

A Shift to Generalization within US Infantry Divisions: World War II Historical Analysis of a Common Problem

A Monograph

by

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Abstract

A Shift to Generalization Within US Infantry Divisions: World War II Historical Analysis of a Common Problem, by MAJ Jacob W. Knell, 40 pages.

Planners and leaders, throughout time, face a common problem. How best to organize a force for the next war? In a modern context, the challenge includes integrating capabilities at echelon, managing risk on the battlefield, and employing formations within shipping, manpower, and budgetary constraints. Planners in the twentieth century devolved into two theories, generalized formations, containing all capabilities at lower echelons, and specialized formations tailored to individual missions or operations. Cementing tactical biases, World War II was the conflict in which the US transitioned to generalization. In doing so, the US Army continues to struggle with integrating capabilities into its force structure. This study examines the implementation of emerging technologies within US infantry divisions, discusses the shift to generalization, and examines the causes. The thesis concludes that in generalizing the formation, planners never really solved the problems that specialization sought to address, invoking a recurring problem in the Army for years to come.

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Abbreviations

ADP	Army Doctrine Publication
AT	Anti-tank
CT	Combat Teams
CC	Combat Command
CCA	Combat Command “A”
CCB	Combat Command “B”
CCR	Combat Command “R”
FM	Field Manual
FSR	Field Service Regulations
GHQ	General Headquarters
IBCT	Infantry Brigade Combat Team
MPF	Mobile Protected Firepower
TD	Tank Destroyer

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Introduction: A Wide-Ranging Problem

Lieutenant General Lesley McNair, Chief of Staff of General Headquarters from 1940-1942 and other doctrine authors in the interwar years faced the challenge of how best to incorporate emerging capabilities within budgetary, shipping, and manpower constraints of the period, while preparing the nation for a looming war. US Army leadership during the interwar years of 1918-1941 fully adopted the concept of combined arms, defined as “no one arm wins battles. The combined action of all arms and services is essential to success.”¹ The 1941 version of Field Manual (FM) 100-5: *Operations*, by today’s standards, is a combined arms doctrine. When developing combined arms doctrine, leaders had to envision, to the best of their ability, all potential aspects of future battlefields. McNair adjusted US Army doctrine and force structure based upon developments abroad, experiences of World War I, and from large-scale maneuvers in the United States.

Constraints in budget, shipping capacity, manpower, deployment timelines, and forward logistics added to the complexity of the force structure problem. Within the operational and strategic situation, leaders saw the concept of pooling specialized units above the division level as the best answer in providing armies with new combined arms capabilities on the battlefield. Championed by General George Marshall, Army Chief of Staff from 1939-1945, and Lieutenant General McNair, specialization theory involved holding or pooling specific capabilities at echelons above division, in favor of cost, operational reach, and ease of training. These specialized units would rapidly employ on the battlefield where they were most needed. The US Army’s foundational doctrine, the 1941 version of FM 100-5, faced a trial by combat. Commanders realized that tactically, specialization was a cumbersome concept to incorporate, but operationally it worked exceptionally well.

¹ US Department of the Army, Field Manual (FM) 100-5, *Field Service Regulations: Operations* (Washington, DC: Government Printing Office, 1941), 5.

Criticisms of specialization theory by tactical leaders were far-ranging, including lack of capabilities within forward units, forcing operational headquarters into the tactical fight, and poor working relationships or cross training with specialized troops. General Headquarters (GHQ) documented these criticisms in the US Army's pre-war maneuvers, but their deficiencies were dismissed as failed execution. In 1941 GHQ conducted a series of maneuvers to test the doctrine and combat fitness of the Army. A series of four scenarios conducted in Louisiana and the Carolinas served as a testing ground for concepts, doctrine, and leaders, displaying the first major demonstration of American military power.² During the maneuvers, because of an attempt to validate specialization, forward divisions were left without capabilities at the forward line of troops. Stripped of their anti-tank battalions, infantry divisions' coordination with the experimental tank destroyers was slow. Additionally, the authority to release pooled units meant that corps and army commanders had to maintain a high level of situational awareness at the tactical level. Unfortunately, as post exercise reports state, many officers and headquarters struggled with communication and failed to maintain situational awareness. Lieutenant General McNair himself was critical of operational headquarters lack of action and the piecemeal commitment of specialized units.³ Tactical commanders within infantry divisions continued their criticism of specialization. Commanders highlighted the need for better cross-training with pooled units, and the need to improve working relationships to gain confidence in the new units.⁴ The

² Christopher Gabel, *The U.S. Army GHQ Maneuvers of 1941* (Ft Leavenworth, KS: Center of Military History, 1991), 6.

³ Lesley James McNair, *Comments on First Phase—Second Army VS Third Army Maneuvers* (Camp Polk, LA: General Headquarters, Director Headquarters, 22 September 1941), 3, 41, accessed 13 November 2018, <http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll8/id/4354/rec/20>.

⁴ Headquarters, 18th Infantry Regiment, 1st Infantry Division, *Final Report on First Army Maneuvers, October-November 1941: Office of the Regimental Commander, Headquarters 18th Infantry, 1st Infantry Division*, After Action Report (Samarcand, NC: 1st Infantry Division, November 30, 1941), 1–2, 20-23, First Division Museum, accessed 10 April 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.

three main criticisms outlined in prewar maneuvers continued into combat, generating inefficiencies that represented tactical risks on the battlefield.

Within the specialization theory, triangular infantry divisions were the building blocks of the developed combined arms doctrine. Built around the infantry-artillery team, McNair and other traditionalists kept these divisions smaller and lighter than the previous square divisions to make them as expeditionary as possible. Pre-war planners used specialization theory to give infantry divisions capabilities for anticipated missions while maintaining a greater number of deployable divisions within strategic constraints.⁵ In the first significant US ground action of World War II, occurring in vicinity of Kasserine Pass in North Africa, US infantry divisions' Combat Teams (CT)⁶ fell victim to the tactical inefficiencies of the specialization theory. The most substantial inefficiency involved the infantry divisions' lack of anti-tank capabilities. With insufficient anti-tank capabilities in forward units, poor coordination both laterally and up the chain of command, ill-established working relationships with pooled units, specialization had a poor showing in America's first ground combat.

Despite tactical inefficiencies, specialized units allowed operational commanders unforeseen flexibility. Specialized units pooled at the corps or army level represented a significant amount of combat power. Independent tank, tank destroyer, field artillery, and anti-

⁵ Mark Calhoun, *General Lesley J. McNair: Unsung Architect of the US Army* (Lawrence: University Press of Kansas, 2015), 264–268.

⁶ US Department of the Army, Field Manual (FM) 100-5, *Field Service Regulations: Operations* (Washington, DC: Government Printing Office, 1944), 6. There is debate about the term Combat Team (CT) versus the more contemporary Regimental Combat Team (RCT). Both the 1941 and 1944 versions of FM 100-5, *Operations* include the following designation: "To insure[sic] unity of effort or increased readiness for combat, part or all of the subordinate units of a command may be formed into one or more temporary tactical groupings (task forces), each under a designated commander. In each, the unity of tactical organizations is preserved as far as practicable. In an infantry division, the term *combat team* is usually applied to a task force consisting of a regiment of infantry, a battalion of light artillery, and essential units of other arms in suitable proportions" (paragraph 23 for the 1941 version of FM 100-5, *Operations*, and paragraph 22 for the 1944 version of FM 100-5, *Operations*). There is no mention of RCTs in period doctrine or other primary source material used for this monograph. The First Infantry Division archive, and After-Action Reports for pre-war maneuvers as well as reports of combat actions include CT when discussing regimental sized combat teams. Therefore, for this monograph, CTs will be used to describe combined-arms teams, task-organized below the division level.

aircraft battalions formed a powerful and mobile force typically not deployed to the front lines. Commanders used specialized units to reinforce the main effort or as reserve forces. When faced with an enemy attack, similar to actions near Kasserine Pass, Commanders used these forces to implement defenses in-depth, or to focus overwhelming combat power at a place of their choosing. This placed leading tactical units at considerable risk but allowed for the flexibility to avoid serious operational disasters. Using pooled units as a strong operational reserve allowed corps and army commanders to overcome the tactical inefficiencies with operational maneuver.

As World War II wore on, strategic factors and operational decisions changed the operational environment. The manpower crisis of 1943 resulted in the "90 Division Gamble," leading theater commanders to change their operational approach.⁷ As a result of General Dwight Eisenhower's broad-front strategy, units were on the front for extended periods. With fewer overall forces, US infantry divisions occupied wide frontages for longer periods of time. The lack of capabilities was a risk commanders were unwilling to take. To mitigate the risk, Commanders at the corps and army levels began to attach General Headquarters (GHQ) Tank and Tank Destroyer Battalions to the stripped-down triangular infantry divisions. Doctrinally these battalions had formed a reserve, pooled at echelons' above division as part of specialization theory, but the attachments represented a shift to more generalized formations. As the US Army in Europe advanced on a broad front, these attached units remained attached for extended periods, and added needed capabilities to infantry divisions. By the end of the war, generalization won out, and the US Army General Review Board recommended that armored units should become an organic part of the infantry division.

⁷ Maurice Matloff, "The 90-Division Gamble," in *Command Decisions* (Washington, DC: Center of Military History, 1959), 565. The 90-Division Gamble represented a calculated risk taken by General George C. Marshall, defined as the decision mid-war to maintain the US Army's ground combat strength at ninety divisions. The decision to limit the Army, ratified in May 1944 on the eve of the Normandy Campaign, added complexity to the strategic environment. Allied strategy, airpower, American technology, the balance between the American war economy and manpower, logistical and operational requirements, the needs of Allies, and sister services all played a part in the decision. Additionally, this strategic decision would shape commanders' operational approaches for the remainder of the war.

The shift from light, triangular infantry divisions to formations that possessed a greater range of capabilities was not only a result of combat experience but also of the changing operational environment. The process of incorporating anti-tank capability and Mobile Protected Firepower (MPF) into infantry divisions was gradual, but one that evolved from the secondary roles and advantages the specific platforms provided to infantry divisions. The experiences of US forces in the Normandy campaign and recommendations in post-war documents demonstrate the efficiencies of generalization. Despite the shift to generalization, the post-war boards did little to solve the problems that drove McNair towards specialization.

The United States finds itself in a comparable situation today. As the Army shifts focus from the brigade level, focused on counterinsurgency, to the division level focusing on large-scale combat operations, there is a rising debate about capabilities at echelon. The Army must accept specialization by modularizing some emerging capabilities to deal with the problems that drove specialization while maintaining the advantages provided by generalization.

Historical Context

The doctrine and organizations the US Army entered World War II with were an attempt to maximize both efficiency and effectiveness. General McNair, through experiences gained in World War I and interwar years, understood the complexity of the problem and was in an influential position to solve it. In the 1930s, McNair had worked on the Proposed Infantry Division, a precursor to the triangular infantry division. He anticipated the emerging logistical problems that mechanization posed to an expeditionary force. For specific missions, specialized units, such as independent tank and tank destroyer battalions, reinforced triangular infantry divisions, which were the main integrator of capabilities. The GHQ pulled capabilities from triangular divisions, most notably anti-tank battalions, to keep these divisions light. Additionally, the GHQ formed other specialized units into independent formations and held them at echelons above division. The Army classified these new capabilities as GHQ Reserve Units. These units

became a powerful reserve available to commanders but required operational level commanders, staffs, and headquarters to be more involved in the tactical fight. Pulling operational headquarters into the tactical fight led to missed opportunities and made large-scale tactical maneuvers unwieldy as corps commander's and staffs struggled with span of control beyond their capabilities. However, specialization created depth in friendly disposition, giving headquarters operational flexibility to deal with the tactical risk. McNair used specialization as the guiding principle in developing a doctrine to maximize the effectiveness of a combined arms team, while keeping the logistical needs as small as possible. McNair used specialization to keep infantry divisions as light, mobile, and easy to task organize as possible. Reinforced by prewar maneuvers, task organizing triangular divisions with pooled units was the baseline doctrine as the US Army entered World War II.⁸

America's first significant ground combat of World War II with Axis forces occurred during a ten-day period near Kasserine Pass, Tunisia in February 1943. While the common narrative of Kasserine is a stunning tactical victory for Field Marshal Erwin Rommel, the broader campaign was an operational success for US forces as well as for specialization. Representing the death knell for Germany in the theater, the unfortunate US tactical defeat in Kasserine Pass itself was part of an overall successful operational defense-in-depth, culminating in a decisive defeat of the *Panzerarmee Afrika*. The US Army learned from its tactical defeats, documented them in after action reports, and incorporated their findings in subsequent training and doctrine.

The Kasserine campaign, the series of actions from 14-23 February 1943 between the US II Corps and a combined German and Italian counterattack, affected changes to tactics,

⁸ Calhoun, *General Lesley J. McNair*, 263–266.

techniques, procedures as well as subsequent doctrine.⁹ The piecemealed nature of the American disposition and response demonstrated that maintaining unit integrity was essential to efficiency. General Dwight D. Eisenhower faulted the commitment of the 1st Armored Division in "dribblets" as a significant error in the battle.¹⁰ 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 Kasserine Pass itself, the ill-fated "Stark Force", named after its commander Colonel Alexander Stark, with 1st Battalion, 26th Infantry Regiment at its center did not possess the same capabilities of integration as a regimental sized CT. The battalion structure of "Stark Force" lacked key communication capabilities that prevented Colonel Stark from integrating specialized capabilities committed from II Corps. As a result, key capabilities including elements of 805th and 894th Tank Destroyer Battalions, as well as 3rd Battalion, 6th Armored Infantry, and I Company, 13th Armored Regiment from 1st Armored Division, were piecemealed into the battle, complicating command and control as they intermingled into the defense. Additionally, a battalion sized CT under Lt. Col. A. C. Gore from the Buffs, British 26th Armored Brigade, sat idly north of the pass, not integrated into the defense. When the main German attack hit the pass, mid-day 20 February, the widely dispersed Allied forces could not mass against the German attackers. Many US units became cut off, and the US withdrawal nearly became a rout.¹¹ American forces learned many lessons from Kasserine Pass.

⁹ Calhoun, *General Lesley J. McNair*, 276–278. Calhoun argues for the consideration of Kasserine as a campaign instead of a single battle. Pointing to the problems of focusing on individual tactical actions rather than viewing them as an integrated series of battles, he contends that readers lose context and play to a narrative of an American defeat. By looking at the operational picture, the action of Kasserine Pass is a battle that “culminated in a decisive American victory that resulted from an effective combined arms operational approach.”

¹⁰ Dwight D. Eisenhower, *Eisenhower Report on the Tunisian Campaign*, Summary of Campaign, (Ft Leavenworth, KS: Center of Military History, 21 June 1965), 50.

¹¹ George Howe, *United States Army in World War II, The Mediterranean Theater of Operations Northwest Africa: Seizing the Initiative in the West* (Washington, DC: Center of Military History, 1957), 443–456.

The inefficiency created by piecemealed units showed the need for a headquarters to integrate capabilities from the GHQ reserve. II Corps had fought with portions of five divisions during Kasserine but never intact, which created a muddled command structure.¹² The division headquarters needed to accept GHQ and other reserves and parcel them to regimental sized CTs. The concept had been present in doctrine since 1939 and continued through the 1941 and 1944 versions. In the Normandy campaign, divisions received capabilities and integrated them into their subordinate regimental sized CTs. Supported by a parent division, the regimental sized CT evolved into the main echelon for integrating capabilities during the Normandy campaign.

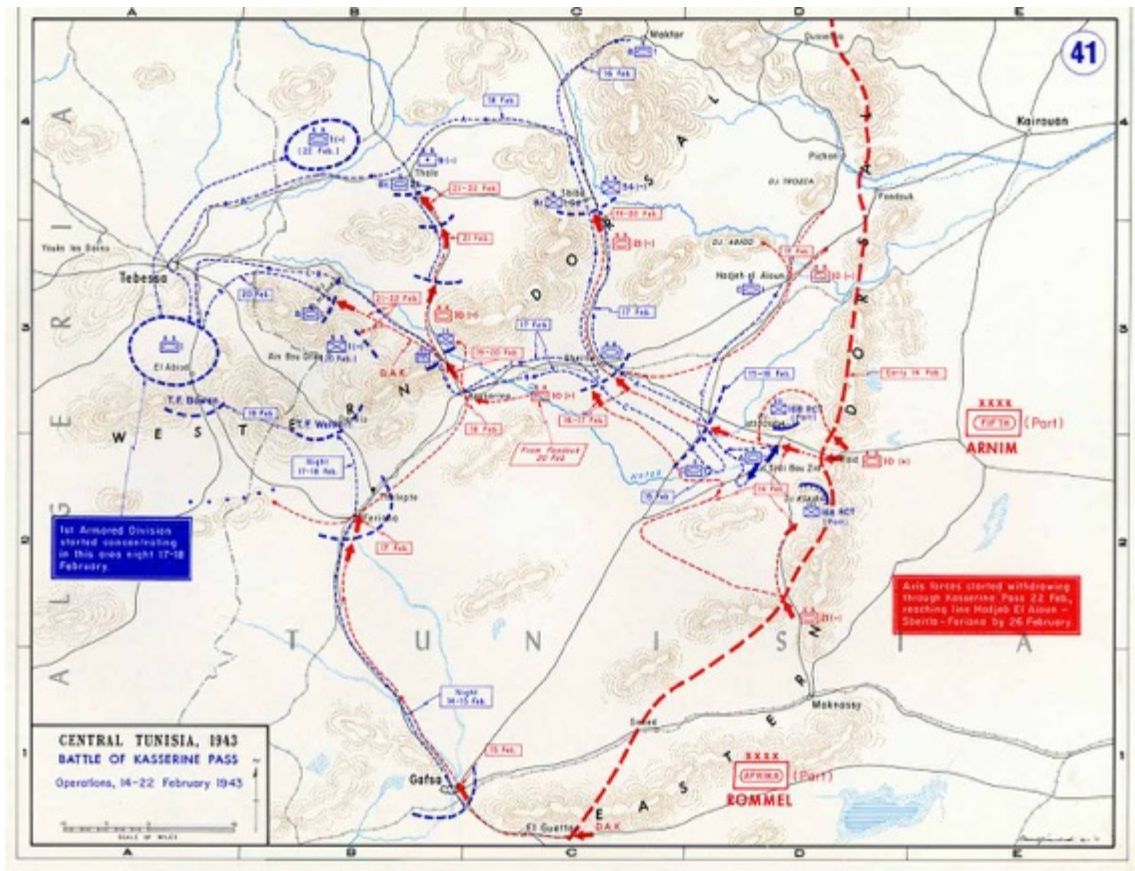


Figure 1. Battle of Kasserine Pass Overview, *Central Tunisia, 1943: Battle of Kasserine Pass: Operations, 14-22 February 1943*, (Washington, DC: Center of Military History), Accessed 30 April 2019, <https://historicalresources.files.wordpress.com/2008/09/campaign-in-northwest-africa-the-battle-of-kasserine-pass-14-22-february1942.jpg>.

¹² Rick Atkinson, *An Army at Dawn: The War in North Africa, 1942 - 1943* (New York: Holt, 2003), 390-391.

Tactically, specialization proved challenging to implement. However, when units had time to coordinate or had an established working relationship, the task-organized force proved effective. Specialization theory required tactical commanders to understand the higher-level plan and how individual units fit into the overall picture, while incorporating an everchanging situation and task organization. Tactical commanders experienced this on the Eastern Dorsal, on 14 February, in the opening engagements of Kasserine Pass near Sidi Bou Zid. Poor coordination between Colonel Thomas Drake the CT 168, 34th Infantry Division commander, and Brigadier General Raymond McQuillin, commander of CCA of 1st Armored Division, led to inefficiencies in the defensive plan. The lack of understanding by II Corps pushed McQuillin into Drake's rear area, and neither had time to mount a coordinated defense, which left their units widely dispersed, exposed, and unable to mutually support the other.¹³ Once Allied forces identified the German attack, they mounted successful defenses both at Sbiba Pass and west of Kasserine Pass. By 19 February, on Sbiba Pass, 34th Infantry Division successfully integrated two organic infantry CTs, CT 18 from 1st Infantry Division, and the British 1st Guards, and brought to bear capabilities of all arms to stop the German attack.¹⁴ Again on 21 February, CT 16 1st Infantry Division successfully coordinated with CCB, 1st Armored Division, and other GHQ Reserve units in accordance with specialization theory. US forces conducted a combined arms defense that ground the German assault to a halt. Early on 23 February, CT 16, supported by a battalion of medium tanks, and elements of two tank destroyer battalions, launched a well-coordinated counterattack to retake Kasserine Pass.¹⁵ With the correct echelon identified to incorporate capabilities, time became the crucial factor in integrating them. Units that conducted operations together formed working relationships that increased their combat effectiveness.

¹³ Howe, *Seizing the Initiative in the West*, 410–418.

¹⁴ *Ibid.*, 442–443, 452–453.

¹⁵ Eisenhower, *Report on the Tunisian Campaign*, 36.

Specialization had been McNair's solution to solve anticipated problems based on his experience, observations, and limitations in manpower, the US budget, and shipping capacity. Through action in North Africa, commanders employed the concept of specialization. Tactical commanders continued to stress working relationships with specialized units that came and went as specified by prewar doctrine. Specialization worked well enough at the operational level giving corps and army level commanders flexibility in the face of a competent enemy. Tactically it forced division and regimental commanders to accept risk, as specialized units held in rear areas pulled capabilities from units on the front lines. As the war moved to the European mainland, leaders looked for ways to limit the tactical risk of specialization. Increasing the frequency that the same units worked together, or the planning time before operations were both techniques that emerged in Normandy.

A Push Toward Generalization; Case Studies in the ETO

When the Allied forces landed in Normandy on 6 June 1944, they faced a German military struggling to beat back enemies attacking from the east and south. Despite major losses in the Soviet Union, and an entire *SS-Panzer Korps* transferred from France to the Eastern Front in April, German troop strength in the west had increased from forty-six to fifty-eight division between March and June 1944.¹⁶ Due to successful Allied deception efforts and the low operational readiness of the German forces, Hitler directed a containment of the invasion. The Germans established a deliberate defense in depth to contain the Allied forces in their beachhead. However, once an Allied breakthrough was imminent, Hitler sought a decisive counterattack to push Allied forces back to the sea. More realistically, Field Marshal Günther von Kluge, Commander-in-Chief West, hoped that the counterattack would least stabilize the front.¹⁷ In the

¹⁶ Mark J. Reardon, *Victory at Mortain: Stopping Hitler's Panzer Counteroffensive* (Lawrence: University Press of Kansas, 2003), 1.

¹⁷ Martin Blumenson, *United States Army in World War II, European Theater of Operations: Breakout and Pursuit* (Washington, DC: Center of Military History, 1961), 457.

ensuing campaign, GHQ Reserve forces supported many divisions in a variety of missions during the combat in the Normandy campaign. Two case studies of selected operations, seen through actions taken by US forces at the beginning and end of the Normandy campaign, examine distinct operational and tactical situations, which mark a turning point within US forces to generalization. While these tactical engagements ignore the larger long-term problems that prewar planners, such as McNair, were trying to solve, they do show the tactical efficiency of generalization. These case studies affected the post-war boards and future thoughts in the force structure of the US Army. Moreover, they added complexity and created biases favoring generalization, leaving post-war planners with a nagging question. How best to maintain the effectiveness of generalization within the constraints that drove specialization? The case studies suggest an equal, albeit less obvious case for modularity.

Case Study 1: Normandy Beachhead to Hedgerows

Allied planners worried a German armored counterattack could push D-Day forces into the sea. The area of Normandy selected for Operation Overlord provided open beaches with relatively open terrain for approximately two miles inland before entering a checkerboard of hedgerows. The open terrain close to the beaches allowed for a rapid consolidation of forces before additional attacks continued inland. Allied forces secured the beaches and moved inland over moderately open terrain relatively quickly. By 12 June, Allied forces connected the five beaches and held a sixty-mile front, penetrating fifteen miles inland.¹⁸ However, as US forces moved inland, the “roads, narrow and winding, ran between these hedgerows, and offered the defenders many advantageous positions for ambushes or surprise attacks on advancing foot-troops and armor.”¹⁹ While advantageous in the defense, hedgerows offered restricted and canalizing terrain that prevented German armor from mounting a counterattack. Unfortunately,

¹⁸ Bernd Horn, *Men of Steel: Canadian Paratroopers in Normandy* (Toronto: Dundurn, 2010), 13.

¹⁹ *Combat Lessons Number 4* (Washington, DC: US War Department, 1944), 5.

this terrain was also difficult for the US to bring combined arms to bear, and the Allies struggled to produce new techniques to combat German defenses.²⁰

As American forces landed on 6 June 1944, the US still employed independent tank battalions according to the specialization theory outlined in FM 100-5. Several GHQ Reserve tank battalions reinforced US infantry divisions on Utah and Omaha Beaches. On the first day of the landing, enemy fire and mishaps in the open surf severely degraded these independent tank battalions. On Omaha beach, the 741st Tank Battalion lost all but two of its tanks due to heavy surf, leaving only the 743rd Tank Battalion to support the 1st and 29th Infantry Divisions. Enemy activity on Omaha was the stiffest, and the lack of armor further hindered onward movement. Elements from the 2nd Ranger Battalion and CT 116 succeeded in reaching the coastal highway, but further advances stalled when they first encountered German machine guns in the hedgerows. Infantry formations advanced slowly through most of the day on Omaha, and it took until dark for enough armor to be massed to reinforce the weakest sectors of the lodgment. Utah Beach saw more success with both the 70th and 746th Tank Battalions advancing to the coastal highway in support of the 4th Infantry Division. Elements of the 8th Infantry Regiment, supported by 70th Tank Battalion, succeeded in seizing the village of Forges, six miles inland, just south of Ste. Mere-Eglise, held by the 82nd Airborne Division (see Figure 2). Later in the afternoon of 6 June, Colonel Edson Raff, commander of the 325th Glider Infantry Regiment of the 82nd Airborne Division, who had come ashore with the ground attack, formed an infantry-tank task force with a company of the 746th Tank Battalion. He tried to build on earlier success with an attack on a German pocket of resistance in the town of Fauville. Colonel Raff had orders to reinforce his parent 82nd Airborne Division with a combined arms team near Ste. Mere-Eglise, as well as

²⁰ *Combat Lessons Number 4, 5–6.*

secure a glider landing zone for the 82nd Airborne's artillery units which were scheduled to be dropped by glider that evening.²¹

Unfortunately, Colonel Raff called off his attack after losing three tanks while conducting probing attacks inland, leaving German forces in their defenses. As a result, at 2100 hours, German forces met sixty gliders with intense fire, causing heavy losses. Colonel Raff collected the remnants of the glider force, incorporated them into his task force for the night, forming a hasty defense until they could sort out the situation in the morning. These four independent tank battalions remained attached to their supported units as they attempted to seize D-Day objectives.²² Doctrinally the opening days of the Normandy campaign were in keeping with both the 1941 and 1944 versions of FM 100-5. Regiments and divisions received specific missions as well as attachments of GHQ Tank Battalions to assist. In the opening engagements, this worked well, but as the fighting in the hedgerows ground down, the short nature employment of GHQ attachments became less frequent.

²¹ Gordon Harrison, *United States Army in World War II, European Theater of Operations: Cross Channel Attack* (Washington, DC: Center of Military History, 1951), 304–305, 328–329; Steve Zaloga, *US Tank and Tank Destroyer Battalions in the ETO: 1944-45* (Oxford: Osprey, 2005), 46–50.

²² Harrison, *Cross Channel Attack*, 304–305, 328–329; Zaloga, *US Tank and Tank Destroyer Battalions*, 46–50.

Division.²³ The situation on the beaches was too large, fast-moving, and draped in the fog of war for higher headquarters to control. The high degree of situational awareness and coordination required for specialization broke down at the tactical level on D-Day. The D-Day plan included enough specialized units in the first assault echelons to allow for flexibility, and with some luck the flexibility afforded by specialization allowed leaders on the ground to work together to achieve the mission.

On 7 and 8 June, many units were still struggling to achieve D-Day objectives. However, many units received reinforcements from the GHQ Reserve representing the beginning of the shift to generalization. Due to losses on D-Day, 1st Infantry Division received the 635th Tank Destroyer Battalion (towed), elements of the 741st Tank Battalion, and the 745th Tank Battalion. The 635th was first attached to the division artillery on the morning of 8 June, but by the evening, companies incorporated with the 1st Division's infantry regiments, and integrated into the CTs. Infantry battalions received individual tank destroyer platoons as they arrived in the area of operations.²⁴ The practice of placing towed tank destroyer units in infantry divisions became common, replacing the divisional anti-tank battalion that infantry divisions had lost after the 1941 GHQ maneuvers. The 635th would remain with the 1st Infantry Division for the remainder of the war, providing crucial anti-tank firepower to the division. The 745th Tank Battalion also remained with the 1st Infantry for the rest of the war. Companies of the 745th provided crucial support on the 7th and 8th of June as the division advanced south across the Aure River, a major east-west water feature that cut units' initial objectives Omaha Beach from the limit of advance. On 8 June, Charlie Company of the 745th Tank Battalion (C/745th) was instrumental in crossing the river and assisted the CT 26 of the 1st Infantry Division in seizing the town of Tour-en-Bessin. The infantry-tank team captured the town around 2300 hours and widened their hold on

²³ Zaloga, *US Tank and Tank Destroyer Battalions*, 50.

²⁴ Harry Yeide, *The Tank Killers* (Havertown, PA: Casemate, 2018), 106.

the inner coast highway by seizing Ste. Anne to the east by 0130 on 9 June. The highway represented the 1st Infantry Division's D-Day objective.²⁵ The two units attached to the 1st Infantry Division serve as an example of the benefit of maintaining attached tank and tank destroyer units for longer periods. As the Allies secured the lodgment and German resistance stiffened, the fight slowed down, making the rapid allocation of combat power less necessary. The longer attachment times allowed units to build important relationships between infantry and armored units.

By late June, the Allied front had stabilized, and units found the need for retraining. The hedgerows created a series of small battlefields where massed units could not fight together. Command and control at times was impossible, as each field became its own micro-war with leaders unable to see or coordinate outside events. The isolated nature of the terrain demanded a methodical clearance of individual hedgerows. Each division struggled to determine the best way to solve the tactical problems in the hedgerows. One solution was the creation of small infantry-tank teams that trained together and conducted combined arms attacks against German positions. To work more closely together, the attachments that formed the teams were kept small. Devised to breach the thick vegetation, hedgerow cutters welded to tanks allowed the infantry a foothold in each small battlefield. The teams still struggled with direct communication, but as units worked together, performance began to improve. In the hedgerows of Normandy, divisions continued to shift to away from specialization towards generalization.²⁶

Case Study 2: 30th Infantry Division in Mortain

By August 1944, with the success of Operation Cobra and Third Army's inevitable breakout in eastern France, Allied forces pushed past the hedgerows and were poised to make sweeping advances. However, as the Allies shifted combat power to exploit a breakout, German

²⁵ H. R. Knickerbocker, ed., *Danger Forward: The Story of the First Division in World War II, United States Army, World War II* (Atlanta: Albert Love, 1980), 191–195, 427.

²⁶ Harrison, *Cross Channel Attack*, 383–384, 402.

forces looked to counterattack. The initial German objective was Mortain with an armored thrust continuing to the port town of Avranches. Splitting the American First and Third Armies would allow the disintegrating *Wehrmacht* to halt Allied advances and stabilize the front. However, there were different opinions in the German high command as to what was possible after the initial phases of the attack. Hitler released over one-hundred tanks from operational reserves, but also dictated changes to the tactical plan. Further fragmenting German effectiveness, the committed operational reserves would not arrive until the second day of the attack.²⁷ Despite German planning and coordination problems, as well as a crumbling front, the Battle of Mortain represented the first coordinated armored attack US forces faced in France.

On the night of 6 August, the German XLVII Panzer Corps attacked with four panzer divisions and five Kampfgruppen, comparable to brigade-sized combined arms teams. The attack caught US forces by surprise, as many commanders believed the German front was collapsing. US commanders did not receive high-level Ultra intercepts, further adding to the surprise. German forces captured Mortain in their opening attacks but could not exploit their initial success. The inability to neutralize stubborn pockets of bypassed US forces slowed German progress throughout the battle. On 7 August, the 2nd Panzer Division successfully broke through US lines but CCB of the 3rd Armored Division halted it along the See River. Second Armored and 35th Infantry divisions, which had been taking positions south in preparation for the breakout, further blunted the German attack. Although the US was fortunate that the Germans had attacked an Allied staging area, US flexibility and rapid decisions halted the attack by the end of the day on 7 August. German forces fought to hold their gains, defending stubbornly against US attacks. On 8 August, CCB of the 3rd Armor Division successfully stabilized the line along the See River, with linkup of the 4th Infantry Division to the north. Fighting around Mortain continued until August 12th when the 35th Infantry Division relieved 2nd Battalion, 120th

²⁷ Blumenson, *Breakout and Pursuit*, 457–460.

Infantry Regiment from the 30th Infantry Division that had been cut off on Hill 317 since the beginning of the battle. US casualties numbered around 10,000. The defense and subsequent transition to the offense was made possible by the success of the generalized infantry division that blunted the German attack.²⁸

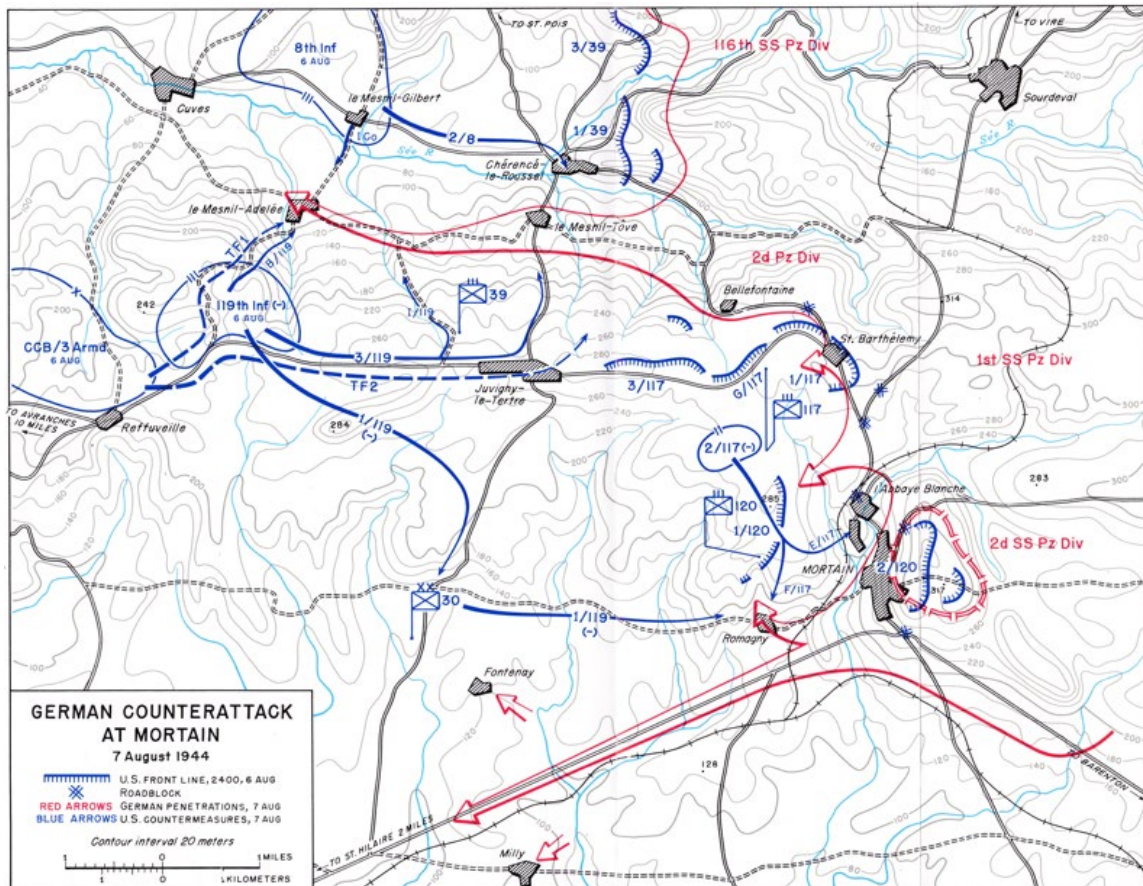


Figure 3. German Counterattack at Mortain, 7 August 1944. Martin Blumenson, *United States Army in World War II, European Theater of Operations: Breakout and Pursuit* (Washington, DC: Center of Military History, 1961), Map X.

The German counterattack fell primarily on the 30th Infantry Division and its attachments, organized with a more generalized assortment of capabilities. At higher echelons, however, VII Corps and First Army maneuvered armored divisions' combat commands and infantry combat teams to reinforce 30th Infantry Division similar to the doctrinal specialization

²⁸ Blumenson, *Breakout and Pursuit*, 466–475, 486–492.

theory.²⁹ Caught by surprise in newly occupied positions around Mortain, 30th Infantry Division incorporated all attachments successfully, integrating reinforcements, and stiffly resisted the German attack. The US defense of Mortain centered around a generalized infantry division that was the result of the changing operational environment, and the desire to lessen the tactical risk by incorporating more capabilities into tactical units.

By August 1944, key elements of the operational environment had changed significantly. The military situation of the US and German forces and the physical environment of the battlefield were drastically different from the situation in which pre-war planners had envisioned. The German counterattack at Mortain was a reversal of roles for the forces fighting there. When the 30th Infantry Division occupied Mortain on 6 August, it was in the process of integrating eight-hundred replacements after the division's hard fighting in St-Lô. The division was also moved to Mortain on short notice and lacked adequate maps, communication networks, or adjacent unit coordination. General Leland Hobbs, the commander of the 30th Infantry Division, initially thought the German attack was a demonstration.³⁰ Additionally, his men had arrived tired after a long march, with many of his units in disorganized positions.³¹ Up to this point Hobbs and his men had fought mostly offensive action against dug-in infantry. In the attack, General Hobbs' CTs utilized attached tanks and tank destroyers for mobile protected firepower. Before Mortain, the Germans had not massed their armored forces, instead spreading out their tanks in support of the infantry-focused defense within the hedgerows. The small US combined arms teams resulted in dispersed US tanks and tank destroyers, which were more than capable of dealing with the limited enemy armor supporting the Germans positions earlier in the campaign.

²⁹ Blumenson, *Breakout and Pursuit*, 465–471.

³⁰ US Department of the Army, Army Doctrine Reference Publication (ADRP) 1-02, *Terms and Military Symbols* (Washington, DC: Government Printing Office 2017), 1–28. A demonstration is defined in current army doctrine as “military deception, a show of force in an area where a decision is not sought that is made to deceive an adversary. It is similar to a feint but no actual contact with the adversary is intended.”

³¹ Blumenson, *Breakout and Pursuit*, 466, 472–473.

This force ratio created problems in Mortain when the US faced a sizable armored counterattack. Even with a large number of replacements, the 30th Infantry Division was an experienced and competent formation, confident in combined arms maneuver. However, the thinly spread anti-tank capabilities allowed for German forces to isolate key US weapon systems and continue the attack against weaker areas in the line. The German forces that launched the counterattack had been on the defensive for six weeks, unable to practice offensive operations, and were generally not prepared for a complex offensive operation. Hitler also underestimated the growing American competence. The commitment of multiple German operational reserves by Hitler in support of the counterattack, created friction in German command and control. Lack of cohesiveness, combined with the tolls exacted by five years of conflict, resulted in lack of tactical flexibility for the attacking panzer divisions.³² Strengths and weaknesses of forces on both sides drastically changed the operational environment.

Pre-war planners saw the physical environment of the battlefield in terms of maneuver. They tailored and equipped forces to succeed in a dispersed, fast-moving environment where forces could gain positions of advantage over the enemy. However, the reality pre-war planners had envisioned did not come to fruition. While there had been sweeping advances in the war, US forces spent much of their time in defensive positions waiting to mass combat power for the next attack. The US situation in Mortain was no different. In all but a few extraordinary examples, such as Third Army's breakout, the sheer scale of forces in contact prevented large sweeping maneuvers. As the Third Army drove across France, Allied planners acknowledged the risks of operating beyond their operational reach. Instead of a battlefield of maneuver, US forces found themselves fighting in dense concentrations along narrow fronts.³³ Success on a narrow front was not a matter of maneuver, but combined arms application and how leaders at the battalion and

³² Reardon, *Victory at Mortain*, 23–24, 63, 142.

³³ Calhoun, *General Lesley J. McNair*, 228.

company levels could successfully implement multiple forms of contact against the enemy. Pushing capabilities to the lowest levels created combined arms teams that could survive in a wider variety of tactical situations.

The capabilities of the 30th Infantry Division were a result of the desire to lessen tactical risk through a shift to generalization. Two significant attachments aided the 30th Infantry Division in defense of Mortain: the 823rd Tank Destroyer Battalion (towed) and the 743rd Tank Battalion. The 823rd arrived in the European Theater of Operations on 24 June, and attached to the 30th Infantry Division after a short time with the 29th Infantry Division. Similar to the 635th's role in the 1st Infantry Division, the 823rd fulfilled the role of the divisional anti-tank battalion, supporting the 30th Infantry Division's attack into St-Lô. The 823rd played a key role in maintaining key pockets of resistance at Mortain, and remained with the division until November 1944.³⁴ In support of CT 116 of the 29th Infantry Division, the 743rd Tank Battalion landed on D-Day at Omaha Beach, but transferred to the 30th Infantry Division after a refit period in late June. The battalion fought with the 30th Infantry Division through the Normandy campaign, the defense of Mortain, the advance into Belgium, and against the Siegfried Line.³⁵ The length of their attachments and the missions these two GHQ reserve battalions received, demonstrated a shift away from specialization during the defense of Mortain.

The attachment timeline of these two specialized units, considering the larger context, is a clear demonstration of generalization. The main effort for the Allies as they planned for a breakout into southern France was General George Patton's Third Army. The British 21st Army Group and the US First Army served as supporting efforts to fix as many German forces as possible in other sectors. Within First Army, 1st Infantry Division, with CCA of 3rd Armored Division attached, secured the southern flank at Mayenne. The 30th Infantry Division's mission

³⁴ Yeide, *The Tank Killers*, 246.

³⁵ Zaloga, *US Tank and Tank Destroyer Battalions in the ETO*, 81.

was to consolidate US gains, stabilize the front, and defend in the vicinity of Mortain.³⁶ When the German's attacked on 6 August, both of the GHQ battalions attached to the 30th Infantry Division had already worked with the 30th for multiple operations. Additionally, considering the preparations for the breakout, and the 30th Infantry Division had a minor mission of holding the front. By specialization doctrine, both the 743rd Tank Battalion and the 823rd Tank Destroyer Battalion should have been attached to other units with a higher priority missions or pooled at an echelon above the division. Leaving units attached for extended periods and multiple operations was part of the gradual shift to generalization. Longer attachments increased the efficiency of units working together but conflicted with the doctrine of specialization. The length of time the 823rd and 743rd were attached to the 30th Infantry Division represented a clear shift to generalization.

³⁶ Blumenson, *Breakout and Pursuit*, 466–467.

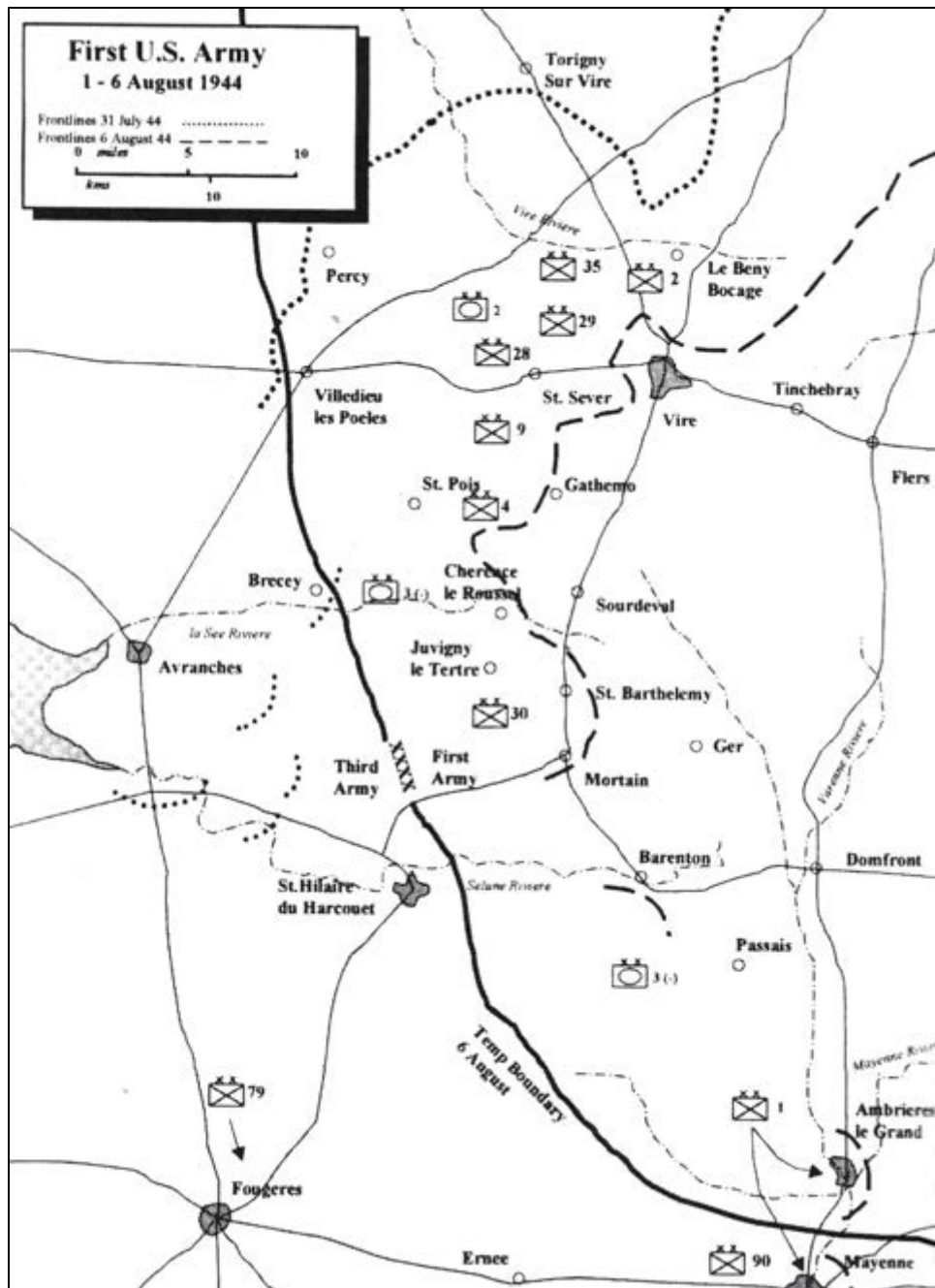


Figure 4: Operational Picture, First US Army, 1-6 August 1944. Mark J. Reardon, *Victory at Mortain: Stopping Hitler's Panzer Counteroffensive* (Lawrence: University Press of Kansas, 2003), 66.

Even though the employment of GHQ Reserve units was not in line with specialization theory at Mortain, the missions given to the 743rd Tank Battalion were doctrinally correct. The working relationships that generalization fostered with the 30th Infantry Division allowed for more efficient tank battalion actions. Doctrine at the time made no differentiation between the

missions of non-divisional or armored division's tank battalions. A tank battalion was primarily an offensive formation, destroying or neutralizing the enemy on an objective to allow for infantry follow-on forces to consolidate gains. In the defense, tanks were to form local or general reserves. Of note for the defense of Mortain, 1944 doctrine called for tank battalions to break up hostile counterattacks and give close fire support to the infantry.³⁷ The 743rd's actions in the Mortain defense was in line with the non-divisional tank battalion's doctrine, allowing tanks to "support the attack of infantry by direct fire."³⁸ A typical employment of the 743rd Tank Battalion in Mortain was B Company 743rd's (B/743rd) support to the 3rd Battalion of CT 120 (3/120th) around Barenton, southeast of Mortain. With the attached B/743rd, an anti-tank platoon from CT 120, and an engineer platoon, the infantry battalion formed the core of a combined arms team that would attack to break up the German counterattack. During the night of 6 August, German air attack and mines disrupted the team's approach march. By 0600 on 7 August, 3/120th attacked Barenton with B/743rd in the lead. Breaching protective obstacles and losing a tank to mines, the team seized the town by mid-day, capturing several German stragglers. As the 3rd Battalion began to establish a hasty defense, the commander of 3/120th, Lieutenant Colonel Paul McCollum, then further broke down B/743rd by sending a tank platoon to each infantry company. McCollum's team would eventually be attached to 2nd Armored Division for the rest of the fight near Barenton. Under a new division, the infantry-armor team continued to be extremely effective. On 9 August, McCollum sent an infantry company and five tanks to secure a crossroads northeast of Barenton. The team inflicted considerable losses on the Germans, including three half-tracks, while only losing one man killed.³⁹ Though their employment ran counter to specialization theory, B/743rd's employment was doctrinally correct and was made more efficient by the length of time the tank company was attached to 3/120th.

³⁷ US Army, FM 100-5 (1944), 307, 310–311.

³⁸ *Ibid.*, 318.

³⁹ Reardon, *Victory at Mortain*, 87–90, 171.

The attachment of A Company of the 823rd (A/823rd) Tank Destroyer Battalion in support of the 2nd Battalion, 120th Infantry Regiment (2/120th), was an attempt to limit the tactical risk of front-line units. In 1941 when General McNair stripped divisional anti-tank battalions from triangular infantry divisions, it left them with a significant lack of anti-tank capability. While the attachment of the 823rd Tank Destroyer Battalion was a step backward in the table of organization, but a step forward in combat effectiveness. The battalion's performance was key to blunting the German advance. The relationship A/823rd had with 2/120th allowed for mutual trust in defense of Hill 317 to the east of Mortain. At the defensive positions on the hill, Lieutenant Colonel Hardaway, the 2/120th commander, listened and trusted the recommendations from Lieutenant Springfield, a platoon leader from A/823rd, for the repositioning of its 3-inch guns, into more advantageous firing positions.⁴⁰ A/823rd's positions on Hill 317 were oriented to cover the maximum number of approaches and integrated into 2/120's defensive positions. While the unprotected gun crews took high casualties in defense of the hill, they were vital to holding the Allied position, destroying multiple panzers at close range. The guns were so successful that a German report stated, "[w]ell installed American antitank guns prevented at first every penetration of our tanks."⁴¹ A/823rd continued to support 2/120th when it was cut off in the opening hours of the attack for six days until they were relieved by the 35th Infantry Division on 12 August.⁴²

⁴⁰ Reardon, *Victory at Mortain*, 86.

⁴¹ Yeide, *The Tank Killers*, 125.

⁴² *Ibid.*, 125–127.

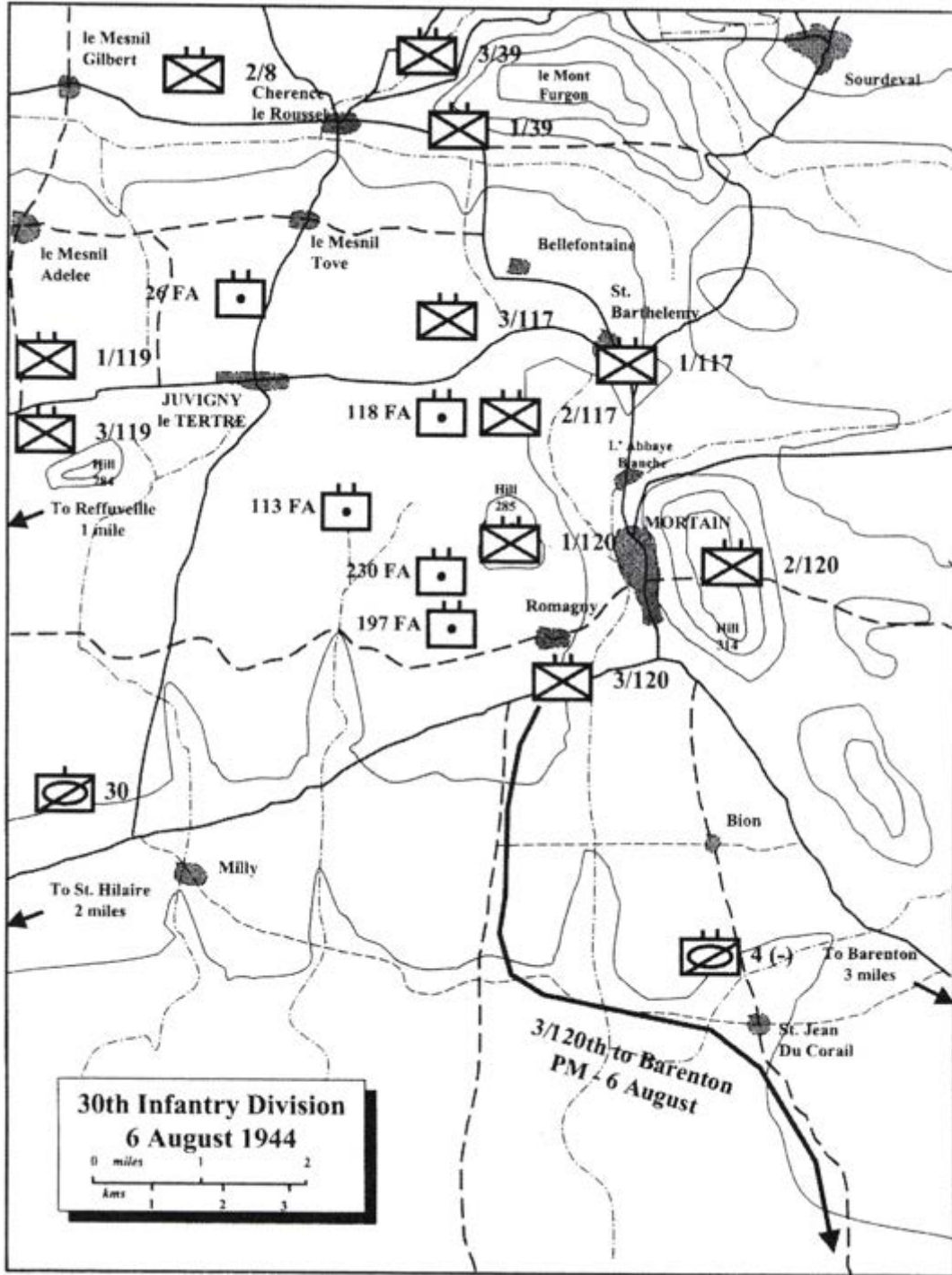


Figure 5: 30th Infantry Disposition, 6 August 1944. Mark J. Reardon, *Victory at Mortain: Stopping Hitler's Panzer Counteroffensive* (Lawrence: University Press of Kansas, 2003), 89.

The attachment of independent tank and tank destroyer battalions limited the tactical risk of forward units. Unlike CT 168 of the 34th Infantry Division at Sidi Bou Zid east of Kasserine Pass in February 1943, CT 120 possessed enough capabilities to blunt a coordinated panzer

attack. Even though CT 120's flanks were weak, the capabilities within the team allowed for forward battalions to fight isolated, adding further friction to the German attack. Fighting with a doctrinal basis, the length of time units worked together allowed for more effective combined arms teams. The incorporation of capabilities into the 30th Infantry Division in August 1944 demonstrated that higher-level commanders had finally accepted tactical commanders' requests for increased capabilities, specifically anti-tank and mobile firepower, at the division level and below. Generalization pushed effective combined arms to the regiment, battalion, and company level, allowing tactical commanders more options and limiting their tactical risk.

Generalization Formalized

Back in Washington, while the Mortain counterattack raged, the Army was already looking toward the end of the war. On 19 August, Major General R. L. Maxwell issued instructions for the first Equipment Review Board, later known as the Cook Board, to examine equipment for the post-war Army. The purpose of the study was to identify the "desired characteristics for weapons and equipment...[to] utilize the enormous technical resources [then] available to the War Department in securing necessary improvements."⁴³ The board met in January 1945 and issued a series of recommendations that covered everything from individual equipment to field-army sized organizations. The Cook Board served as a template for the General Review Board, held on a myriad of subjects after the war, even though many specific changes recommended were overly technical.

The Cook Board offered unique insight into the capabilities commanders wanted based on the operational environment of late 1944. Board members fully recognized the successful impact of combined arms organizations, but also that individual Arms and Services possessed too much influence on future capabilities. The board advocated for more centralized control in

⁴³ Equipment Review Board, *Equipment Review Board Report*, (College Park, MD: CMH Manuscript File: AGF, Box 128, June 20, 1945), Exhibit NO. 1, NARA 2, RG 319, Entry 488.

implementing new capabilities, formations, and equipment moving forward. The board recommended the development of three types of tanks and tank destroyers, classified as light, medium, and heavy models. Of specific interest to infantry divisions, was the light tank destroyer. A dual-purpose direct-fire support artillery weapon, the light tank destroyer was a proposed solution for the lack of firepower that infantry divisions had been complaining about since before the war. The platform would give infantry regiments and divisions a defensive capability against armor, and an offensive weapon in the form of a lightly armored mobile gun. However, the wish-list presented by the Cook Board did little to address the impact of force structure on the operational or strategic levels. The board recognized changes were needed in tables of organization but determined that those changes were outside their purview. It would not be until after the war that the General Review Board would meet to consider the Cook Board's recommendations.⁴⁴

Strategic Factors

The lessons in which combat leaders formalized in the General Review Board were based on tactical experiences, ignoring the strategic factors that shaped and changed the operational environment. In 1940 and 1941, specialization was the operational approach used to increase efficiency in the Army's mobilization efforts. General McNair recognized America's limited logistical capacity and searched for a solution to get as many units overseas as possible while still maintaining the capability of the fighting force. The size, weight, and logistics requirements of tanks and tank destroyers made them natural candidates for pooling above the division level.⁴⁵ The 1943 shipping crisis, the 90-Division Gamble, and the Broad-Front strategy were sequential strategic events that carried operational and tactical implications, driving generalization.

⁴⁴ Equipment Review Board, *Equipment Review Board Report*, 13,15, 23, 82, 84, 102–103.

⁴⁵ Calhoun, *General Lesley J. McNair*, 267.

Shipping capacity, an ever-present constraint in the mind of McNair, reached crisis levels for the Allies in March of 1943. Britain was becoming more and more dependent on US shipping, and multiple operations in theaters around the world created greater, far-reaching demands. At the direction of US President Franklin D. Roosevelt, US assets would fulfill the commitment of supplying necessary tonnage to the UK. The need to supply the British home isles required the Army to delay the deployment of 225,000 troops in the summer of 1943. While advances in anti-submarine techniques and net increases in shipping helped blunt shortfalls, shipping shortages resulted in resources lagging.⁴⁶ In multiple theaters, the Allies struggled to build combat power. Preparations in North Africa for Sicily, and the UK's struggle in Burma stretched logistical resources and lengthened the time needed to resume offensive operations. Multiple requirements, considering limited shipping capacity, made space on vessels an indispensable resource. Shipping capacity was a core problem that drove specialization. McNair had anticipated the shipping challenges when advocating for the pooling of capabilities.⁴⁷ However, as the war continued, solutions for the shipping crisis pushed the US away from McNair's theory.

Considering shipping shortages, the US role in producing the arsenal of democracy, and the Soviets' ability to halt German offenses, the Army decided to gamble on fielding only ninety divisions. Ninety divisions represented the estimated number of divisions required to win the ground war by the Army Staff in mid-1943. The need to save on shipping capacity drove planners to favor lighter infantry divisions that were not wholly motorized. The shipping crisis and backlog at US ports in 1943 delayed many new divisions' deployments while the shipping bottleneck cleared. In the lead up to Operation Overlord, shipping factors limited the rate of buildup of US forces in the UK to four divisions a month.⁴⁸ With the Army limited to ninety

⁴⁶ Richard Leighton, "U.S. Merchant Shipping and the British Import Crisis," in *Command Decisions* (Washington, DC: Center of Military History, 1959), 210–222.

⁴⁷ Calhoun, *General Lesley J. McNair*, 234–235.

⁴⁸ Matloff, "The 90-Division Gamble," 366–378.

divisions, and the fact that infantry divisions took less shipping space, commanders created the most versatile formations with the forces they had. With a smaller army, commanders could accept less risk. Using infantry regiments as the core of the combined arms Combat Teams, commanders desired more capabilities. The 90-Division gamble was a major strategic factor that drove tactical generalization.

In the Normandy campaign and subsequent operations, the logistic situation and forces available shaped the operational environment in ways that further cemented generalization. The relatively stagnant fight in the hedgerows saw the effectiveness of small infantry-tank teams in limiting tactical risk. By August 1944, the working relationships these teams had formed were instrumental in stopping the German counteroffensive in Mortain, and the ensuing breakout into France. With the Third Army rapidly advancing east, logistics again played a part in US operations. Ports around the Normandy beachhead limited the operational reach of Allied forces. Port discharge of Allied forces was 35,000 tons a day, several thousand tons below requirements, and line haul assets struggled to supply the front. Damage to rail and pipeline networks required vehicular movement, and the number of truck companies was not sufficient for the demand. These constraints limited the scale of combat operations that US forces could conduct. By September, shortages in supplies and longer lines of communications could only supply one American field army conducting offense operations, and only if other US field armies were in the defense.⁴⁹ Resource shortfalls limited General Eisenhower's ability to execute a rapid advance on the scale he desired to win the war quickly. Fewer divisions in the theater, because of the ninety-division limit, and fewer divisions able to continue offensive action made each division even more critical. Pooling, as outlined by FM 100-5, was not conducive as forces advanced on a broad front. Divisions spent longer periods on the front and needed capabilities to maintain tempo

⁴⁹ Ruppenthal Roland, "Logistics and the Broad-Front Strategy," in *Command Decisions* (Washington, DC: Center of Military History, 1959), 422–424, 426.

to keep German forces off balance. Eisenhower had limited reserves and needed each division to operate fluidly and independently. Limited shipping and logistic capacity made commanders search for efficiency in creating combined arms formations to limit tactical risk, in response to the changing operational environment.

Specialization was designed to solve the anticipated problem of how to get the most capable force to distant battlefields with the flexibility to mass capabilities to seize the initiative, and defeat the enemy through offensive action. As leaders entered World War II, the strategic and operational environment changed in ways no one could have expected. Shipping shortages, logistical problems, and manpower choices influenced the strategic environment. Eisenhower tailored his operational approach to his constrained resources and an adaptive enemy, while tactical commanders sought to limit tactical risks to survive and win.⁵⁰ The 1943 shipping crisis, the 90-Division Gamble, and The Broad-Front strategy all impacted the operational environment and made generalization the guiding principle the Army used post-World War II.

Post War Conclusions

The General Board, sometimes called the General Review Board, refers to a series of working groups tasked to review every aspect of the strategy, tactics, organization, and administration in the employment of US forces during the war. Despite findings from the Cook Board, by the end of the war, other capabilities had resolved the issues that the design of self-propelled tank destroyers had been expected to solve. General support tank destroyer battalions were seen by doctrine writers as a mobile reserve to rapidly counterattack enemy penetrations or maneuver to an exposed enemy gap. In this role, speed and firepower were of the most importance. By the time of the Normandy campaign in June 1944, developers had solved the firepower gap between tanks and tank destroyers. The 76mm, up-gunned Sherman closed the lethality gap. Additionally, new models of the Sherman were approximately the same speed as the

⁵⁰ Calhoun, *General Lesley J. McNair*, 268, 310.

purpose-built M10 tank destroyer, with the added benefit of thicker armor and multiple machine guns. By the end of the war, tanks were better than tank destroyers in most respects and much more versatile on the battlefield.⁵¹ These factors played prominently in the minds of the board members after the war.

The General Review Board's recommendations guided the post-war development of capabilities and force structures. However, tactical biases of the efficiencies of generalization influenced board members. The European Theater General Boards, through their experiences, represented the tactical level biases of combat units in the European Theater from 1944-45. Board members consisted of "experienced combat leaders" with emphasis on members' involvement in battle.⁵² Experience with tactical risk drove participants' overall conclusion away from operational and strategic complications, and towards tactical problems. Focusing on infantry divisions' lack of sufficient strength to conduct combat operations independently.⁵³ "The absence of tanks in the division organization was especially felt [by divisions]."⁵⁴ While the experience of these leaders was relevant on the tactical level, the boards lacked a strategic understanding of the reasons that had pushed American forces to specialize in the first place. Generalization was the theme in the General Review Board, with little thought to the strategic or operational problems that had driven McNair to specialization in the first place. As a result, in an attempt to succeed in the ETO's operational environment and limit tactical risk, the type of infantry division reforms proposed by the General Review Board recreated the problem that McNair had tried to solve with specialization.

⁵¹ Yeide, *The Tank Killers*, 104–105.

⁵² A. F. BG Kibler, *Study No 15: Organization, Equipment, and Tactical Employment of The Infantry Division*, The General Board, United States Forces, European Theater (Historical Section, Army Ground Forces, 1946), 1, accessed 10 September 2019, <https://usacac.army.mil/sites/default/files/documents/carl/eto/eto-015.pdf>.

⁵³ *Ibid.*, 1–2.

⁵⁴ *Ibid.*, 2.

The General Review Board examined the forces that fought in Europe and, in a series of reports, made real-world assessments as well as recommendations for improved efficiency. Towed tank destroyers were too dangerous to their crews, and of limited use in the offense. Infantry formations needed an armored in the form of a fast, organic system, capable of destroying piecemealed armored vehicles and enemy strongpoints.⁵⁵ The piecemealed nature of German armor, the offensive nature of US doctrine, and the Normandy campaign contributed to these findings. The boards recommended disbanding tank destroyers as a branch and capability, in favor of giving the tank destroyer mission to armor units. At the time, the capability of the medium tank fit the need outlined in the board's recommendations. The board advocated for a division consisting of Regimental Combat Teams with the ability to integrate new capabilities into an organic combined arms formation.⁵⁶ Proposed changes to post-war infantry division's tables of organization included the elimination of the regimental towed anti-tank company and the creation of a new organic medium tank regiment. The proposed tank regiment consisted of 177 tanks organized into three battalions, adding significant size and combat power into an infantry division. The regiment was to remain under division control, with battalions or companies forming habitual relationships with the infantry regiments in training and combat.⁵⁷ The General Review Board made recommendations to change the force structure based on their tactical bias, to succeed in the snapshot operational environment that existed in the closing days of World War II.

⁵⁵ J. A. BG Holly, *Study No 60: Organization, Equipment, and Tactical Employment of Tank Destroyer Units*, The General Board, United States Forces, European Theater (Historical Section, Army Ground Forces, 1946), 33, accessed 10 September 2019, <https://usacac.army.mil/sites/default/files/documents/carl/eto/eto-060.pdf>.

⁵⁶ J. A. BG Holly, *Study No 50: Organization, Equipment and Tactical Employment of Separate Tank Battalions*, The General Board, United States Forces, European Theater (Historical Section, Army Ground Forces, 1946), 6–12, Appendix 2, accessed 10 September 2019, <https://usacac.army.mil/sites/default/files/documents/carl/eto/eto-050.pdf>.

⁵⁷ BG Kibler, *Study No 15: Organization, Equipment, and Tactical Employment of The Infantry Division*, 6, 11, 13.

Modern Parallels: McNair's Relevance

Post-war leaders considered the General Review Board's recommendations and released the 1947 infantry division table of organization. The new division was a generalized formation, as it incorporated an organic tank company into each infantry regiment and a heavy tank battalion under division control. Infantry battalions also received recoilless rifles for added anti-tank capability.⁵⁸ This table of organization would have increased efficiency within the operational environment of late World War II. It provided infantry divisions with the wide range of capabilities tactical commanders had been grasping for since before the war. However, the additional capabilities and 144 tanks had the potential to strain shipping and logistic capabilities expeditionary forces relied upon.

With the US Army's shift back to Large Scale Combat Operations (LSCO), the Army finds itself in a similar situation to the General Review Board's situation post World War II. What is the best structure the force for an anticipated conflict, within the still very present shipping, logistical, and manpower constraints of the current operational environment? The Mobile Protected Firepower program currently incorporating within the modern Infantry Brigade Combat Teams (IBCTs) provides a modern parallel within the brigade and division structure. For the modern Army limited modularity of emerging capabilities is a possible solution to balance both theories of specialization and generalization. The debate continues along the lines of specialization versus generalization as modern planners attempt to restructure the force for an anticipated conflict, striving to find the most efficient force within the constraints of the modern operational environment.

⁵⁸ Jonathan M. House, *Toward Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organization*. (Ft Leavenworth, KS: Combat Studies Institute Press, 1984), 146–148, accessed 10 October 2018, <http://usacac.army.mil/cac2/cgsc/carl/download/csipubs/house.pdf>.

Same Problem, Different Era

When planning for LSCO today, strategic, and operational factors are similar to those faced by pre-World War II planners and the post-war boards. The manpower constraints imposed by Congress are similar to those faced when the Army created the 90-Division Gamble. Force projection, in the form of shipping capacity, is another limiting factor. Constraints in how military equipment gets to the theater of conflict adds complexity to what planners must consider when drafting a new force structure and doctrine. As the Army makes the shift away from the brigade centric force to division level operations, the similarities to the post-war debate of capabilities at echelon have reemerged. In preparing for the next war, the army will still face the problems that drove McNair to argue for specialization. The limited size of the army and power projection are factors that make generalization a limiting factor for efficiency.

The shipping crisis that drove specialization before World War II is an even more prevalent problem for operational and strategic planners today. Today's military sealift capabilities are a growing concern for power projection. Multiple organizations come together to form the sealift arm of America's power projection. Military Sealift Command (MSC) and the Department of Transportation's Maritime Administration (MARAD) together own the sixty-one vessels that form the combined sealift fleet. However, during an unannounced activation exercise in March of 2019, over 30%, that is, nineteen of the sixty-one vessels, were non-mission capable. Several factors resulted in the lack of mission readiness. The average age of the fleet is forty-four years old, leading to an increase in maintenance costs, and is symptomatic of a declining merchant marine fleet.⁵⁹ The Army also operates a fleet of smaller vessels assisting in power projection, mostly for landing in more austere areas. However, the Army's situation is no better.

⁵⁹ Salvatore Mercogliano, "Suppose there was a War and the Merchant Marine didn't come?," *Proceedings, U.S. Naval Institute* 146/1/1,403 (January 2020): accessed 1 February 2020, <https://www.usni.org/magazines/proceedings/2020/january/suppose-there-was-war-and-merchant-marine-didnt-come>.

With an average age of forty-plus years old, the Army is looking at potentially eliminating watercraft systems from the National Guard and Reserve components to make room for other modernization projects.⁶⁰ Cuts to the US's sealift capability not only effect initial power projection but sustainment for forward-deployed forces. The US Merchant Marine provided 31 million tons of the 52 million tons, nearly 60% of cargo supplied to forces involved in the Operations Enduring Freedom and Iraqi Freedom.⁶¹ The decline in the merchant marine and Army fleets is a constraint to planners as they create operational plans. As the Army deploys formations, the composition of the force must make the most of shipping constraints, and limit the logistic strain needed to supply the expeditionary force. This problem is the same as what McNair was concerned with when designing the inter-war Army around specialization theory. Planners must look at the current US Army generalized brigades, as they incorporate new capabilities such as MPF, to find the best use of America's limited and declining shipping capacity.

The US Government limits the size of the US Army. Article I, Section 8 of the Constitution gives the US Congress broad powers over the armed forces, including the power "To raise and support Armies." In Fiscal Year 2019, Congress authorized the Regular Army's end strength at 478,000 personnel.⁶² Under the Trump administration, the Army has continued marginal growth to increase readiness and modernization. However, Congress is likely to meet any significant increase in the Army's end strength with apprehension. Additionally, America's experience following September 11th and in Operation Iraqi Freedom demonstrated the challenges of increasing the Army's end strength quickly, even in the face of a significant

⁶⁰ J. P. Lawrence, "The Army May Say Bon Voyage to Part of Its Seagoing Fleet," *Stars and Stripes*, 28 January 2019, accessed 10 January 2020, <https://www.stripes.com/news/the-army-may-say-bon-voyage-to-part-of-its-seagoing-fleet-1.566379>.

⁶¹ Mercogliano, "Suppose there was a War and the Merchant Marine didn't come?"

⁶² "An Assessment of U.S. Military Power: U.S. Army" (The Heritage Foundation, October 30, 2019), accessed 22 January 2020, <https://www.heritage.org/military-strength/assessment-us-military-power/us-army>.

security dilemma or national emergency. In World War II, a smaller force on the front lines pushed tactical and operational commanders toward generalization. As the Army shifts back to division level operations, it is unlikely it will experience substantial growth in numbers. The force structure must then look to balance capabilities between the brigade and division level, determining a balance between specialized and generalized formations.

The incorporation of MPF into Infantry Brigade Combat Teams (IBCTs) provides the backdrop for examining the modern debate of capabilities at echelon. By using a modular, specialized battalion of MPF held at the division level, the division can provide generalized advantages to some of its units. Keeping the capability pooled at the division level keeps IBCTs lighter and allows the division commander to tailor forces to missions as the need arises. By fostering working relationships with the supported unit, BCT commanders will gain the benefits of generalization, while mitigating the problems that drove specialization in the first place. With modern constraints in shipping and manpower as well as doctrine, equipping every IBCT with an MPF company costs efficiency, a possible solution is modularity.

Organizing MPF by placing a company in every IBCT would increase the armored force size significantly and make IBCTs less expeditionary. The US Army currently has twelve IBCTs organized under four divisions and one separate IBCT in the active-duty component. With its current composition, the Army's eleven active duty Armored Brigade Combat Teams have six tank companies each, meaning there are sixty-six active duty tank companies in the Army.⁶³ If the Army applied the 1947 generalized infantry division models to MPF, it would result in an increase of thirteen MPF companies within the IBCT and twelve tank companies in four battalions, at the divisions. The result would be a 37 percent increase in the armored force and added shipping and logistical requirements for infantry formations. Even without the division

⁶³ Bill Adams, "FMSWeb," accessed 3 January 2020, https://fmsweb.fms.army.mil/protected/struct/Listing_Struct_Leg.asp.

heavy tank battalion, thirteen MPF companies is a 22 percent increase in the armored force. The modern Army has chosen instead to designate the Bravo Troop from the Reconnaissance Squadron for MPF. This option provides the manpower needed without limiting the IBCTs infantry battalions. However, at thirty to forty tons per vehicle, MPF adds at least 480 tons to an IBCT's shipping load, placing additional strain on shipping or airpower deployment capacity.⁶⁴ Additionally, this choice limits the IBCT's reconnaissance capability, leaving only one mounted and one dismounted troop for the reconnaissance and security missions of infantry brigades. With limited manpower, as well as shipping and sustainment requirements, a complete generalization of the IBCT will cost the Army efficiency.

In World War II, fewer forces available drove tactical commanders towards generalization, but a lack of shipping drove strategic planners toward specialization. Considering the manpower and shipping limitations and looking at the recommendations of the Post World War II Equipment Review Boards in a modern context, the army must look at a way to maximize efficiency. The post-war review boards' biases toward generalization continued to today in the brigade centric force. With formations that are interchangeable, generalized brigades give commanders an independent formation. However, within the shipping and manpower constraints in the current operating environment, generalized brigades are not tailored to the Army's vision of a division focused fight. Striving for the strategic benefits of specialization and the tactical payoffs of generalization, the Army has a solution at hand to solve the problem. To incorporate emerging capabilities, modularity of specialized units allows the Army to maximize efficiency at the division and brigade levels.

⁶⁴ Sean Kimmons, "82nd Airborne Infantry Soldiers to Test Light Tank next Year," *Army News Service*, 27 June 2019, accessed 12 January 2020, https://www.army.mil/article/223749/82nd_airborne_infantry_soldiers_to_test_light_tank_next_year.

Conclusion

The complexity of the world is a constant, and planners struggle to develop solutions to anticipated problems. The actions of planners during the inter-war years, post-World War II reforms, and today all represent a best guess in anticipating solutions to the complexity of what the next conflict would look like. McNair and other inter-war planners developed specialization to maximize efficiency and manage complex strategic and operational problems. Tactically, commanders pushed back against specialization, wanting organic capabilities to limit risk. Changes in the operational environment allowed tactical biases a more prominent voice in the post-war review boards, and today the US Army is still struggling with the problem of capabilities at echelon.

Allied actions in North Africa saw specialization theory's first trial by fire. Initial tactical failures at Kasserine Pass resulted from poor operational planning. However, specialization theory received a majority of the blame. Units in tactically poor positions lacked the capabilities to survive first contact in a fast-paced operational environment. The flexibility of specialization afforded US Commanders in North Africa the ability to survive opening tactical defeats, and then maneuver operationally to defeat the enemy.

The Normandy campaign cemented generalization in the minds of future Army leaders. The tactical situations demonstrated a need for small and cohesive combined arms formations to limit tactical risks. By 1944, the 90-Division Gamble and shipping concerns had shaped the operational environment to drive a change in operational approach from specialization to generalization. Actions in Normandy were doctrinally correct, but as commanders strived for effectiveness, they shifted gradually to generalization. The Broad Front Strategy that used generalized forces so efficiently re-created the problems McNair was trying to solve. The recommendation, at the end of the war, to make these attachments organic in every infantry

division was a flaw that mistook the operational environment of 1944-45 for what the future battlefield would look like.

Post-World War II, the infantry division structure of 1947 required more shipping space, manpower, and logistical resources, to deploy and operate in the field. The General Review Board took experiences from combat leaders, mostly at the division level, whose biases blinded them to the operational and strategic factors that led to specialization. Board members thought little of the future operational environment as they relied on past battlefield experiences to shape the future force.

Many modern parallels exist in the discussion of capabilities at echelon in the US Army. Planners must examine the strategic factors that allowed a generalized formation to win the Broad Front Strategy while allowing the strategic and operational flexibility of specialization. Brigades or divisions in the consolidation area of the multi-domain battlefield require different capabilities than formations facing top-tier enemy units. MFP or armored units are an applicable parallel to the operational environment of World War II. To generalize formations costs the Army efficiency. However, the Army should consider modularizing units of specialized capabilities, such as cyber, electronic warfare, signal intelligence, and precision fires, into self-sufficient units. Modularizing units makes them self-sufficient, allowing them to directly support units, preventing generalized capabilities across the Army. The plug-and-play nature of modular units enables them to support divisions in a variety of missions, while only being attached to the supported unit in times of need, lessening the overall requirement in Army end strength. To build working relationships, and prevent other problems of specialization, modular units should remain attached at the division level for the duration of operations, allowing the division commander to employ the capabilities as needed. The Army continues to argue the balance of capability and deployability, similar to the one that existed in World War II in the form of the specialization versus generalization debate. Modularization of emerging capabilities is a possible answer to an old problem.

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