibid., 34.

commitment and "vectoring' of battalion sized elements to reinforce tactical penetrations. This was to become one of the biggest problems in the specialization theory.

When looking at the main purpose of the 1940 maneuvers, which was to test and prove the concept of the new triangular infantry division, Third Army overwhelmingly approved. In the maneuvers the triangular divisions were recognized as flexible, and easy to maneuver. Their operational mobility was increased by the use of trucks, and the smaller divisions required a smaller logistic trail. Forces would travel most distances in the back of trucks, before dismounting 1000 to 600 yards from their objective and conducting operations. Triangular infantry divisions would go on to be the gold standard for new infantry divisions.

Advances in maneuver were the most significant contribution to the 1940 maneuvers. Operational and tactical commanders had been studying the German offenses in Poland, Norway, Belgium and France. American commanders observed and practiced faster paced warfare. The maneuvers and knowledge of current German operations led them to downplay reconnaissance ". . . no time has been wasted in feeling out the enemy. Objectives are assigned and then attacked without prior reconnaissance. Reconnaissance is conducted at the same time as the attack."[43] This attitude manifested itself in Third Army's description of offensive operations.

In a nod to the war in Europe, the 1940 Maneuvers advocated using the smallest force possible to fix the enemy, flanking, or envelopment maneuvers. Using the concepts of FM 100-5, deep envelopments or flanking attacks were preferred to penetrations in the

[43] Short, "Final Report Third Army Maneuvers May 1940," 39.

exercise. Commanders utilized motor transport to move the smaller triangular infantry divisions to envelop or turn the enemy. The Third Army command believed, in 1940, that a corps could carry out an operational envelopment of 100 miles or more. Like the German advance in Europe, by focusing on roads, key intersections, and dominating ground instead of enemy strong points, infantry divisions could drive deep into the enemy's rear. Fast movement into the enemy's rear area prevented the enemy from employing mobile reserves, because the enemy would be too busy trying to prevent further penetration. Penetrations to seize key terrain would allow friendly forces to consolidate gains and prepare for the next attack. The decisive maneuver of FM 100-5 was the deep envelopment, and executers were the infantry division augmented by pooled GHQ reserves. [44]

Conclusion

When General McNair, with the help of General Marshall, distributed the 1939 FM 100-5 to the U.S. Army they were looking for feedback. Before 1939, individual "arms of combat" had developed their own branch specific doctrine. The "stove-piping" of thought was recognized as a major problem by McNair. The "tentative" in the title represented the understanding that the doctrine was not perfect, and that each branch had developed concepts for how best to employ their capabilities. When 1939 FM 100-5 was distributed to the U.S. Army's leaders, they began to incorporate the ideas from specific branches, lessons learned from maneuvers, and knowledge of events from the new war occurring across the world.

[44] Short, "Final Report Third Army Maneuvers May 1940," 38-39.

While the 1939 FM 100-5 lacked adequate description of incorporation of emerging technologies, the document was a step towards the future. Recognizing that the 1939 FM 100-5 needed critiquing, and in an attempt to bring branch doctrine under more central control, General Marshall solicited input from across the army. This put tactical commanders in a unique position to influence employment of new technologies.

While advocates in the U.S. Army continued to develop the more generalized approach to combined arms, specialization of the more traditional infantry-artillery team reinforced with pooled enablers continued to be refined. General Marshall and McNair believed the triangular infantry division reinforced from a pool of enablers should form the basis of the modernizing army. The divisions were easy to deploy, and more expeditionary than the proposed generalized divisions. Triangular divisions, reinforced when necessary with pooled specialized units, could carry out their given missions more efficiently, while in theory operationally they required less of an aggregate force. Triangular infantry divisions would continue to have the support of General McNair and most importantly the General Marshal. With influences from the conflict in Europe and military leaders stateside the U.S. Army would release a new version of FM100-5. The specialization would have to share space with the emerging "generalization" as both were represented in the document. Both theories would be tested against each other in the upcoming 1941 maneuvers.

CHAPTER 3

PREPARING FOR WAR: 1941 DOCTRINE, MANEUVERS, AND ADAPTATIONS THEREAFTER

In 1941 the world was at war. Britain stood alone against the seemingly unstoppable Axis powers. The defeat of the highly respected French Army the previous year had ended much debate about the effectiveness of the *Blitzkrieg* style warfare. In May of 1941, the War Department released an updated version of *FM 100-5, Field Service Regulations: Operations*. The document incorporated current technological capabilities and was a leap forward in thinking and innovation. The release date allowed many units that would be taking part in the large wargames, scheduled for September, time to study the new doctrine. The timeline did not allow for units to practice the new doctrine on a smaller scale before the maneuvers. The manual was based on the "…information received from the world's battlefields and [the Army's] own growing experience with large-scale exercises." The manual incorporated lessons that commanders on the ground documented during the 1940 maneuvers as well as events in Europe, recognizing that more emphasis needed to be placed on combined arms. The employment of antitank, and tank formations was an integral part of the new document. While in the previous doctrine the specialization theory, focused around artillery and infantry were the main factors, in the 1941 FM the specialization theory had to share space with the emerging generalization, placing more organic capabilities in the division. Even with the developing concept of generalization, forces arrayed along the

specialization theory, with the infantry-artillery team as its core, were still an essential combined arms force on the battlefield.[45]

The new manual was considerably longer than the 1939 version. The length was a result of critiques received from across the Army. While the 1939 version had largely not incorporated branch doctrine, the 1941 FM strived to be a more inclusive document. Responses to events in Europe were also integrated, such as more emphasis on anti-tank defense. A "Chapter 12: Special Operations" detailed night, urban, mountain, jungle, and desert operations. Additionally "Chapter 15: The Division" discussed both square and the specialized triangular infantry divisions. It also outlined new structures for more generalized motorized, cavalry and armored divisions. Finally "Chapter 16: GHQ Tank Units" discussed the, McNair influenced, pooled GHQ Tank Units operating in the specialized role.

Like the 1939 version, the revised FM 100-5 envisioned a battlefield of maneuver, using mobility to strike quickly. It differed, however, in how the mobility was implemented. Mobility from different types of formations, not just infantry, were to be used to out maneuver an enemy, to gain access to his rear areas and force him to withdraw under pursuit. The document incorporated emerging technologies and moved away from infantry-artillery teams as the primary maneuver force. New fast-moving units would exploit gaps created as the enemy tried to meet penetrating forces. Even with these new formations the infantry-artillery team still formed the basic division, and represented a bulk of the fielded divisions. The 1941 FM100-5 was the best attempt to address the

[45] Calhoun, *General Lesley J. McNair*, 227.

current world at war. The authors struggled to incorporate the lessons observed from Germany's successes in Europe, as well as the U.S. Army's own experiences of large-scale maneuvers. The result was a doctrine that was built around the maneuver and speed of combined arms, tested in large scale maneuvers in 1941, and would carry the U.S. Army into combat in North Africa.[46]

New Relationships, Changed Roles, and Shared Responsibilities; 1941 Field Service Regulation

The authors of the 1941 manual had continued to study world events. Army leaders sought to incorporate lessons learned from the German *Blitzkrieg* along with those learned from the U.S. Army's own 1940 maneuvers. In the introduction, General George Marshall cautions commanders from using doctrine as a set of rules or methods, stating that the enemy could counter fixed patterns of operations. Marshall further challenged the reader to understand the doctrine and maintain flexibility in different situations. The surprisingly modern theory still carries on today.[47] This definition would set the tone for the combined arms focus of the doctrine.

Roles and responsibilities of different types of units were given a more equal role. Even with an equal role, "Arms of Battle" had not changed from the Infantry, Cavalry, Field Artillery, etc. No individual arm was seen to win battles, and combined actions of all arms working together was essential to success. The strengths of each of these

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[46] Calhoun, *General Lesley J. McNair*, 228.

[47] Department of the Army (DoA), Field Manual (FM) 100-5, *Field Service Regulations: Operations* (Washington, DC: Government Printing Office, May 22, 1941), Introduction II.

branches or forces would compensate for weakness in others, and lead the U.S. Army toward a more comprehensive approach to warfare. It was the commander's role to synchronize the different units and capabilities to carry out his assigned mission.[48]

Infantry was redefined from the "main combat arm" in the 1939 doctrine to the "essential arm of close combat." It cannot be understated that this was a large doctrinal leap based upon what appears to be a small redefinition. Looking to the past, as the industrial revolution had increased the killing power of modern weapons, infantry had replaced cavalry as the decisive force with which nations conducted warfare. In World War One, infantry was the only type of unit that could accomplish missions on the modern battlefield. Cavalry, the other traditional maneuver force, proved to be ineffective in the face of modern weaponry. The 1941 FM recognized that other types of units had been developed to counter modern defensive advantages. Technological advancement allowed other types of units, not just infantry, to be effective on the modern battlefield. Infantry's role remained very similarly defined when comparing the 1939 and 1941 doctrine, with one exception. Where earlier there was emphasis on the counter attack, the new manual stripped infantry of that responsibility. Counter attacking by infantry formations was not addressed. Additionally, where earlier rifle units were thought to be capable of independent action, the 1941 manual re-describes infantry as capable of "limited independent action." Similarly, the updated doctrine states that offensive power of infantry formations was decreased when faced with organized defenses. The manual acknowledged weaknesses in rifle units when faced with a combined arms opponent. The

[48] DoA, FM 100-5, *Field Service Regulations: Operations,* 5.

authors emphasized rifle units *must* be reinforced or supported by artillery, tanks, or other enablers to be successful. This increased the importance of the GHQ reserve units, and made them even more important to an infantry commander. With a more realistic approach to the defense, the 1941 FM 100-5 stated that infantry is most effective in organized defensive positions or situations where enemy's freedom of maneuver is restricted.[49] Infantry retained its importance in the 1941 FM 100-5, but the authors acknowledged that infantry formations must embrace combined arms in certain circumstances.

Maneuvers and combat reports from Europe had demonstrated the advantages of increased mobility for infantry units. The doctrine tried to standardize increased mobility for infantry in the form of motor transport. The mechanization of infantry units either by organic vehicles or attached truck formations, allowed rifle units greater tactical and operational mobility. This allowed rifle units to assist mechanized formations, or be used more effectively as a reserve force. It also aided in the rapid seizure of decisive objectives or operating in the enemy's rear area.[50] The ability to transport infantry units and their supplies quickly, over long distances, and arrive fresh and ready to fight was a direct lesson from the 1940 maneuvers and observations from events in Europe. The advantages of using motorized or mechanized troops were codified in U.S. doctrine.

By redefining infantry away from the only maneuver unit towards a more integrated approach, the authors attempted to reduce the barriers of individual branches

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[49] DoA, FM 100-5, *Field Service Regulations: Operations,* 5-6.

[50] Ibid.

that had developed their own doctrine. Instead of individual branches developing their own concept for implementation, as was the case before 1939, a more integrated approach created a force that operated along the same lines across branches. The 1941 version of FM 100-5 forced infantry commanders to think about incorporating a wide variety of enablers and emerging capabilities into operations.

The role, organization and employment of the tank was one of the most significant changes incorporated into the 1941 field manual. The 1941 doctrine mimicked the earlier 1939 manual in describing tanks with weaknesses such as sensitivity to obstacles and unfavorable terrain. While the manual did discuss separate armored divisions, separate tank units were still a mainstay of the 1941 FM 100-5. Held as specialized units in the GHQ Reserve units, independent tank battalions were assigned to infantry commanders as the situations dictated. Despite a more modern tone to the manual, tank on tank engagements were not discussed in the 1941 FM100-5. The role of destroying tanks was reserved for anti-tank units which is discussed later in this document. Pooled tank units of the GHQ reserve were given all of Chapter 16 in the new manual; however, the chapter was mostly a copy of the 1939 version. The chapter still used much of the language from the 1939 version, with tanks in an infantry supporting role. GHQ tank units would only to be used in the offense in support of infantry, or employed in mass in the main attack to assist the supported troops to reach their objective. GHQ reserve tank units represented a powerful maneuver force for commanders to draw from for specific missions. GHQ tank battalions were to be attached to infantry or cavalry units for specific operations. Another use of tanks was to fill the firepower gap as infantry units reached their final objective, providing close supporting

fires when artillery was not able to. In an exact copy of the 1939 doctrine, piecemeal commitment or dispersed formations made tanks easy targets for hostile artillery and anti-tank fire. Effective employment of tank units was dependent on terrain and an understanding of the enemy situation. GHQ tanks units were to support infantry as the essential arm of combat.[51]

Significant advances in anti-tank doctrine and its support to the infantry division had occurred, along the lines of the specialization theory, since the 1939 FM 100-5. Parallel to the 1939 FM 100-5, the Command and General Staff College released a manual titled "Antimechanized Defense." The manual outlined operations for anti-tank units within the infantry division. Authors of the manual acknowledged that infantry divisions could not be expected to operate alone against a mechanized enemy with only its organic anti-tank guns. To survive, the infantry division required substantial reinforcement. The manual sidestepped the argument of where the reinforcements would come from, but leaders such as McNair moved toward the pooling of anti-tank units in the GHQ Reserve, similar to the GHQ tank units. The manual outlined the difficulties in balancing protection of the division over a wide area verses countering an armored thrust.[52] In response to the report, as well as the 1940 maneuvers, and events in France, infantry divisions' organic anti-tank capability was increased in echelon. Under the 1941 task organization, each infantry battalion had an organic anti-tank platoon, each regiment

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[51] DoA, FM 100-5, *Field Service Regulations: Operations,* 278-280.

[52] Lieutenant General Lesley James McNair,*Antimechanized Defense (Tentative)* (Fort Leavenworth, KS: Command and General Staff School Press, May 22, 1939), 7, 13-14.

had an organic anti-tank company, and each division had an organic anti-tank battalion. The manual advocated for a "top down" anti-tank defense, each echelon providing support to subordinate units. The anti-tank battalions received a variety of missions, such as reinforcing regiments, flank security, or massing against an enemy attack. In addition to organic units, infantry divisions could be reinforced with the GHQ reserve tank or anti-tank groups. Non-divisional GHQ anti-tank groups supported divisions where needed, at the discretion of the corps or field army commander.[53] The memo's principles would dominate anti-tank doctrine through the 1941 maneuvers and early years of the war, with ideas codified in the 1941 version of FM 100-5.

Artillery's role changed extraordinarily little between the 1939 and 1941 FMs. The infantry-artillery team was still the main structure of the CT within the infantry division. The earlier manual's mission for the artillery of supporting maneuver units and engaging the enemy deep remained unchanged. Medium divisional artillery units in general support and light artillery units in direct support to CTs were still the norm in the 1941 FM 100-5. The authors also discussed artillery being positioned in a manner to rapidly achieve centralized fires across the entire formation. Perhaps, looking at the dispersed nature of mechanized warfare, the authors recognized that divisional artillery may not always be able to mass fires across the entire division. The manual tried to address the potential issue of widely dispersed tactical units by attaching, or pushing down, general support artillery to units to assist wherever possible.[54]

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[53] Gabel, *Seek, Strike, and Destroy*, 5, 13-14.

[54] DoA, FM 100-5, *Field Service Regulations: Operations,* 10-11.

The biggest change to U.S. artillery came not from doctrine, but in the equipment the triangular infantry divisions employed in their divisional artillery. When the triangular divisions were first constructed, their divisional artillery consisted of three 75mm battalions in the direct support role and one 105mm howitzers battalion in the general support role. However, as guns became lighter and more mobile, larger guns could accompany smaller units in the direct support role. Ultimately, the decision was made to replace the 75mm guns with 105mm howitzers, as they were produced, in the direct support role. The general support battalion was also up-gunned to 155mm howitzers. The larger artillery in the infantry divisions would be the final step from an artillery perspective, before the U.S. entered the war.[55]

1941 Updated Concepts and Integration

The 1941 version of FM 100-5 cemented many of the tentative concepts discussed in the earlier 1939 doctrine. The authors, for multiple reasons, realized that no individual type of unit could operate independently on the modern battlefield. The manual also attempted to integrate the individual branchs' doctrine. The result was a combined arms doctrine that attempted to incorporate enablers and emerging technologies. Artillery was the exception, with a well-defined role both for direct and general support. For the remainder of the FM, no specific branch or maneuver force had the premiere role, as it attempted to be as broad as possible when addressing operations.

The manual described offensive operations from a combined arms perspective. With a view of offensive operations as the primary means to maintain the initiative, the

[55] House, *Toward Combined Arms Warfare*, 73-75.

principle of fire and movement from 1939 was applied to larger units. Commanders distributed forces into main and secondary (or holding) attacks, akin to the 1939 manual. Main attacks were to receive the most support, while holding attacks were to prevent the enemy from reinforcing against friendly success. Secondary attacks were designed to hold the enemy and force him to commit his reserves early in an indecisive location, or to prevent enemy reserves from reinforcing against the main attack. The 1939 and 1941 versions also retained the types of offensive operations. Envelopments, turning movements and penetrations all remained, retaining the same principles as the earlier manual.[56]

The change from 1939 doctrine was in how the main attack was to be conducted. The manual incorporated current German tactical and operational successes, main attacks were to be situated on a narrow front using infantry, artillery, tanks, and other enablers in a combined arms operation. The main attack was also to have a sizable and deep reserve pools to exploit success.[57] On the other hand, secondary attacks were weaker, and to maximize combat power on the main attack they lacked depth, had few reserves, and contained few enablers. If a suitable direction for the main attack could not be determined commanders were to attack on a broad front and reinforce success with a strong reserve and by maintaining control of heavy supporting weapons. To maintain a combined arms mentality FM 100-5 described cooperation as being "facilitated by habitually associating

[56] DoA, FM 100-5, *Tentative Field Service Regulations: Operations,* 130-132; DoA, FM 100-5, *Field Service Regulations: Operations,* 99-103.

[57] Kretchik, *U.S. Army Doctrine*, 149.

the same units on the march and in combat."[58] Attacking on a narrow front in a combined arms manner, as well as reinforcing success with a deep combined arms reserve were the main differences in the 1941 offensive doctrine.

With similarities to the 1939 doctrine, 1941 defensive doctrine attempted to use emerging technologies effectively, and encompass the lessons learned in the face of possible enemies. The purposed and reasons for defense did not change from 1939 version discussed earlier. Mobility was discussed, but similar to the 1939 doctrine, mobility could easily be replaced with the elastic defense outlined in Plan 1919. Forces in the defense were to delay and bend just enough for reserves to maneuver on the advancing enemy. The doctrine contradicted itself when discussing this theory. The authors described a lightly held front with maximum forces in the reserve force for the counterattack. However, the authors went on to describe that under no circumstance should a position be abandoned unless authorized, and that this thinly held line should be held to the last man.[59] The U.S. Army would struggle with this inconsistency during Kasserine.

Similar to the 1939 doctrine, defensive operations were split into three lines. The 1941 manual gave each line a slightly different name, the "zone of resistance" replaced combat outposts, the term main line of resistance remained the same, and the 1939 reserve line was modified to the regimental reserve line. Within the zone of resistance, the manual advocated a mobile covering force to provide early warning, to delay, and to

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[58] DoA, FM 100-5, *Field Service Regulations: Operations,* 97-99, 109.

[59] Ibid., 152, 154.

disorganize the advance of the enemy. The covering force also prevented identification of friendly battle positions by the enemy.[60] The main line of defense was arranged as a defense in depth similar earlier manual. Anchored into existing obstacles, the main line required clear fields of fire and concealment from observation. The regimental reserve line held pooled reserve units. Units in the reserve line were to aggressively counterattack to stabilize the front. The manual attempted to use the principle of combined arms in the defense, mostly in the form of a counterattack. The combined arms approach attempted to address and counter enemy successful offensive operations "through a judicious combination of antitank weapons and obstacles, aided by artillery fire, combat aviation, and tanks, attacks by mechanized forces are broken up and halted as soon as they are disclosed."[61] With this description the authors are alluding to pooled units, because the table of organization for infantry divisions did not include many of the specialized units.

The question of anti-tank or anti-mechanized defense was one that had been lacking in the 1939 doctrine, but one that the U.S. Army attempted to address in 1941. Developments in armored warfare in Europe had shown the world how effective mechanized warfare could be. In 1939 General McNair published a tentative manual, titled "ANTIMECHANIZED DEFENSE (Tentative)." This manual would go through multiple revisions as McNair and others sought to develop a counter to the emergent mechanized formations used in the German *Blitzkrieg*. The manual formed the basis for the section entitled "ANTIMECHANIZED DEFENSE" within Chapter 10: Defense of

[60] DoA, FM 100-5, *Field Service Regulations: Operations,* 141-144.

[61] Ibid., 141-146.

FM 100-5 1941. The definition of antimechanized defense was carried forward from McNair's earlier publication: "Antimechanized defense includes defense against all armored combat vehicles- scout cars, combat cars, and tanks. The weapons and units primarily utilized for antimechanized defense usually are referred to as antitank weapons and antitank units . . . tank is used [for any] type of armored combat vehicle or unit."[62] The idea of massing pooled anti-tank forces against an armored thrust was formalized in 1941 doctrine. FM 100-5 described anti-tank guns echeloned in depth, with small numbers of organic guns deployed forward in the defense. Highly mobile reserve units then were to move to areas were the enemy was threatening to penetrate friendly lines.[63] Antimechanized defensive doctrine would be tested in the coming maneuvers.

During the refinement of the 1941 version of FM 100-5 Britain had been locked in significant ground combat with Axis powers in North Africa. The 1941 manual included Chapter 12 "Special Operations" which attempted to incorporate current trends from the conflict. Two sections that proved significant derived from examination of North Africa operations include "Combat at Defiles," and "Desert Operations."

A defile, or narrow passage through terrain with secure flanks, present a significant obstacle to a maneuver force. Restrictive terrain limits maneuverability and drives elements into close proximity, making them susceptible to artillery and massed direct fire. FM 100-5 characterized defiles as easy to defend but hard to attack. The preferred method for defending a defile was a defense in depth. A covering force would

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[62] McNair, *Antimechanized Defense*, 7.

[63] DoA, FM 100-5, *Field Service Regulations: Operations,* 160.

fight a delaying action in front of the pass, while positions within the defile would further attrit the enemy. Behind the defile, a concave battle position allowed for fires on the enemy from multiple directions. Additionally, the open space behind the defile would provide an advantage for mobile reserves in the form of maneuver space. The space behind the defile would also restrict the enemy flow and prevent his deployment into battle formations.[64]

While the section on operations in the defile would prove to be sound, the section on desert operations was a vast oversimplification. The section only consisted of a page of text and was primarily concerned about the availability and usage of water. The manual advocated for mechanized units because of their ability to carry more water while using less water than animals or dismounted infantry. The ability to conceal forces was underestimated, with an overconfidence of air operations to find and degrade enemy formations. Desert operations followed the same concepts of favoring envelopments or turning movements. "Desert terrain is often very advantageous for a wide encircling or turning movement by highly mobile mechanized forces…"[65] The problem with favoring these maneuvers was the manual's authors failed to grasp the size of the conflict that the U.S. Army would face. The amount of men and material that would be clashing in the coming conflict made wide sweeping maneuvers an exception not the norm.

General McNair's view of non-divisional units was incorporated throughout the concepts of offense and defense of the 1941 doctrine. Infantry divisions were defined as

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[64] DoA, FM 100-5, *Field Service Regulations: Operations,* 233-234.

[65] Ibid., 237-238.

the basic large unit to form corps or armies. FM 100-5 outlined the combat value of the infantry division as the ability to combine different enablers to fight for prolonged periods of time. Streamlined, self-contained, infantry divisions could hold a front in a secondary attack or contribute to the main effort as part of a main attack. An infantry division could be the secondary attack force with limited augmentation, since infantry divisions were thought to be capable of limited independent action. A commander could then use non-divisional units to either reinforce a division in the main attack or use those units as the reserve. Reinforced with GHQ units, such as tanks, tank destroyers, and aided by truck companies the infantry divisions were more mobile and hard hitting.[66]

The 1941 FM 100-5 was a vastly improved document when compared to the previous 1939 version. While the specialization theory shared the pages of the doctrine with the generalization school of thought, the majority of the forces the U.S. anticipated fielding would be infantry divisions supported by pooled specialized units. The doctrine attempted to incorporate the emerging tactics and technologies from a world currently at war. The U.S. was still far from ready for combat when the FM was published, and the army still had to validate the new concepts in another round of exercises in the summer and fall of 1941. The maneuvers would stretch over the southern United States, and be the final peacetime wargames before the country found itself pulled into the world conflict. The Louisiana and Carolina maneuvers of 1941 would distinguish future leaders and validate U.S. doctrine for the coming conflict.

[66] DoA, FM 100-5, *Field Service Regulations: Operations,* 253-254.

1941 GHQ Maneuvers, Proof of Concept or False Readings

On September 15, 1941, the United States Army began the largest war games undertaken by the U.S. Army prior to World War Two. The size of the maneuvers would dwarf those conducted in 1940. The GHQ served as the exercise control for the maneuvers. GHQ issued orders from the simulated higher headquarters, developed the scenario, as well as observed and analyzed the maneuvers. The maneuvers were to take place in four phases. Phases one and two would take place in Louisiana near the Texas border between September 15th and 28th. The U.S. Army took October to prepare for phases three and four of the maneuvers. From November 16th to 29th on the border of North and South Carolina, U.S. forces would conduct the last large-scale exercises under peacetime conditions.

The forces that would train during phases one and two included two separate armies, the Second and Third Armies, representing the generalization and specialization schools of thought. Reports from the time put the number of participants at over 355,000 men.[67] Second Army was the smaller of the two forces, with VII Corps of four infantry divisions augmented 2nd Cavalry Division. Third Army consisted of two corps, V and VIII, totaling six infantry divisions, augmented with IV Corps, consisting of one infantry division, and 1st Cavalry Division acting independently.[68] 1st and 2nd Armored Divisions would form I Armored Corps. The composition of I Armored Corps would change by phase because the armored divisions changed sides as the scenario developed.

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[67] Command and General Staff School, "Report on Second and Third Army Maneuvers," Fort Leavenworth, KS, 1941, 1.

[68] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 45.

Phase one of the maneuvers was an army sized meeting engagement as both the Red and Blue Armies executed offensive missions. For phase one, the armored I Corps augmented Red-Second Army with both 1st and 2nd armored divisions. Third Army had a much larger formation made up of ten divisions. The Red-Second Army attacked south, as it crossed the Red River while the Blue-Third Army attacked north to interdict. The Red Army envisioned VII Corps holding the front against Blue's larger forces, while I Corps made a sweeping envelopment on the western flank. The Blue Army conducted a deliberate move north with its corps on line. Blue made contact with the Red VII Corps and brought their superior numbers to bear.[69]

Blue forces in phase one utilized the infantry-artillery teams with pooled anti-tank units, as outlined in FM 100-5, to defeat an armored threat. The tactics seemed to prove the concept with General McNair commenting "An outstanding feature of the maneuver was the success attained in antitank defense due principally to guns . . . the efforts directed to the solution of the [anti-tank] problem now are approaching definite form." Many armored experts at the time believed that Blue success was actually a failure of armored doctrine, rather than the infantry division's anti-tank battalion superiority. Blue anti-tank battalions were credited very few tank kills, most Red tanks were destroyed by passive regimental anti-tank guns.[70] The failure of armored commanders to follow the

[69] Robert Citino, "The Louisiana Maneuvers," The National WWII Museum, last modified July 11, 2017, accessed January 3, 2019, https://www.nationalww2museum.org/war/articles/louisiana-maneuvers.

[70] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 89.

doctrine gave false readings on the tactical proof of concept for anti-tank doctrine of the specialization theory, as well as perceived inefficiencies of armored warfare.

In phase two of the maneuvers, a large and slow infantry centric Blue-Third army attacked a smaller more mobile Red-Second Army in the defense of Shreveport. A slightly different task organization included I Armored Corp (-) with 2nd Armored Division being attached to the Blue-Third Army. The Red-Second Army received two anti-tank groups and a parachute company from the pooled reserve. Numbers of the attacking Blue Army were 219,346 compared to the smaller defending Second Army at 123,451. The purpose of phase two was to evaluate if mobility could offset numbers in defensive situations.[71]

Second-Red Army's plan was to fight a series of delaying actions in a 100-mile defensive zone. Red's objective was the defense of Shreveport, by using demolitions to force Blue forces into defiles, and to rely on mobility to attrite Blue forces. To counter Red's defenses, Blue-Third Army advanced with its three infantry corps abreast in a slow methodical attack to fix Red forces, while it used 2nd Armored Division in a wide westward envelopment.[72] The only contact occurred on 27 September when Blue's 2nd Armored Division made a wide envelopment on the west flank. Between September27th and 28th, 2nd Armored Division turned the Red Army's flank and successfully enveloped the city. Probing around the more heavily defended western outskirts of Shreveport, 2nd Armored Division eventually made its main attack on the northern outskirts of the city.

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[71] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 96-97.

[72] Citino, "The Louisiana Maneuvers."

1st Armored Division and the two anti-tank groups attempted to hold the Red eastern flank, but were uncoordinated in the defense. Unfortunately, before Second army could move to its final defensive position or attack the extended 2nd Armored Division, GHQ was forced to end the maneuver. General McNair stated, "the war was halted, not by the tactical situation, but by the calendar."[73] As many commanders understand, time is a resource, and GHQ had run short of time in Louisiana.

The employment and task organization of both the Second and Third Armies were consistent with the doctrine from the 1941 FM 100-5 but up-scaled to army sized operations. Second Army's delaying actions, and 1st Armored Division in reserve mirrored "Antimechanized Defense" concepts. Employment of the infantry heavy, Blue-Third Army was also extremely successful. The Blue formation, supported with 2nd Armored Division, took the specialization theory and applied it to the army level. Armored division's shock, protected firepower, and ability to advance deep into the enemy rear area worked well while also supporting the advance of the larger slow-moving infantry corps.[74] Second Army, conversely, experienced blunders in execution leaving their western flank exposed, which gave Blue forces an open door for the envelopment. General McNair questioned why the river crossings on the western flank were not guarded, especially since the Red Army knew of the flanking maneuver.[75] Not

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[73] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 99-110, 111.

[74] Lieutenant General Lesley James McNair, Comments on First Phase-- Second Army VS Third Army Maneuvers, Camp Polk, LA: General Headquarters, Director Headquarters, September 22, 1941, 2d Phase, 41, accessed November 13, 2018, http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll8/id/4354/rec/20.

[75] Ibid., 2d Phase, 3.

using resources, either anti-aircraft or anti-tank groups as effective flank cover was a failure to employ doctrine or lessons learned from the 1940 maneuvers.

As a failure of doctrine by Second Army, the debacle on the western flank deserves a more in-depth analysis. The actions to the west and north of Shreveport showed the potential problems with pooled non-divisional units and anti-tank tactics. General Lear, the Second Army commander, used 1st Armored as his pooled reserve units. When faced with the 2nd Armored Division on his unprotected flank, General Lear did not effectively mass 1st Armored Division for counterattacks. Instead, he sent 1st Armored Division's infantry regiment and one anti-tank group to attempt to stop an entire armored division. In more disconcerting action, there were two anti-tank groups near this action but they failed to fire a single shot at Blue forces.[76] The debacle to the west of Shreveport reveals potential flaws in the 1941 doctrine. The main flaw was not recognizing the challenges of using pooled units without an overall commander. With no identified "battle space owner" or clear supporting commander, the GHQ anti-tank groups and the battalions from 1st Armored Division lacked a unifying commander. Coordinating multiple units in an army rear area proved more complicated than doctrine authors had anticipated.

With the lessons from the first two phases of the maneuvers complete, the U.S. Army took October 1941 to prepare for phases three and four of the 1941 GHQ maneuvers. October 1941 was a dark time for the powers involved in the raging global conflict. Germany had launched its evasion of the Soviet Union in June and even with the

[76] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 107-110.

wet fall weather, many expected the *blitzkrieg* to take Moscow at any time. German U-boats attacked shipping in the Atlantic. In the Pacific, Japanese government expansion into China brought its interests closer to conflict with the United States. Military leaders did not know the future, but many could envision a conflict on the horizon.

Between November 16th and 29th, on the border of North and South Carolina, the wargames between U.S. First Army and IV Corps tested mechanized mobility against numerical superiority. Some of the units that took part in the Louisiana wargames also participated in the Carolina phases of the maneuvers. The total size of Red-IV Corp, commanded by Major General Oscar Griswold, was estimated at 100,000. While the Blue-First Army, commanded by Lieutenant General Hugh Drum, was estimated at 195,000 men.[77] Again, the two sides represented the emerging schools of thought for implementation of combined arms. The Blue-First Army, formed in accordance General McNair's influence, was the traditional specialization force, with infantry-artillery teams, reinforced with non-divisional enablers. First Army consisted of three corps, with a total of eight infantry divisions, reinforced with six regimental sized anti-tank groups, three from the GHQ pool and three created from units within First Army. Additionally, First army had other attachments including reconnaissance units and other GHQ tank battalions. Controlled by corps and army headquarters the anti-tank units were pooled exactly as defined in FM 100-5. IV Corps-Red Army was a generalized formation, with combined arms in many of its divisions. IV Corps consisted of two infantry divisions, one

[77] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 127.

motorized division, and the subordinate I Armored Corps with two armored divisions, as well as two cavalry regiments one horse-mounted and one that was mechanized.[78]

Similar to phase one, phase three was a meeting engagement between the opposing armies. Both sides were given an offensive task. The Blue-First Army represented the traditional, specialization school of thought, and advanced west across the Pee Dee River in an attack to seize the town of Monroe. To accomplish his mission General Drum planned to use a slow methodical advance being led by reconnaissance units and special brigade-sized crossing detachments. The forward elements supported following infantry divisions as the main attack force. Drum used his anti-tank groups in a pooled fashion to neutralize Red armor, while his eight infantry divisions grinded down the Red-IV Corps. The mission of Red- IV Corp was to attack east against Blue forces crossing the Pee Dee River and hold the "international border." Major General Griswold planned a rapid advance with his three mobile divisions to the Pee Dee River. These mobile divisions would hold Blue forces at the bridgehead until the slower infantry divisions could reinforce. Once the infantry divisions took over containment at the bridgehead, the armored divisions would be free to concentrate and conduct decisive counterattacks.[79]

On the morning of November 16th, the two opposing forces began a race toward the Pee Dee River. Blue advanced with three corps abreast over a seventy-mile front. Red units raced forward with 2nd Motorized on the north, 1st Armored in the center and 2nd

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[78] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 133.

[79] Ibid., 134, 136.

Armored in the south. Red reconnaissance units advanced to within a few miles of the Pee Dee River before encountering Blue forces, and the battle began at that point. By the end of the day, with the aid of close air support destroying crossing sites, 1st and 2nd Armored Divisions had successfully contained Blue forces in the south and the center. In the north Blue had more success crossing the 1st and 26th infantry divisions and threatening IV Corps flank. During the night blue continued to build combat power on the west side, and by daybreak had six division and three anti-tank groups across the river. Lieutenant General Drum pushed First Army forward on the morning of the 17th, using the methodical infantry-artillery team and superior numbers to overwhelm Red forces. Red held for most of the day on the 17th. Red could not hold the north, and had to pull back to regroup. On the 18th Blue forces continued the attack and Drum's southern corps attempted to exploit success. Blue's relentless pressure met stubborn resistance in the center, but finally exploited the success in the north and threatened to envelope all of Red-IV Corps. On the 19th and 20th 1st Armored, attempted to envelope 1st Infantry Division on the far northern flank, but the attack battered hopelessly into two of Blue's antitank groups. With Red losses mounting and Blue numbers seemingly unstoppable, Griswold ordered a general retreat to his final defensive positions around the town of Monroe. At dawn on the 21st Drum assaulted this line across the whole front. By 8:30 A.M. Monroe had fallen, and GHQ called an end to the phase.[80]

[80] Thaddeus Holt, "Relax- It's Only a Maneuver," HistoryNet, last modified Winter 1992, accessed April 8, 2019, https://www.historynet.com/relax-its-only-a-maneuver.htm; Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 136-143.

The outcomes of phase three of the GHQ maneuvers were used to validate the doctrine of the time. However, the results had less to do with doctrine, and more to do with structural disadvantages, cheating, and adjudication problems. The doctrine that Drum had employed was more similar to Major General Fuller's Plan 1919 then the combined arms of the 1941 FM 100-5. The slow methodical advance by infantry-artillery teams did not follow one of the forms of maneuver in the newest document. But his use of mobile anti-tank units was of interest to leaders in the army. General McNair criticized Drum's lack of aggressiveness. Reports following the phase, cited little or no effort to out-maneuver hostile forces, and commanders often relied on frontal attacks to overwhelm Red forces. Additionally, coordination in the infantry-artillery teams was not up to standards, and further limited that pace of Blue forces.[81] By not reinforcing success on the northern flank earlier, or attempting to outmaneuver the limited IV Corps infantry divisions, Drum left himself open to 1st Armored Division's counterattack, extending the battle and taking unnecessary casualties. Lack of aggression was not the only criticism McNair leveled at First Army. Observers documented several incidents of Blue forces violating exercise rules. Notable infractions included departure of First Army assembly area before authorized. Observers caught Blue forces prepositioning engineer assets near the Pee Dee River to speed their crossing efforts. Finally, General McNair himself

[81] Lieutenant General Lesley James McNair, Comments on First Phase- First Army Versus IV Army Corps Maneuvers 1941. Fort Monroe, North Carolina: GHQ Director Headquarters, November 22, 1941, 678-693. 301-3.2: G-3 Journal and File, 1st Inf Div, 15-29 Nov 1941, accessed October 6, 2018, http://firstdivisionmuseum.nmtvault.com/jsp/viewer.jsp?doc_id=iwfd0000%2F20151021%2F00000003&init_width=600&recoffset=150&collection_filter=5d51b39f-52d3-4177-b65e-30b812011812&collection_name=5d51b39f-52d3-4177-b65e-30b812011812&sort_col=publication%20date&CurSearchNum=-1&recOffset=150.

stopped signal units laying wire across the Pee Dee River and tapping into civilian phone networks, which would have given Blue forces an unfair advantage in communication. Drum was also condemned for his planning. The depth of the order First Army issued to subordinates led McNair to believe that Drum had planned his mission early, effectively "gaming" the exercise and giving himself an unfair mission command advantage.[82] McNair reprimanded Drum following the maneuvers for his lack of aggression, and for the violations of exercise procedures. Anti-tank defense was still a topic of discussion. Observers commentated that the anti-tank units were receiving too much credit for stopping armored forces. An umpire with 2nd Armored Division commented "It is believed success of AT units [was] due to piecemeal [tank] attacks …rather than AT units' effectiveness." McNair emphasized to the public that 938 tanks from both sides were destroyed during the phase, with anti-tank guns accounting for ninety percent of the kills.[83] Even with the documented violations during phase three, and observations from his own headquarters, the results were used as validation for McNair's anti-tank doctrine.

Similar to phase two in Louisiana, phase four was a delaying action by the smaller forces of the Red-IV Corps against the larger attacking Blue-First Army. New battle lines were drawn and First Army attacked south towards the town of Camden. Drum's continued preference for a slow and methodical advance was again put on display. Blue was to advance south three corps in a crescent shaped formation, designed to squeeze IV Corps like a python, with 1st Infantry Division and three anti-tank groups in reserve.

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[82] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 149.

[83] Ibid.

Red's IV Corps had re-task-organized into more balanced combined arms teams, giving 1st and 2nd Armored Divisions and 4th Motorized Division tanks, artillery and infantry. The forward Red divisions were under orders to avoid decisive engagements that could turn into a drawn-out battle. Simultaneously, Red's two infantry divisions prepared two defensive lines around the town of Camden, where terrain and exercise boundaries limited the frontage Blue had to employ their numerical superiority.

On November 25, 1941 the battle began, Drum advanced south cautiously, with his three corps abreast. IV Corps began defensive preparations around the town of Camden. Griswold pushed his three mobile divisions north to conduct limited spoiling attacks. Red's attacks had the desired effect. 1st Armored Division on the far west flank successfully turned Blue's flank. In the center, 2nd Armored discovered a gap between the Blue II Corp, Commanded by Lieutenant General Fredendall, and VI Corps and exploited it with a combined arms team. The spoiling attacks stopped First Army as they attempted to understand Red's action. Drum made the false assumption that Red's defensive line was further north than Camden, and ordered an envelopment of the, wrongly suspected defensive line from the east. Luck was on Drum's side when a blue reconnaissance detachment captured a full set of Red plans during the night of the 25th-26th. By 0900 that morning Drum issued new orders focused on Camden. Griswold began to form his defensive line further south, but through miscommunication left a wide swath of his front thinly covered. On the morning of the 27th, 1st Infantry Division, reinforced by an anti-tank group attacked the thinly held front and made unexpected gains. By early afternoon they had occupied the town of Lancaster and were only thirty miles from First Army's objective. Blue thought they were close to winning, but as 1st

Infantry Division was entering Lancaster, 1st and 2nd Armored Divisions mounted another spoiling attack between II and VI Corps. 2nd Armored Division lost most of its strength fending off counter attacks, but 1st successfully drove deep into Blue held territory. Drum not comfortable with the penetration committed his remaining reserve and diverted units in a panic to contain 1st Armored, while 1st Infantry Division sat in Lancaster. In keeping with the plan, Griswold ordered the armored divisions back into the Camden perimeter. Drum finally tried to regain the initiative on the morning of the 28th, sending two divisions to reinforce 1st Infantry in the west, but much too late. When the attack started at 1500 the three infantry division met stiff resistance. Further action in the defensive perimeter was called off when GHQ ended the phase at 1620 on November 28.[84]

From a doctrinal standpoint, specialization demonstrated strengths and weaknesses, with General Drum and his corps commanders bearing the burden for the successes and failures of the doctrine they were attempting to validate. The infantry-artillery team was a known quantity in the equation, but not executed to standard. Drum failed to exploit success and was cautious in his use of his reserves. Since Drum was advancing on a broad front, by doctrine his reserve should have been in a position to exploit success. However, on two separate occasions Drum failed to exploit success. First on the 27th the 9th Infantry Division was more than twenty miles to the northeast of the fighting unable to respond to the spoiling attacks of IV Corps. With Drum's reserves too far back, he was also unable to exploit 1st Infantry Division's success quickly. In the face

[84] Holt, "The Final Scrimmage"; Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 155-166.

of unmatched success, 1st Infantry Division had to halt the advance or risk overextending itself.

The concept of specialization, validated in the GHQ maneuvers, was skewed by the general biases ingrained in how the battles were adjudicated. Formations taking part in the maneuvers fought according to a set of exercise procedures, and the results of individual engagements were adjudicated by umpires. The rulebook or "Umpire Manual" used for the GHQ maneuvers was a representation of the effects of how planners, such as General McNair, thought the modern battlefield would look. It also anticipated effects of new weapons and technologies against traditional units. The manual used a complex system of points, distances, and percentages to determine outcomes of individual engagements. Umpires would decide the outcome of engagements by comparing the firepower numbers of the units in contact. For attacking infantry to be successful an umpire had to assess at least 2-1 advantage, however if the defender was entrenched the ratio might need to be 5-1 for the attacker to be successful.[85] If there was no advantage both units would fight to a stalemate, the umpire would adjudicate casualties, and encourage units to maneuver to a flank or try another attack.

The adjudication of tanks and anti-tank units would prove to be extremely unrealistic, making all forces question the realism and fairness of the training. Horse Cavalry only sustained five percent casualties per attack when attacking deployed infantry. Tanks could not destroy anti-tank guns unless tanks overran them. The survivability of anti-tank guns was overestimated. The manual stated: "While armored

[85] General Headquarters, U.S. Army, *Umpire Manual* (Washington, DC: U.S. Army, June 10, 1941), 13-14.

attacks frequently are supported by machine guns and cannon and there will be losses of anti-tank guns due to such fire, antitank guns offer a difficult target, therefor losses will be comparatively small…" Additionally, the tank umpire was not the one to rule anti-tank guns out of action, meaning that tank fires could not destroy anti-tank guns. Anti-tank weapons were classified as the M2 .50 caliber heavy machine gun and cannon of all calibers. Additionally, when tanks were engaged by anti-tank guns, armored units could lose up to one tank per minute per gun.[86] General Devers, the chief of the Armored Force, assessment of the rules included his quote, "We were licked by a set of umpires rules."[87]

The ability of the infantry divisions to conduct anti-mechanized defense during the GHQ maneuvers reinforced the pooling concept. McNair's conclusion that "tanks can be stopped" by infantry divisions, especially when augmented with specialized anti-tank units was validated in the eyes of the U.S. Army high command. During maneuvers, the .50 caliber machinegun and 37mm gun were ruled capable of killing tanks. However, *Time* magazine questioned the potency of U.S. anti-tank weapons in an article "Is It Good Enough?" in which they referenced a 37mm cannon ordnance test that did not penetrate armor over and an inch thick at 100 yards. The 37mm cannon was obsolete and would struggle in the upcoming conflict.[88] General McNair understood the limitations of the 37mm gun, but had knowledge that the War Department anticipated fielding a more

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[86] General Headquarters, U.S. Army, *Umpire Manual,* 16-17.

[87] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 175.

[88] Ibid., 49.

powerful gun soon. Anticipating change, the umpire manual attempted to replicate the capabilities of systems in the future. The authors looking at the ordnance department had no intention of U.S. forces entering combat with the inferior weapon.[89] However using the anti-tank battalion in the infantry division as a mobile reserve allowed infantry commanders to use the echeloned defense and rapid counter attack outlined in FM 100-5.

The flawed adjudication combined with the inherent lack of infantry that the specialized units were fighting gave operational level commanders a false sense of the tactical efficiency in the 1941 doctrine. The adversity that the infantry divisions faced was due to commanders placing their formations in bad situations tactically. Frontages and adjacent unit coordination was a constant problem for infantry commanders, a "bad habit" that would follow the U.S. to combat. In phases three and four of the maneuvers Drum was fighting a force that was limited in infantry. As the umpire manual outlined, combined arms infantry had a distinct advantage against a pure tank formation. This would not be the case when U.S. forces were facing Rommel's Panzerarmee Afrika in Tunisia.

Results of the 1941 Maneuvers, Actions Set in Motion and Army Change

Following the maneuvers, organizations at all levels sent after-action reports to the McNair's headquarters. From the regimental to the army level, GHQ received reports from participating units. The Army evaluated issues brought to their attention from the maneuvers and prioritized the ones they thought most pertinent. Some concerns from tactical commanders were discarded in light of the operational and strategic picture. The

[89] Calhoun, *General Lesley J. McNair,* 230-231.

maneuvers provided justification for doctrinal updates, informal standard operating procedures, and larger structural changes. Japan's attack on Pearl Harbor gave urgency to the transitions. In the short amount of time between the maneuvers ending and the Pearl Harbor attack, GHQ set in motion changes across the Army. It used the maneuvers to confirm forming ideas and validate concepts that they already believed sound. Finding themselves thrown into global war, the U.S. knew what enemy they would face and anticipated how to beat them.

Observations submitted by the three infantry regimental commanders of 1st Infantry Division highlighted issues to improve upon along three general categories; combined arms, anti-mechanized defense, and impacts to their formations. All three regimental commanders recognized the Red forces lack of infantry. This affected the fight at the tactical level, making the CTs more effective than they thought was realistic. The group advocated for increased training with tank units to build a better combined arms team; "to gain confidence in them." The call for cross training was a common thread reaching back to the 1940 maneuvers. Comments about the piecemealing of tanks was another common complaint. Combined arms in regard to anti-tank defense and capabilities was a topic all three commanders discussed. The anti-tank units within their formations needed to be combined arms to protect the guns from attacking infantry. The anti-tank firepower within CTs of 1st Infantry Division was also a topic of discussion. All three commanders requested heavier armament for anti-mechanized defense, and that their artillery was also being used in the anti-tank role. There was considerable worry that in the face of a massed tank attack the organic fires of their Combat Teams would not be enough to stop the enemy. CT 18 specifically mentioned their relationship with the anti-

tank groups. Colonel Sherburn, the 18th Infantry commander, addressed the need for better communications and coordination with the anti-tank groups. He continued by stating that holding the reserve groups too far back would result in forward elements being significantly degraded before the anti-tank units arrived. The final issue mentioned was the unrealistically low casualties. The commanders mentioned that their CTs would have taken much higher casualties in real combat.[90] In short, regimental commanders painted quite different picture than the one GHQ was seeing.

1st Infantry Division's recommendations also covered a wide variety of topics. Complaints about the exercise included the exercise procedures, but also included helpful updates to techniques, tactics and, procedures. 1st Infantry Division, praised the integrated artillery of the CT concept. However, echoing the regimental commanders, Major General Cubbison, the 1st Infantry Division commander, highlighted the CT's lack of anti-tank capability. Cubbision's recommendation was more a generalization concept. He advocated increasing the size of the organic anti-tank battalion, and making it a combined arms unit, "habitually supported by infantry." In the maneuvers the division overcame the problem by employing light artillery for anti-tank missions under 600 yards. Cubbision continued to outline the "…great desirability of having incorporated

[90] 1st Infantry Division Regimental Commanders, After Action Report, Final Report on First Army Maneuvers, October-November 1941: 1st Infantry Division Regimental Commanders; 16th IN REG, 18th IN REG, 26th IN REG. Samarcand, North Carolina: 1st Infantry Division, November 30, 1941, 16-27. First Division Museum, accessed April 10, 2019, https://firstdivisionmuseum.nmtvault.com/jsp/viewer.jsp?doc_id=iwfd0000%2F20150521%2F00000011&query1=&recoffset=0&collection_filter=5d51b39f-52d3-4177-b65e-30b812011812&collection_name=5d51b39f-52d3-4177-b65e-30b812011812&sort_col=relevance&cnt=8&CurSearchNum=4&recOffset=0.

permanently in each combat team a battalion of field artillery…[The] Mission of this battalion: anti-armored forces and the speedy destruction of machine gun nests, etc." It is not clear whether Cubbision was asking for another battalion of artillery per CT for anti-tank missions, or if the current artillery should receive an expanded role. Either way, the lack of anti-tank firepower posed a problem that diverted the CT's artillery, "if full value is to be obtained from light artillery, the light infantry must be armed with weapons which are effective against all tanks, otherwise light artillery will be diverted from its supporting mission."[91] Cubbision recognized the importance of his organic anti-tank battalion, and the need to form habitual relationships with the GHQ anti-tank battalions. He believed to increase their effectiveness, anti-tank guns needed to be armored against small arms and air attacks. When faced with dispersed tank units, 1st Infantry Division did not have difficulty on the offense. When the infantry division faced the task-organized 4th Motorized Division outside of Lancaster however, it was a harder fight requiring coordinated lines and operations in depth to avoid being overwhelmed.[92]

The significance of these reports emphasized the concerns infantry commanders had about their ability to combat mechanized formations. Anti-mechanized defense, with organic capabilities of the triangular division proved worrisome. Division commanders,

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[91] Major General D. C. Cubbision, Notes on GHQ Maneuvers -First Phase. APO#1 Fort Bragg, North Carolina: Headquarters 1st Infantry Division, November 22, 1941, 640-641. 301-3.2: G-3 Journal and File, 1st Inf Div, 15-29 Nov 1941, accessed October 6, 2018, http://firstdivisionmuseum.nmtvault.com/jsp/viewer.jsp?doc_id=iwfd0000%2F20151021%2F00000003&init_width=600&recoffset=150&collection_filter=5d51b39f-52d3-4177-b65e-30b812011812&collection_name=5d51b39f-52d3-4177-b65e-30b812011812&sort_col=publication%20date&CurSearchNum=-1&recOffset=150.

[92] Ibid.

such as Cubbision continued to drive home the issue of habitual relationships with division and non-divisional units. Cubbision did not discuss any issues incorporating GHQ tank units, perhaps because his division had little contact with them in the maneuvers. Still, the issue of habitual relationships with pooled units was not new. Following the 1940 maneuvers, Third Army expressed similar annoyance in not being able to "foster teamwork" with attached tank units.[93] Limited organic anti-tank capabilities and relationships with non-divisional enablers would continue to be a point of frustration for infantry divisions.

The official GHQ report following the Louisiana phases of maneuvers provided interesting insight, when compared to subordinate organizations, about the direction Generals Marshall and McNair wanted to take the army. The report included some commonalities with lower level units, but also incorporated observations from the GHQ staff. The report highlighted a lack of combined arms when infantry and tank units worked together. Adjacent unit coordination and overextended frontages, as well as an overreliance on frontal attacks were critiques for infantry units. Artillery forward observers, attached to infantry units were extremely effective, and anti-tank units were not coordinated, especially at higher levels.[94] McNair detailed an in-depth re-training program to remedy the problems identified.

On November 30, 1941 as forces departed the training area and began moving to their garrisons, GHQ began to formalize a path forward following the maneuvers.

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[93] Short, "Final Report Third Army Maneuvers May 1940," 34.

[94] McNair, Comments on First Phase- First Army Versus IV Army Corps Maneuvers 1941, 5-11.

McNair concluded that Generals Krueger and Drum had proved the concept of pooling specialized units, working in conjunction with infantry-artillery teams, was sound, however it had not been successfully executed. Regarding emerging technologies, the Army instrumented sweeping changes to force structure, the biggest impact to infantry divisions would be to anti-tank units. Despite criticisms of the anti-tank groups' performance and the anti-tank doctrine from tactical commanders, on December 3, 1941 General Marshall, with the support of McNair, created the tank destroyer arm. All divisions were ordered to re-designate their anti-tank battalions as tank destroyers and relinquish them to GHQ. The old division anti-tank battalions would form the basis for the new quasi-branch. Even though the GHQ anti-tank groups had not performed satisfactorily, the decision by General Marshall to make Tank Destroyers groups self-propelled simply made the battalions too large to fit into the slim footprint of the triangular infantry division. The amount of logistic and shipping support for an infantry division with a self-propelled anti-tank division, would minimalize expeditionary advantages of the triangular infantry divisions. Reassigning the newly formed tank destroyers into the specialization pool was, according to McNair, the logical decision to make. Many division commanders had relied heavily on their organic anti-tank battalions, but their recommendations fell on deaf ears. Division anti-tank battalions had performed much better in the recent maneuvers than the GHQ anti-tank groups, accounting for a much greater percentage of tank kills. The infantry division's loss of the

organic anti-tank battalion to GHQ's new tank destroyer quasi-branch, significantly weakened of the infantry division's anti-tank capability.[95]

With the loss of such a significant asset, infantry divisions looked to build working relationships with the newly created tank destroyer battalions while adhering to the specialization doctrine. The absence of integrated enablers that had proved effective in the maneuvers, within the infantry division weakened the formation. A clear example of units trying to maintain their anti-tank capability, with the loss of their anti-tank battalion to GHQ reorganization, could be found in 1st Infantry Division. Division leadership tried to foster relationships with non-divisional units by holding seminars with tank destroyer battalions. Shortly before 1st Infantry Division's deployment to England, they held a seminar with the 601st Tank Destroyer Battalion in July 1942 to establish standing operating procedures. Lieutenant Colonel H.D. Baker, the 601st Tank Destroyer Battalion Commander, tried to establish roles and responsibilities for the different anti-tank assets within the division, and describe how tank destroyers would fit into a scheme of maneuver. The document established concepts such as priority of anti-tank support, means of destroying or harassing tanks, employment guidelines, and mission command structures. It stressed concealment of towed anti-tank systems, and the use of combined arms in the anti-tank fight to protect both regimental anti-tank units and the tank destroyers. The 601st's subordinate companies and platoons, were reliant on the use of reconnaissance to successfully vector in support their specialized tank destroyer units, deploying along the enemy's axis of advance. Within the infantry regiments,

[95] Gabel, *The U.S. Army GHQ Maneuvers of 1941*, 174-176.

commanders were still responsible for anti-tank operations within their areas of responsibilities. LTC Baker did mention, in the attack, the division's advance guard should incorporate tank destroyers. Additionally, the anti-tank platoon within the artillery battalion's main purpose was to protect the rear area.[96]

Successfully integrating the tank destroyer battalion into the infantry division could represent a significant increase in anti-tank assets, but tank destroyers were held at the GHQ reserve level. Corps and Army commanders would have to expertly use these assets to fill the void created within the all infantry divisions, not just 1st Infantry Division. Under specialization concept in FM 100-5, infantry divisions would have attached a GHQ tank destroyer battalion only as the tactical situation dictated. Each of the infantry regiments had anti-tank guns in their organic formation, but none existed at the division level. In the summer of 1942, each CT of 1st Infantry Division possessed only twenty-four 37mm guns in their anti-tank platoons, and six from the attached field artillery battalions. Additionally, other anti-tank platoons existed within the division headquarters. While the 601st, possessed twenty-four self-propelled 75mm anti-tank guns, and approximately thirty-four additional 37mm guns.[97] When a tank destroyer battalion was assigned to an infantry division, the anti-tank capability increased by a

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[96] LTC H. D. Barker, Lesson to Be Given by Lieut. Colonel H.D. Baker, 601st Tank Destroyer Battalion. Gidiantown Gap Military Reservation, Pennsylvania: 1st Infantry Division, July 1, 1942, 3-15, 1-15, 301-3.22 1st Inf Div, accessed November 10, 2018, https://firstdivisionmuseum.nmtvault.com/jsp/viewer.jsp?doc_id=iwfd0000%2F20141124%2F00000216&init_width=600&recoffset=200&collection_filter=5d51b39f-52d3-4177-b65e-30b812011812&collection_name=5d51b39f-52d3-4177-b65e-30b812011812&sort_col=publication%20date&CurSearchNum=-1&recOffset=200.

[97] Ibid.

third. However, the maneuvers demonstrated the problems with GHQ anti-tank groups operating in rear areas. Army and corps headquarters didn't possess the tactical expertise and situational awareness to commit the battalions to the correct location. While the tank destroyers were attempting to get into position, infantry regiments would be left to deal with the enemy with degraded anti-tank capability.

The specialization and generalization theories present in the 1941 FM 100-5 went in quite different directions with the experiences of the 1941 GHQ maneuvers. Infantry divisions were degraded and the pool that supported them got more specialized. While infantry divisions were degraded against tactical commander recommendations, this school of thought had the support of the U.S. senior command. GHQ Tank destroyers are an example of the specialization. With shipping and logistical demands, the tactical risk of specialization was accepted to have more divisions available for the coming conflict.

CHAPTER 4

SPECIALIZATION IN COMBAT; KASSERINE

Setting the Stage

By February 1943 Axis forces in North Africa were in a dire situation. *Generalfeldmarschall* Erwin Rommel's Panzerarmee Afrika had suffered decisive defeat at the battle of El Alamein, at the hands of the British Eighth Army, commanded by General Bernard Montgomery. Rommel was retrograding toward Tunisia where Italian and German reinforcements were building. Axis forces were facing not only the pursuing Eighth Army from the east, but also First Army composed of British and American forces advancing from the west. With allied forces on both sides, Rommel the "Desert Fox," made a gamble. Rommel had to neutralize one of the formations surrounding him. The Eighth Army to the east had already defeated Rommel, and therefore was a combat tested formation. The newly arrived First Army was relatively untested, and a multinational coalition. Seeing potential weakness in unity of command, and lack of combat experience, Rommel formulated a plan of attack. He would attempt to delay the Eighth Army in the east while mounting a surprise attack on the First Army in the west.

With the first objective of penetrating the Allied line to the west, Rommel would then advance on supply dumps in the Algerian town of Tébessa. With a subsequent objective 140 miles deeper, Rommel aimed at a penetration to unhinge First Army's line. The result would "force the British and Americans to pull back the bulk of their forces to Algeria." This would then "change the entire complexion of the North African theater of

War." A decisive defeat against First Army would allow Rommel to turn his attention back to the Eighth Army.[98]

The First Army that would face Rommel was a formation that had experienced only limited combat and was at the limit of its operational reach. The U.S. contingent in First Army was the American II Corps, commanded by Lieutenant General Fredendall, who had been a corps commander in the 1941 GHQ maneuvers. II Corps included three infantry divisions, an armored division, and multiple other pooled specialized units.[99] All four divisions in II Corps had taken part in the large-scale wargames the previous year, however much of their senior leadership had been replaced. Fredendall, an advocate for the specialization theory, pooled 1st Armored Division's maneuver elements and committed them similarly to GHQ Reserve units. The Battle of Kasserine Pass provided the first large operation in which infantry units, supported by specialized units would be tested in combat.

Following the successful landings as part of Operation Torch, First Army began pushing east on November 15, 1942. The narrow attack toward Tunisia eventually met determined Axis resistance at the end of the month, where the allied advance stalled. The combat in November 1942 was the U.S. Army's first contact with experienced German troops. The front widened as Axis forces counter attacked on the first week of December, and drove Allied forces to a winter defensive line. Both sides began to build combat

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[98] Rick Atkinson, *An Army at Dawn: The War in North Africa, 1942-1943*, vol. 1 (New York: Picador, 2002), 359.

[99] George Howe, U.S. Army Center of Military History Publication (CMH Pub) 6-1, *Northwest Africa: Seizing the Initiative in the West (*Washington, DC: Government Printing Office, 1957), Chart II.

power for the next engagement. Each side would launch probing attacks to test enemy strength. 1st Armored Division elements launched a limited attack in the far south of the line, in the vicinity of Maknassy, between January 31st and February 3rd. Due to the front widening, probing attacks, and perhaps ineffective leadership, Allied forces remained spread thin and undersupplied. First Army expected the Germans to eventually attack farther to the north, and any attack in the south against the U.S. II Corps was perceived to likely be a diversion.[100]

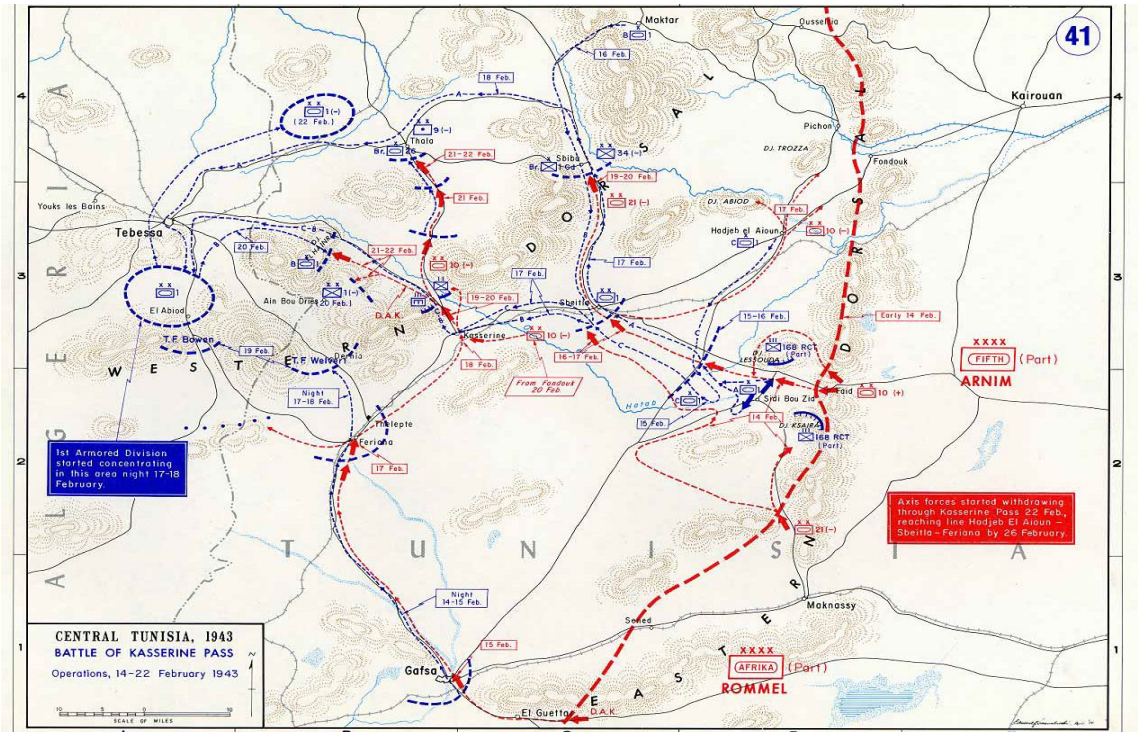

Figure 1. Battle of Kasserine Pass Overview

Source: WordPress, Central Tunisia, 1943: Battle of Kasserine Pass: Operations, 14-22 February 1943, *Historical Resources about the Second World War* (blog), September 2008, accessed April 30, 2019, https://historicalresources.files.wordpress.com/2008/09/campaign-in-northwest-africa-the-battle-of-kasserine-pass-14-22-february1942.jpg.

[100] Atkinson, *An Army at Dawn,* 332-335.

Tactical Failures in Opening Engagements

The opening engagement of the Battle of Kasserine Pass occurred in the vicinity of Faïd Pass and the town of Sidi bou Zid farther to the west. At 0400 on the 14th of February, elements of the 10th and 21st Panzer Divisions began their assault. With the aid of bad weather, German forces made it through Faïd Pass, and onto the open ground beyond the pass unopposed by 0630. In the open plain at the western exit of Faïd Pass, U.S. Forces had prepared defensive positions on isolated pieces of high ground. Facing the Axis attack were 2nd and 3rd Battalions of CT 168, 34th Infantry Division organized in accordance with the specialized capability theory. Both battalions received direct support from 2nd Battalion 17th Field Artillery. Additionally, CT 168 had at its disposal a number of units from II Corps pool of specialized units. Elements of Combat Command A (CCA), 1st Armored Division, as well as elements of the 701st Tank Destroyer Battalion were acting as a mobile "pooled" reserve to block and reinforce the with elements of CT 168 that held the pass. As the 10th Panzer Division advanced through the pass, they received significant close air support. By 0900 more than thirty tanks of 10th Panzer Division were already west of CT 168 positions, encircling the U.S. forces. 2nd Battalion, 17th Field Artillery, in its attempt to retreat, was caught in the open and destroyed by German air attack. CCA tried to relieve the pressure on CT 168 by launching a counter attack, but by 1000 armored elements of the Combat Command were receiving effective direct fire from two brigade sized German elements. By 1345, 21st Panzer Division, advancing from the southeast, completed the encirclement of CT 168. The mass of German armor forced CCA to withdraw from Sidi bou Zid to the town of Sbeïtla leaving CT 168 isolated in their initial defensive positions on their islands of high

ground. Despite relief efforts on the 15th of February by CCC of 1st Armored Division, CT 168 remained encircled and cut off. Some members of CT 168 attempted to escape and evade to the west to reach Allied lines, but most were captured and would spend the remainder of the war as German prisoners.[101]

The initial breakthrough of the Panzerarmee Afrika through allied lines was the result of failures at many levels. The tactical problems faced by CT 168 were the same tactical problems identified in the peace time maneuvers. Units being arrayed along a frontage that was too wide, was a common theme in the U.S. pre-war maneuvers. In Louisiana and Carolina more mobile forces had routinely threatened exposed flanks or gaps in the opposing slower infantry formations. Additionally, adjacent unit coordination was a continued, recognized weak point in analysis of the pre-war maneuvers. CT 168's defensive positions were separated by nearly ten miles, on isolated pieces of high ground. The isolated, non-mutually supporting, and widely dispersed defensive positions of CT 168, precluded them from massing fires on the pass. Another area in which CT 168 ignored FM 100-5 was in the section "Combat at defile." Specifically, U.S. forces only occupied a main line of defense and did not employ any advanced forces to the east of the pass to give advance warning or disrupt the Axis advance. Also, the employment of specialized units within CCA were not in accordance with FM 100-5 standards. According to FM 100-5 "the distance of the [defensive] position from the exit [of the defile] is such that converging fire of all arms can be brought upon the attacker before

[101] Howe, *Northwest Africa*, 410-422.

and during his [deployment.]".[102] CCA was too far to the rear in Sidi bou Zid to coordinate a defense with CT 168, and by the time they moved to meet 21st Panzer Division, it had moved through the pass. Poor defensive positions, lack of reconnaissance, and minimal coordination between CT 168 and CCA all contributed to the tactical failures at Faïd Pass.

Due to the operational situation CT 168 was placed in a tactically disadvantaged position. Allied forces had pushed east into Tunisia rapidly, extending their supply lines. As Allied units met stiff resistance the leading elements established defensive positions at their limit of advance. These positions left the front widely dispersed, and allied positions that, tactically, were far from coordinated and also extremely porous. However, operationally, CT 168 was employed exactly as FM 100-5 had envisioned. Although no tactical commander prefers to be in a disadvantageous position, CT 168 was occupying, operationally, a thin zone of resistance. FM100-5 discussed a forward zone built around a series of tactical localities, consisting a number of defensive area, each organized for all around defense.[103] While CT 168 failed to maintain mutual support of their positions, from a higher perspective their positions were to delay an enemy thrust. In case of an Axis breakthrough, other specialized reserves held within the II Corps or First Army Pool should then have been used to reinforce penetration of Allied lines at CT 168's positions.

Regardless of CT 168's operational or tactical employment, the largest failure in the opening engagement of Kasserine was related to intelligence. In meetings on

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[102] DoA, FM 100-5, *Field Service Regulations: Operations,* 234.

[103] Ibid., 141.

February 13th, the day before the attack, First Army had briefed General Eisenhower, then serving of commander-in-chief of Allied forces, that the main attack was not expected in the area. Consequently, Combat Team 168 and Combat Command A had not taken the threat seriously and were deployed "in no sense mutually supporting."[104]

Actions on the Western Dorsal

Key to the Western Dorsal range were passes at Sbiba in the north, Fériana in the south and Kasserine in the center. East of the passes II Corps established a screening force that was able to delay 10th Panzer until mid-day on the 17th. This allowed time for Allied forces to reposition along the passes. The Sbiba Pass was held by a strong contingent of the 34th Infantry Division, reinforced by CT 18 of 1st Infantry Division. In contrast, Kasserine was lightly held by "Stark Force," commanded by the 26th Infantry Regimental commander consisting, of an assortment of units including 1st Battalion, 26th Infantry Regiment, the 33d Field Artillery Battalion, 805th Tank Destroyer Battalion, and elements of 19th Combat Engineer Regiment. Defensive preparation at Kasserine had begun under the commander of the engineer regiment, but it was not coordinated across the amalgamation of forces defending the pass. The resulting defense did not have a zone of resistance, effective obstacles, mutually supporting positions, secured flanks, or an effective direct fire plan. German forces looked to exploit their early successes at *Faïd* Pass and drive toward Tébessa. Allied forces continued to reinforce their positions, and shift units south.[105]

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[104] Atkinson, *An Army at Dawn,* 333.

[105] Howe, *Northwest Africa*, 423-437.

10th Panzer Division's attempt to secure Kasserine Pass developed into a pitched battle. At 1015 on February 19th, elements of 1-26 Infantry spotted German infiltrators on the north side of Kasserine Pass. Following a back and forth fight through midday, the northern attack was turned back. However, German attackers could not be dislodged from some key hilltops. 10th Panzer's lack of penetration was mostly due to lack of German air cover and ineffective artillery support. Additionally, Colonel Stark received reinforcements to bolster his main line of resistance on the heights. He also formed a local reserve consisting of elements 801st Tank Destroyers and a tank platoon. At 1530 the Germans resumed their attack, this time on the southern heights. The 19th Engineer Regiment was able to stop an armored thrust through the pass with mines and anti-tank fire. By nightfall, both sides were entangled, with neither having gained a decisive victory. Throughout the night, each side patrolled and continued fighting. On the northern heights German infiltrators enveloped 1-26 Infantry and cut off Company A on the far northern flank. As 1-26 Infantry was enveloped the infiltrators continued to build strength on the western side of the pass. In the south, 19th Engineers fought off multiple probing attacks. Throughout the night, First Army continued to reinforce Kasserine with specialized units from its reserve pool. Reinforcing units consisted of 3rd Battalion 6th Armored Infantry, 3rd Battalion 39th Infantry, and elements of the 894th Tank Destroyer Battalion. In the darkness, Colonel Stark was reluctant to commit newly arrived forces to the pass. As the sun rose on the morning of February 20th, German forces were on both sides of the northern heights of Kasserine Pass. [106]

[106] Howe, *Northwest Africa*, 448-452.

With German forces on both sides of Kasserine Pass on the morning of February 20th, Colonel Stark looked to reinforce his defenses and take back the initiative. He ordered the newly arrived infantry battalions to counterattack in an attempt to reinforce the flanks of the pass, but both faced stiff resistance as Axis forces looked to continue the attack. Allied efforts were hampered as newly arrived units struggled to communicate and artillery ammunition began to run low. By 1630 the Germans attacked with the mass of two divisions, breaking through the pass. As dusk engulfed the battlefield, with communication and command broken, allied units withdrew under pressure, survivors making a disorganized retreat west toward Allied lines.[107]

Tactically, events within the Kasserine Pass provided additional problems with the specialization concept. As multiple units arrived in the afternoon and evening of February 19th in response to Axis pressure, "Stark Force" had difficulty in command and control. Failures in the process of integrating and coordinating the defense with elements of at least seven units, resulted in little to no synchronization in the defense or counterattack. Radio communications between units broke down, and Colonel Stark had to use runners to direct the tank and tank destroyer units near the pass, resulting in communications that were infrequent at best.[108] This issue combined with the uncoordinated nature of the original defense made the tactical command and control of the battle almost impossible. Attempting to incorporate specialized units into a chaotic defense had also been the case in phase two of the GHQ maneuvers. In phase two of the

[107] Howe, *Northwest Africa*, 453-456; Atkinson, *An Army at Dawn*, 371-373.

[108] Howe, *Northwest Africa*, 455.

maneuvers both anti-tank groups had also floundered in rear areas and struggled to get into the fight. The fact that reinforcements could not communicate by radio made Colonel Stark hold them back throughout the night, resulting in units on the front being largely on their own. Additionally, the uncoordinated defense resulted in units not repairing obstacles during the night. This left the minefields that had aided "Stark Force" on the 19th degraded and allowed Axis forces to bypass many of them on the 20th. The issues above contributed to the chaos of battle, and made working with new units more difficult, degrading the specialized abilities of the pooled reinforcements.

Tactically, units within Kasserine Pass struggled to maintain their position, but operationally they succeeded in holding the Axis advance for two days. With the enemy's main effort identified, following the tactical defeat at Kasserine Pass, Allied forces were able to establish a defense in depth. The pooled units that were rushed to Colonel Stark's aid, held the line throughout the 20th, buying time for the Allies. Allied forces west of Kasserine Pass served in the duties of the regimental reserve line, and were deploying exactly as directed in FM 100-5. According to FM 100-5, forces in the Regimental Reserve line, "if the enemy [had] attained such success that local commanders [were] unable to eject him, the higher commander must decide whether to counterattack with reserves at his disposal . . . or to withdraw to a prepared position in the rear."[109] As it became clear that Panzerarmee Afrika was going to break through, II Corps made the decision that a new line was to be formed. Allied forces established new battle positions on the two avenues of approach exiting the pass. Rommel kept advancing but the actions

[109] DoA, FM 100-5, *Field Service Regulations: Operations,* 156.

at Kasserine had slowed his advance, and the friction of battle was taking its toll on Axis forces.

Simultaneous to the fight between "Stark Force" and 10th Panzer Division on February 19th, the 21st Panzer Division, Rommel's main effort, experienced a more difficult fight in Sbiba Pass. The successful defense of Sbiba Pass demonstrated the success of timely integrated specialized units, combined with the massed fires from the infantry-artillery Combat Teams. Sbiba Pass was defended by a robust and well led formation, including elements of the 34th Infantry Division, CT 18 from 1st Infantry Division, and the British 1st Guards Brigade. 21st Panzer made contact with the Allied obstacle belt at approximately 1210, and simultaneously they were hit by artillery directed by CT 18. For the remainder of the day CT 18 held the west flank and engaged a formation of between thirty to forty German tanks. The German attacks closed to within 600 yards of the Allied positions, but the German forces were unable to take their objectives. As darkness set in, coordinated patrols entered the engagement area to ensure damaged German tanks were destroyed, reseat the minefields, and reinforce existing obstacles. Additionally, reconnaissance and flak battalions from II Corp reserve were employed to further protect the battle position's flanks.[110] At 0830 on the morning of February 20th, German infantry launched an attack that was supported by tanks at approximately 1020. CT 18 used similar artillery fire, obstacles, and anti-tank fire, as they used the previous day to stop the German armor. CT 18 then counterattacked the

[110] Howe, *Northwest Africa*, 453.

flank of the advancing Germans. By 1720 the German attack had stalled, and while CT 18 was still being shelled, Sbiba Pass was still in Allied hands.[111]

The effective use of massed artillery fire and mines allowed the Allies to mount a successful defense that held Sbiba Pass. Lieutenant John Williamson the Executive Officer of CT 18 recorded the following observations about anti-mechanized defense: "Determined infantry properly dug in, and on unfavorable ground can repel a tank attack if they have the protection of well-sited mine fields and artillery support."[112] The size of the force defending Sbiba Pass also contributed to the victory. The reinforcement of 34th Infantry Division's flanks also prevented 21st Panzer from flanking the defenders, as had happened in the Kasserine engagement.

The tactical success of Sbiba Pass contributed to operational consequences. Rommel's efforts were forced away from Sbiba Pass and toward Kasserine. Consequently, Allied commanders were then able to identify the main thrust of Panzerarmee Afrika once Sbiba Pass was recognized as secure. This assumption by Allied commanders allowed for the defensive preparations to begin to the west of Kasserine. At this point in the engagement Rommel's options were dwindling, however, he had one military option left to gamble.

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[111] Captain Don O. Currier, After Action Report, Operations of Combat Team 18 at Sbiba, Tunisia, February 16, 1943-March 9, 1943, Tunisia, May 26, 1943, 18-53, 301-INF(18)-0.3: Reports of Operations, 23 Dec 42-9 Mar 43, accessed April 25, 2019, https://firstdivisionmuseum.nmtvault.com/jsp/viewer.jsp?doc_id=iwfd0000%2F20151125%2F00000036&query1=&recoffset=0&collection_filter=All&collection_name=5d51b39f-52d3-4177-b65e-30b812011812&sort_col=relevance&cnt=41&CurSearchNum=2&recOffset=0.

[112] Ibid., 4.

Actions West of Kasserine

Allied forces had used the delay at Kasserine to continue to build a defense in depth. On the western road leading to Tébessa, 1st Infantry Division, including CT 16, formed the southern line of defense with eight infantry battalions, eleven artillery batteries and other attachments. Combat Command B of 1st Armored Division formed the western backstop from hull-defilade battle positions facing east. The coordination between CT 16 and CCB would prove crucial to the defense. Allied defensive preparations went unnoticed by German reconnaissance. On the morning of February 21st, the German 33d Reconnaissance Battalion reported to Rommel that there were minimal U.S. forces to the west. With this limited information, Rommel decided to launch his main attack with 10th Panzer north against the greater perceived British threat near Thala. Rommel simultaneously committed a smaller formation to secure his western flank, consisting of German infantry and Italian tanks without further reconnaissance.[113]

The German force attacking west was commanded by *Generalmajor* Buelowius and began movement from Kasserine Pass at approximately 1530. At 1630, the Axis force of over forty tanks and supporting infantry, were engaged by artillery from 1st Infantry Division, disrupting their movement and degrading the formation. As the attack continued northwest, the Axis force came under direct fire from CCB of 1st Armored Division's deliberate defense. The coordinated fire from two sides delivered by CT 16 and CCB, forced Buelowius to withdraw at 1800, loosing ten tanks to the American's loss of one tank. As the sun set, German forces began an infiltration to the southwest, but

[113] Atkinson, *An Army at Dawn,* 379; Howe, *Northwest Africa*, 461.

a storm caused the attackers to become disoriented for most of the night. However, two battalions of Panzer Grenadiers, avoiding detection in the severe weather, stumbled into the seam between CCB and CT 16. At first light on the February 22nd, German and American forces were intermingled along the southern wall of the valley. In the opening engagements, German forces captured five howitzers and three 40mm anti-aircraft guns from the 33rd Field Artillery. Despite this setback from the German assault, the U.S. lines held. At 1030 Buelowius, sensing his position was deteriorating, launched a supporting tank attack up the valley. The Italian tanks and assault guns made minimal gains and stalled similarly to the previous day.[114] By 1400 I and K companies from 3rd Battalion from CT 16 counterattacked, supported by elements of CCB. They drove, a reported, 200 German infantry from their infiltration positions, and recovered the lost guns from 33rd Field Artillery.[115] The success of the counter attack forced Buelowius to pull back to Kasserine Pass, and halted the German advance to the west.

The coordination between 1st infantry Division and CCB of 1st Armored Division was both an operational and tactical success. These two units had a working relationship and had, enough time to prepare for the coming enemy. Each unit had clear sectors within the defense, and both indirect fire and the direct fire plan allowed Allied forces to mass

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[114] Atkinson, *An Army at Dawn*, 379-382; Howe, *Northwest Africa*, 460-464.

[115] Captain Victory P. Brosokas, Battle Report, Headquarters Third Battalion, Sixteenth Infantry, 1st Infantry Division, APO #1 (North Africa), March 8, 1943, 2, 10-13, 301-INF(16)-0.3: Reports of Operations, 1 Jan 43-31 Jul 43, https://firstdivisionmuseum.nmtvault.com/jsp/viewer.jsp?doc_id=iwfd0000%2F20141124%2F00000364&query1=&recoffset=0&collection_filter=All&collection_name=5d51b39f-52d3-4177-b65e-30b812011812&sort_col=relevance&cnt=8&CurSearchNum=1&recOffset=0.

concentrated fires on the advancing formation. Even as German infantry tried to exploit the seam between CT 16 and CCB, the clear plan allowed for commanders to counter attack and hold the line. The events in the Tebessa valley demonstrated that, given time and a clear operational plan, specialized forces working together could conduct a defense in depth and stop a capable enemy.

Operational Success

Reviewing at the Battle of Kasserine Pass as the events between February 14th and 22nd, Allied forces experienced tactical setbacks in an overall successful defense. While it is easy to identify tactical mistakes made by individual units throughout the battle, Allied forces successfully conducted an operational defense in depth.

Following the events involving CT 168 at Faïd Pass, on the February 15th, General Anderson the First Army commander became so concerned about the area, he committed his reserves, the 1st Infantry Division and the remaining Combat Command, and Headquarters of 1st Armored Division. He also started movement of the 9th and 34th Infantry Divisions south, which aided in stopping Rommel at Sbiba and Thala. The shifting of forces south to block and delay the advancing Panzerarmee Afrika was the exact doctrine presented in FM 100-5, but in this battle, taken to the corps and army level. The multiple defensive actions throughout the weeks long battle served to delay and degrade Panzerarmee Afrika, grinding them to a halt.

Following events on February 22nd, Rommel was in a bad position. His attacks had been halted by Allied defenses that "had been skillfully executed." With fuel and ammunition stocks depleting and a constant stream of Allied reinforcements, a staff officer recorded Rommel's assessment:

> It appears futile to continue the attack in view of the constant reinforcing of the hostile forces, the unfavorable weather, which renders the terrain impassable off the hard roads, and because of the increasing problems caused by the mountain terrain, which is so unsuited to the employment of armored units. All this add[s] to the low strength of our organization.[116]

Rommel's Panerarmee Afrika called off further attacks, with 21st Panzer Division serving as a rear guard, the Axis units completed their retrograde through Kasserine Pass on the February 23rd.

The tactical failures and the prolonged defense in depth had cost American forces immensely, casualties were estimated at 6,000 with 4,026 captured by Axis forces. Additionally, Allied forces lost 183 tanks, 104 half-tracks, and more than 200 guns. The battle can appear as a German victory when comparing German losses of fewer than 1,000 casualties and 201 dead. However, American forces had participated in their first large battle against first-rate German forces, and were victorious in halting the enemy advance.

The battle that occurred around Kasserine identified many lessons the allies needed to learn. First, was that every attempt should be made to maintain unit integrity. The tactical strength of the infantry CT was in its ability to mass its organic artillery, and as a command structure to integrate the pooled specialized units. In contrast, tactically in combat, specialization proved difficult to implement. The specialization theory required tactical commanders to hold an understanding of the higher level plan, or be able to anticipate how individual units fit into the overall picture. With a weaker defensive front in the zone of resistance, the CT 168 commander, for example, should have recognized

[116] Atkinson, *An Army at Dawn*, 386.

that he may need to retrograde for a subsequent defense in depth. Kasserine Pass demonstrated that operationally the specialization theory worked, even at the tactical expense of the units in the zone of resistance.

General Eisenhower summed up the Battle of Kasserine years later while questioning Rommel's reasoning:

> Whatever Rommel's original intentions may have been . . . he had clearly failed in his objectives, and this in spite of the piece meal nature of the early resistance offered . . . If [Rommel] intended merely a spoiling attack to inflict maximum damage on our equipment, he had certainly inflicted serious wounds, without however affecting our strength more than temporarily. In any event, his sands were running out, and the turn of the tide at KASSERINE proved actually to be the turn of the tide in all of TUNISA as well.[117]

[117] General Dwight D. Eisenhower, "Eisenhower Report on the Tunisian Campaign: Summary of Campaign." June 21, 1965, 36-37.

CHAPTER 5

CONCLUSIONS; DOCTRINE IN TRAINING AND COMBAT

General McNair and other pre-war doctrine authors realized that combined arms were the recipe for success on the modern battlefield. When developing the doctrine for combined arms, leaders had to envision, to the best of their ability, all potential aspects of the future battlefield. Using this "best guess," and influenced by developments abroad and experience gained from large-scale maneuvers in the U.S., McNair made adjustments to doctrine and force structure. Constraints in budget, equipment, time, and shipping capacity also added to the complexity of the problem. Within operational and strategic constraints, the pooling of specialized units was seen as the best answer to provide units with added capability on the battlefield.

Most authors of pre-war doctrine saw the modern battlefield in terms of maneuver. Planners predicted dispersed movement of fast-moving units that could gain positions of advantage over the enemy. The war games in 1941 attempted to prove the mobility concept. Both the American doctrine and force structure were attempts to succeed in an environment of maneuver. Once forces were engaged in the North African theater, the tactical battlefield looked much different. The desert terrain was not as open and unrestricted terrain as prewar planners had expected. In actuality, U.S. forces spent more time in defensive positions, waiting as various units built combat power and logistical bases, than they did attacking the enemy. Additionally, the amount of forces being brought to bear prohibited the types of maneuvers that pre-war theorists had hoped

for. The restricted, canalizing terrain of North Africa and the scale of the conflict led to units fighting penetrations along narrow fronts with unsecure flanks.[118]

A juxtaposition existed. On one side it involved what pre-war planners thought the battlefield would look like and the army the U.S. designed to fight in that environment. On the other side, was the reality of the tactical and operational situation, as well as how commanders chose to fight with the resources they had. The doctrine was a useful guideline in the complex situations in which commanders found themselves. However, other constraints placed commanders in tactically disadvantageous positions. As the 1941 doctrine faced a trial by combat, commanders realized that tactically, specialization was a cumbersome concept to incorporate, but operationally it worked extremely well.

Infantry Divisions, Pooled Specialties and Their Relationships

Triangular infantry divisions were the building blocks of combined arms and the specialization theory. Looking back at battle experiences of World War One and Plan 1919, traditionalists such as McNair, believed that the infantry-artillery paring should form the basis of the combined arms team. Influenced by the assumption that U.S. forces needed to be expeditionary, McNair attempted to keep these divisions as light as possible while still being able to execute at least some tasks independently. Authors of the doctrine created the concept of pooling, and incorporated it into FM 100-5 as well as the task organization of the triangular infantry division to meet McNair's requirements.

[118] Calhoun, *General Lesley J. McNair*, 228.

When envisioning the U.S. Army in combat, General Lesley McNair's thought was to maximize deployability while getting the most of expensive specialized units. The specialization theory of pooling units involved holding units at higher echelons and rapidly employing them on battlefield where they were most needed. Economy of force would allow the army to get the most out of these specialized units while not needing as many. Tactical commanders felt that this left infantry units stripped of the necessary combat power to win on the battlefield. The tactical challenges included correctly committing pooled units against enemy breakthroughs, as well as command, control, and integration of the specialized forces. Commanders such as Colonel Stark at Kasserine Pass struggled with these issues. Even the simple task of units talking to one another became a major problem in the confusion of combat. Additionally, the timing of employing reinforcements mattered, as the stripping of capabilities from triangular infantry divisions made them more reliant on pooled specialized units. Colonel Edward Sherburn, the commander of CT 18 during the 1941 GHQ maneuvers, drove home this point: "There is a definite need for Line of Communication [with] Tank Attacker and Destroyer units for the forward areas. It is believed that the practice of holding TA units in reserve or for protection of rear areas will result in the combat element being cut off or badly damaged before help can arrive."[119] The maneuvers identified this potential issue, but prior to actual combat in North Africa, the strategic and operational priorities won out. The process of non-divisional units rapidly moving from "hotspot to hotspot" became a problem for tactical commanders. Each time a specialized unit arrived it had to

[119] 1st Infantry Division Regimental Commanders, After Action Report, Final Report on First Army Maneuvers, October-November 1941, 2.

be integrated with the supported unit. However, at the point that the two units began to work together efficiently, the pooled unit would often be called to another location. With a large pool of specialized units the supported formation may or may not receive the same pooled combination, each time a specialized unit was required. In the confusion inherent in firefights, relationships mattered, and the doctrine did not acknowledge that. As the U.S. Army moved out of North Africa and into Italy and France, tactical commanders became reluctant to break up working relationships, and began leaving non-divisional units attached on a day-to-day basis. Habitual relationships made the infantry division larger, more rigid, but with more capability. A U.S. infantry unit, augmented with units they had working relationships with, possessed greater capability. Commanders enjoyed the increased mobility and firepower when facing a wide variety of situations in combat.[120]

For units in North Africa, commonly in the defense, a tactical pattern emerged. CTs attempting to build combat power occupied a weak porous front with limited enablers. As the enemy advanced on their positions, the CT was unable to coordinate with the multitude of pooled units arriving to lend support. The inefficiencies led to tactical blunders, but ones that still inflicted damage on the enemy. Applying the defense in depth concept, the enemy would continue to attack position after position gradually grinding down. The enemy eventually fell victim to friction, defense in depth, and the American ability to mass over time.

[120] House, *Toward Combined Arms Warfare*, 106-107.

One of the main reasons Rommel halted his advance in 1943 was his inability to compete with the Allies capacity to mass units. Specialized units held in a higher echelon pool allowed operational commanders to implement the defense in depth detailed in the 1941 version of FM 100-5. The pooled units provided forces for a strong mobile operational reserve. Higher level commanders were willing to accept the tactical inefficiencies between infantry divisions and the specialized pooled units, because higher echelon commanders could fight, per FM 100-5 operationally and still succeed.

Tactical Risks for Operational and Strategic Gains

In the uncertainty of the interwar years, theorists understood that combined arms would be the concept of the future. However, real world constraints limited what a formation would include. Logistical, equipment, fiscal and shipping constraints all pushed the U.S. Army toward specialization. The theory held tactical risks, but leaders at the highest level decided to accept that risk to bring the greatest power to bear.

In the tactical defeats of Faïd and Kasserine Passes commanders lacked experience directing and integrating units above the division. The inexperience of II Corps directing pooled specialized units was a contributing factor to how forces were arrayed at these sites. Span of control, trouble integrating specialized units, and little unity of command, combined with the lack of tactical experience were all contributing factors to the poor tactical implementation of doctrine by "Stark Force."[121] However, when evaluating Kasserine Pass, not as a series of engagements but as a ten-day battle,

[121] Kretchik, *U.S. Army Doctrine*, 151-152.

America's doctrine was sound operationally, but proved cumbersome to execute tactically.

The 1940 maneuvers proved that the infantry-artillery team that made up the triangular infantry division was sound. This new type of infantry division, broken into Combat Teams, provided the combat power to execute limited independent action, while also providing the command and control to rapidly integrate the pool of specialized units. The maneuvers raised limited questions, tactically, about the implementation, as divisions struggled tactically without the pooled units. Nevertheless, the new formation was fiscally viable; requiring less manpower, the U.S. Army was able to put more divisions in the field. Despite tactical concerns, triangular infantry divisions did what the 1939 doctrine asked them to do operationally in the 1940 maneuvers.

The 1941 doctrine was put to the test in the GHQ Maneuvers. The exercise tested updated doctrine, infantry divisions, and the specialization theory against mobile enemies. Following the maneuvers tactical commanders warned of the possibility of higher casualties due to the less capable infantry divisions. Many reports requested better working relationships or standard operating procedures with the pooled specialized units. Other suggestions from tactical commanders included a call to include more capability in the infantry divisions, more along the lines of the generalization concept, which would provide more combat power to infantry units. Notwithstanding, the protests of tactical commanders, and the ingrained biases of the Umpire Rules, infantry divisions and specialized units performed well, operationally, in the 1941 GHQ Maneuvers. Despite recommendations from tactical commanders, the practice of pooling specialized units at echelons above the division continued through America's entrance into the war.

To leaders like Generals Marshall and McNair, the challenges of building an expeditionary army were complex. Conversely, as stated previously, within logistical, equipment, fiscal and shipping constraints, the U.S. had to assemble an army prepared for battle and trained for success, one that could get to the fight, and win when it got there. The force structure of the army reflected a constantly shifting set of priorities as leaders tried to modify the structure for peak performance, while limiting the shipping and logistical impact. The constraints of shipping, man-power and logistics made the specialization theory the only viable option to deliver large field forces onto battlefields around the world. As much as tactical commanders wanted every capability, all the time, strategic and operational commanders had to compromise, and assume tactical risks to the force in the process. Marshall and McNair attempted to mitigate the risk through doctrine, understanding that the army might experience tactical setbacks. However, they realized that the force structure and doctrine could operationally overcome any tactical setback.

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