First Things, First: Grant, Logistics, and Setting Conditions

A Monograph

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The publication of Field Manual 3-0, Operations and the associated transition to large-scale combat operations (LSCO) requires a greater emphasis on responsive operational level logistics than an army optimized for limited contingency and counterinsurgency operations. Although the demands of expeditionary distribution operations may be unfamiliar to many contemporary sustainment leaders, they are not new in the annuls of war. The American Civil War (1861-1865) remains worthy of study for contemporary military professionals. Arguably the first fully industrialized war, the Civil War reached a scale, intensity, and duration that observers did not initially anticipate. Ulysses S. Grant's western campaigns to open the Mississippi River (1862-1863) demonstrate that he was an operational artist that understood the value of logistics to enable his vision. Grant not only grasped the existential nature of supply, but he saw holistic logistics activities as vital operations rather than administrative entanglements. Through his use of basing and decisive points, he was able to extend his operational reach, prevent culmination, dictate the tempo of operations, and manage risk. This monograph examines how Grant harnessed logistics to enable his maneuver and, as a corollary, how he utilized maneuver to extend his operational reach throughout the campaign for the Mississippi River of 1862-1863. This case study thus provides a historical example of how operational logistics enables theater armies in LSCO, which may be relevant for contemporary commanders.

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Abstract

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The publication of *Field Manual 3-0, Operations* and the associated transition to large-scale combat operations (LSCO) requires a greater emphasis on responsive operational level logistics than an army optimized for limited contingency and counterinsurgency operations. Although the demands of expeditionary distribution operations may be unfamiliar to many contemporary sustainment leaders, they are not new in the annuls of war. The American Civil War (1861-1865) remains worthy of study for contemporary military professionals. Arguably the first fully industrialized war, the Civil War reached a scale, intensity, and duration that observers did not initially anticipate. Ulysses S. Grant's western campaigns to open the Mississippi River (1862-1863) demonstrate that he was an operational artist that understood the value of logistics to enable his vision. Grant not only grasped the existential nature of supply, but he saw holistic logistics activities as vital operations rather than administrative entanglements. Through his use of basing and decisive points, he was able to extend his operational reach, prevent culmination, dictate the tempo of operations, and manage risk. This monograph examines how Grant harnessed logistics to enable his maneuver and, as a corollary, how he utilized maneuver to extend his operational reach throughout the campaign for the Mississippi River of 1862-1863. This case study thus provides a historical example of how operational logistics enables theater armies in LSCO, which may be relevant for contemporary commanders.

Contents

Acknowledgements

When choosing a research topic, many former students and current faculty warned about the dangers of choosing a so-called “passion-project.” I endeavored to heed this advice and attempted to find a topic which held a general interest, but not an academic obsession. Throughout the research process, I came to see the application of theory, history, and doctrine and appreciate operational art. My journey included reading thousands of pages of primary and secondary research, a class trip to Vicksburg, excellent discussions, and far more work than I originally anticipated. In the end, attempting to see through the eyes of an operational genius unexpectedly gave me passion for the project.

None of this would have been possible without my true passion in life, my amazing wife and children. Without Megan’s willingness to endure being a “SAMS Widow” during the weekends where I was sequestered in the library, allowing mountains of books to clutter the kitchen table, and helping proofread multiple drafts, I never would have finished this monograph. Additionally, I have to thank Dr. Carlson for allowing me the time to research and work through the writing process. I appreciate the candid discussions about the historiography of my topic and the challenges you presented to my assessments that helped get this monograph approved. Finally, many thanks are due to my indomitable seminar leader, Colonel Michaud. Never too busy to have a chat, never pretentious, and always willing to roll up his sleeves and get “dirty” with the nitty-gritty parts of format and process.

All of these people, and so many others helped me complete this monograph and helped me better appreciate the artistry in military operations.

Acronyms

ADP	Army Doctrine Publication
ADRP	Army Doctrine Reference Publication
CSA	Confederate States of America
FM	Field Manual
JP	Joint Publication
LSCO	Large-Scale Combat Operations

Illustrations

Introduction

As the capstone doctrinal publication for the US Army, the 2017 version of *Field Manual (FM) 3-0, Operations*, has oriented the doctrine, training, and organization of US forces on the task of conducting large-scale combat operations (LSCO).[1] As such, *FM 3-0* now provides the organizing logic for how the US Army understands the operational environment, how it employs tactical and operational level units, and how it maximizes lethality through the synchronization of operations in time, space, and purpose. Lieutenant General Michael Lundy, the commanding general of the Combined Arms Center at Fort Leavenworth, Kansas, and the proponent for *FM 3-0*, recently emphasized in *Military Review* the need to re-enable operational and tactical combat formations. These units will prosecute the tactical and operational maneuver needed to campaign and win in contested domains, against peer adversaries. *FM 3-0* also remains nested with the "US Army Concept for Multi-Domain Combined Arms Operations at Echelons Above Brigade, 2025-2045," which describes the requirement for organically assigned sustainment force structure resident in divisions and corps. These sustainment units will help enable expeditionary maneuver and avoid culmination in LSCO.[2]

Obviously, the transition to LSCO requires a greater emphasis on responsive operational level logistics than an army optimized for limited contingency and counterinsurgency operations. Major General Paul Hurley, a former commander of the Combined Arms Support Command, recently argued: "[w]e (sustainment) must move from enterprise FOB (forward operating base) operations to being more flexible, mobile forces" because "the enterprise approach cannot fully

[1] US Department of the Army, *Field Manual (FM) 3-0, Operations* (Washington, DC: Government Printing Office, 2017), Forward.

[2] Michael D. Lundy, "Meeting the Challenge of Large-Scale Combat Operations Today and Tomorrow," *Military Review* 98, no. 5 (October 2018): 111–18.

support large-scale combat operations."[3] This means that distributed sustainment operations must be integrated with maneuver, requiring commanders to set conditions to extend their operational reach through the use of basing and operational tempo to prevent culmination.

Although the demands of expeditionary distribution operations may be unfamiliar to many contemporary sustainment leaders, they are not new in annuls of war. The American Civil War (1861-1865) remains worthy of study for contemporary military professionals. Arguably the first fully industrialized war, the Civil War reached a scale, intensity, and duration that observers did not initially anticipate. The scale of the war meant that the belligerents had to project forces across half of a continent. Indeed, without the steam powered and communications technology of the Industrial Revolution, it is hard to imagine either side overcoming the tyranny of distance.

While the French Revolutionary and Napoleonic Wars (1792-1815) witnessed the wholesale mobilization of human and material resources, the sheer geographic extent of the Civil War dwarfed nearly all previous Western wars.[4] For example, the distance from Richmond, Virginia, to Baton Rouge, Louisiana, exceeds the distance that Napoleon marched to Moscow from bases in East Prussia and Poland.[5] The Civil War unfolded into a continental war for control of enormous swaths of territory. As such, combat formations had to maneuver hundreds of miles to secure and reinforce positions throughout the country. Moreover, the road network in the southern United States proved abysmal and even the best roads were rarely on par with their European counterparts.[6] Massive areas of operations made the projection of combat power and the logistics support needed to sustain an expeditionary force a herculean task.

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[3] Dani Johnson, "Sustainment Leaders Gather to Discuss Future Operations," *Fort Lee Traveller*, May 14, 2018, accessed January 29, 2019, https://www.fortleetraveller.com/news/local_news/sustainment-leaders-gather-to-discuss-future-operations/article_3bc22a78-578c-11e8-ae1e-a79463b37367.html.

[4] Williamson Murray and Wayne Hsieh, *A Savage War: A Military History of the Civil War*, (Princeton, NJ: Princeton University Press, 2018), 38–39, Kindle.

[5] Ibid., 6.

[6] Ibid., 39.

During the war, combat operations generally occurred in one of two theaters, east and west. The spatial separation from the respective capitals compounded the geographic isolation of the western theater. Unsurprisingly, for both armies it was significantly easier to logistically support campaigns in the eastern theater where access to better transportation infrastructure and industrial manufacturing was more prevalent.[7] An immature transportation network profoundly impacted the Union Army in the west. When the Union advanced into the south, it moved further from supply bases and extended its long lines of supply. Each advance made the distribution network more important to enable momentum and prevent culmination.

Ulysses S. Grant's western campaigns to open the Mississippi River (1862-1863) reveal that he was an operational artist who understood the value of logistics to enable his vision. Grant not only grasped the existential nature of supply, but he judged holistic logistics activities as vital operations rather than administrative entanglements. Through his use of basing and decisive points, he extended his operational reach, prevented culmination, dictated the tempo of operations, and managed risk. In essence, this monograph examines how Grant harnessed operational logistics to enable his maneuver and, as a corollary, how he utilized maneuver to extend his operational reach throughout the Grant's Western campaigns. This case study thus provides a historical example of how operational logistics enables theater armies in LSCO, which may be relevant for contemporary commanders.

Modern Operational Sustainment

According to current US Army doctrine, "sustainment is the provision of logistics, personnel services, and health service support necessary to maintain operations until successful mission completion."[8] When properly combined and leveraged through operational art, these three major elements serve as significant combat multipliers. Logistics, by contrast, is limited to

[7] Murray and Hsieh, *A Savage War*, 39.

[8] US Department of the Army, *Army Doctrine Publication (ADP) 4-0, Sustainment* (Washington, DC: Government Printing Office, 2012), 1.

"maintenance, transportation, supply, field services, distribution, operational contract support, and general engineering support."[9] Doctrinally, the purpose of sustainment activities is to "provide support and services to ensure freedom of action, extend operational reach, and prolong endurance."[10]

The US military structures sustainment activities to provide commodities and services at all levels of war: strategic, operational, and tactical. The strategic level encompasses the Department of Defense, the industrial base, and the national means to procure and produce supplies, weapons, equipment, provisions, and support services.[11] This is achieved through a broad-based approach that incorporates joint capabilities and enterprise level organizations for both force generation and supply chain management. At the strategic level, the US military procures weapons, equipment, and supplies from private firms as well as government owned manufacturing plants. National depots exist for the storage and recapitalization of equipment and munitions, which remain reserved for wartime needs.[12]

Operational logistics focuses on meeting the needs of geographic combatant commanders, field armies, and corps. Theater level sustainment headquarters synchronize logistics by managing stocks and operational contracting, establishing policy, and linking tactical units to enterprise and joint capabilities. Sustainment brigades execute operational level support, which encompasses opening a theater, distributing supplies forward, and routine resupply, maintenance, and retrograde missions. Theater opening establishes initial entry basing, port operations, and building theater stocks to sustain operations for fifteen or more days. Theater distribution establishes a multi-modal transportation network encompassing roads, rail, riverine,

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[9] US Department of the Army, *Army Doctrine Reference Publication (ADRP) 4-0, Sustainment* (Washington, DC: Government Printing Office, 2012), 4-1.

[10] US Army, *ADP 4-0*, 1.

[11] National means includes the economic and fiscal processes to equip and support a standing army.

[12] US Army, *ADRP, 4-0*, 2-1.

and aerial routes. Finally, theater sustainment includes posturing intermediate level bases for supply, regeneration of combat power, and forward distribution platforms to deliver supplies to tactical units.[13] In LSCO, these capabilities will be even more important due to a reduced reliance on contracted support solutions.

Tactical level sustainment is similarly structured for divisions, brigades, and battalions. Typically, logistics formations focus on distribution from forward supply bases or maintain mobile stocks that enable commanders to continually maintain freedom of action. At each tactical echelon, logistics units maintain two to five days of supply for critical commodities as a stockage objective. These stockage objectives can be thought of as a sort of "tether" that dictates when a unit logistically culminates.[14] Tactical level logistics focuses on the "last mile" of the distribution network.[15]

The distribution process logistically connects the three levels of war. According to *Army Techniques Publication (ATP) 4-0.1, Army Theater Distribution,* "distribution enables operational reach by integrating and synchronizing Army and joint capabilities to prolong the operational endurance while maintaining sufficient support to ensure freedom of action."[16] Commanders must integrate the distribution of supplies and services with the operational maneuver plan and place emphasis on its execution as a key component of the mission. Effective distribution is part of operational logistics and links supply and transportation capabilities to ensure that commanders have enough supplies to achieve their objectives.[17] Theater distribution plans draw on the physical network of logistics nodes established through basing and connected by lines of

[13] US Army, *ADRP 4-0,* 2-8–2-10.

[14] US Department of the Army, *Army Doctrine Reference Publication (ADRP) 3-0, Operations* (Washington, DC: Government Printing Office, 2016), 2-9.

[15] US Army, *ADRP 4-0,* 2-9–2-12.

[16] US Department of the Army, *Army Techniques Publication (ATP) 4-0.1, Army Theater Distribution* (Washington, DC: Government Printing Office, 2014), iv.

[17] Ibid., v.

communication. Thus, when examining U.S. Grant's western campaigns, distribution serves as a necessary antecedent for maneuver, as it will be for any modern LSCO.

Operational Art

US Joint doctrine defines operational art as "the cognitive approach by commanders and staffs—supported by their skill, knowledge, experience, creativity, and judgment—to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, means, and risks."[18] The US Army further refines this definition for land combat by emphasizing the connections relating to key elements of operational art – specifically tempo, operational reach, and military objective. According to *Army Doctrine Reference Publication 3-0, Operations*, "operational art is the pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose."[19] The elements of operational art do not constitute a checklist, but rather a means to describe and focus operations.[20] As such, their importance and prominence necessarily vary by campaign, the terrain, and the experience of the operational artist. The elements of operational art remain nested with operational design and provide "a bridge between strategy and tactics, linking national strategic aims to operations that must be executed."[21]

In designing his western campaigns, U.S. Grant used multiple elements of operational art. Operational reach is the combined effects of "intelligence, protection, sustainment, endurance, and relative combat power. It balances the natural tension among endurance, momentum, and protection."[22] Doctrinally described as a "tether," the limit of operational reach is the point of

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[18] US Department of Defense Joint Staff, *Joint Publication 5-0, Joint Planning* (Washington, DC: Government Printing Office, 2017), xxi.

[19] US Army, *ADRP 3-0*, 2-1.

[20] Ibid., 2-4. The complete list of elements includes End State and Conditions, Center of Gravity, Decisive Points, Lines of Operations and Lines of Effort, Basing, Tempo, Phasing and transitions, Culmination, Operational Reach, and Risk. This monograph does not discuss all elements.

[21] US Joint Staff, *JP 5-0*, IV-4.

[22] US Army, *ADRP 3-0*, 2–9.

culmination.[23] Basing projects and supports operations, which enables the regeneration and sustainment of combat power.[24] Decisive points consist of geographic locations, key events, or critical factors and functions that provide commanders a marked advantage or materially support success.[25] Culmination refers to the point at which units can no longer continue combat operations.[26] Tempo "is the relative speed and rhythm of military operations over time with respect to the enemy."[27] Commanders control the tempo of operations to retain and exploit the initiative. Finally, risk pertains to the relative costs and benefits associated with a military operation. Constant risk assessment is essential to seize opportunities for bold maneuver.[28]

Grant employed the above elements in order to arrange his tactical actions in time, space, and purpose. In visualizing the campaign, commanders can conceptualize operational logistics and logistics distribution as cognitive connective tissue that fuses tactical engagements to operational maneuver. Grant used logistics basing, supply, transportation, and distribution functions to ensure he did not culminate prior to achieving his operational objective: Vicksburg, Mississippi. The seizure of the so-called "Confederate Gibraltar" would further the mutually supporting strategic goals of opening the Mississippi River to military and commercial traffic and dividing the Confederacy.[29]

Civil War Sustainment

At the outbreak of the Civil War in 1861, the geographic expanse of a continental nation proved nearly unprecedented in the annuls of western warfare. The area of operations extended over 1.1 million square miles from Washington, DC, south to the Florida Keys, west to Texas and

[23] US Army, *ADRP 3-0*, 2-9.

[24] Ibid., 2-6.

[25] Ibid., 2-5.

[26] Ibid., 2-9.

[27] Ibid., 2-7.

[28] Ibid., 2-10.

[29] Terrence J. Winschel, *Vicksburg: Fall of the Confederate Gibraltar* (Abilene, TX: McWhiney Foundation Press, 1999).

New Mexico, north to parts of Kansas and Missouri, and as far east as Pennsylvania. Including border states and major supply routes, Civil War campaigns unfolded in at least fifteen states and additional territories.[30] The proper arrangement of engagements to form comprehensive operations at such a vast scale and size of the various theaters necessitated new conceptions of temporal and spatial magnitude, which helped drive the expansion of federal capabilities.[31] The antebellum federal government was miniscule compared to its modern form. In order to respond to the rebellion, the United States experienced the largest growth of federal power since its inception.[32] In 1861, the US Army amounted to little more than a frontier constabulary of only approximately sixteen thousand soldiers and officers.[33] Moreover, most military establishments comprised small fortified camps or outposts, generally only supporting company to regimental sized units.

Support Structure

On the eve of war, Brigadier General Joseph Johnston centrally supported these disbursed establishments as the US Quartermaster General.[34] The Quartermaster General let contracts to supply these outposts from regional supply depots and intermediate supply bases. Ironically, Johnston's contracting and organizational work formed the basis for expansion of the US Quartermaster Department that would help defeat him in the field after he ignominiously traded his "Yankee-blue" duties for "Rebel-grey" command.[35] Quartermasters employed railroads, coastal shipping, river steamers, wagons, and draft animals to form a multi-modal distribution

[30] Google Maps provided the approximate square mileage of the Civil War theater of operations as defined by commonly known members of the CSA, border states, and northern offensive expeditions.

[31] Archer Jones, *Civil War Command and Strategy: The Process of Victory and Defeat* (New York, NY: The Free Press, 1992), 128–31.

[32] Richard Franklin Bensel, *Yankee Leviathan: The Origins of Central State Authority in America 1859-1877* (Cambridge: Cambridge University Press, 1990).

[33] Archer Jones, Herman Hattaway, and Jerry A. Vanderlinde, *How the North Won: A Military History of the Civil War* (Urbana, IL: University of Illinois Press, 1991), 1.

[34] James A. Huston, *The Sinews of War: Army Logistics, 1775-1953* (Washington, DC: Office of the Chief of Military History, US Army, 1966), 168.

[35] Huston, *The Sinews of War*, 168.

network. While some outposts augmented their subsistence requirements by growing crops, raising a few animals, or locally purchasing food, the outposts generally relied on the delivery of provisions and equipment. This demanded the establishment and maintenance of supply depots manned by quartermaster officers with enlisted infantrymen detailed to support duties.[36]

Perhaps sufficient for a small frontier army, this sustainment infrastructure proved wholly inadequate to support an army that grew to over one million men in arms. Nonetheless, having a distribution process and existing contractors in place gave the Union an administrative and logistical advantage at the outset of the war.[37] War required enlarging regional depots to accommodate greater throughput and storage of supplies. Theater armies employed intermediate supply bases along lines of communication with the depots. Finally, forward supply bases positioned stocks within reach of front-line units. Generally, commanders attempted to stay within one hundred miles of their most forward supply base due to the reliance on slow moving wagon trains.[38] By contrast, the rebel government had to create a brand new support structure on the fly. Indeed, both sides undertook a massive expansion of the existing military cadres and support structures.

Modern US officers can readily observe some of the similarities between the Civil War structure and current practices. Distribution played a critical role in unifying the levels of supply throughout the area of operations. Much like today, depots provided consolidation and distribution to intermediate and forward supply bases. Further, Civil War quartermasters utilized a multi-modal network to transport supplies and troops. Finally, the importance of contracted manufacture and procurement of goods is fundamentally similar.

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[36] Huston, *The Sinews of War*, 170.

[37] Ibid., chap. 11.

[38] Mark S. Hurley, "Union Logistics in the Vicksburg Campaign" (MMAS Thesis, US Army Command and General Staff College, 1992), 21.

Multi-Modal Distribution Network

Both the Union and the CSA established a multi-modal distribution network to support field armies during the war. While many students of history are well aware of the influence of railroads, steam power provided rapid, effective, and affordable maritime and riverine transportation as well. Additionally, draft animals pulled millions of tons of supplies in wagons and packs, while countless soldiers carried clothing, equipment, rations, and munitions in their packs and haversacks.[39] Since most senior officers had been educated at the United States Military Academy at West Point, New York, they were likely familiar and adherent to Jominian principles, including logistics, basing, and decisive points.[40] The availability of transportation and supplies shaped decisions throughout the war, and it was especially salient in the western theater where the tyranny of distance constricted maneuver much more than in the east.

Although Grant admitted after the war that he had never read Jomini's work, Napoleonic warfare and French doctrine constituted the paradigm *du-jour* and influenced the entirety of his training and experience.[41] Jomini simply described logistics as "the art of moving armies."[42] However, Major General Henry "Ole' Brains" Halleck, a Napoleonic admirer, further added supply to his definition of "all the practical details of moving and supplying armies," or in

[39] Earl J. Hess, *Civil War Logistics: A Study of Military Transportation*, Kindle ed. (Baton Rouge: Louisiana State University Press, 2017), 101–13, Kindle.

[40] Michael A. Bonura, *Under the Shadow of Napoleon: French Influence on the American Way of Warfare from the War of 1812 to the Outbreak of WWII* (New York, NY: New York University Press, 2012), 80–83.

[41] Ibid., 80; Donald J. Stoker, *The Grand Design: Strategy and the U.S. Civil War* (New York, NY: Oxford University Press, 2010), 10.

[42] Antoine Henri baron de Jomini, *The Art of War*, trans. G. H. Mendell and W. P. Craighill, (Philadelphia: J.B. Lippincott & Co., 1862), 43, Kindle.

modern parlance, logistics distribution.[43] These principles undoubtedly influenced Grant's conceptions of support functions.[44]

In Grant's western campaigns, logistics meant moving men, rations, clothing, camp equipment, fortification material, weapons, and munitions. Critically important was the need for animal fodder and coal for steamships. While wood was relatively easy to procure, coal provided significantly more power per cubic foot of transportation space. Thus, steamboats could operate far longer with the same load if supplied with coal.[45] This necessitated transporting manufactured material, most provisions, and large amounts of fodder from the industrial centers in the northeast to the various areas of operation.

Five dominant modes of transportation provided logistics distribution and operational maneuver: coastal shipping, river steamers, railroads, draft and pack animals, and individual manpower. Because Grant understood the value of enabling effects provided by transportation assets, he prioritized the maintenance of railway tracks, demanded efficient use of rail cars and steamers, ensured animal fodder for wagon trains, and rested soldiers between marches.[46]

The battle for resources commenced as soon as the war broke out. The Union Navy blockaded southern ports as part of the "Anaconda" plan first established by General-in-Chief, Winfield Scott. Anaconda was essentially the manifestation of a "logistics strategy" where the Union economically strangled the rebellious southern states into submission.[47] Under the plan, the Union Navy simultaneously prevented the CSA from importing industrial and military goods, and exporting cash crops needed to generate capital and sustain their economy. Grant's western

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[43] Henry W. Halleck, *Elements of Military Art and Science: Or, Course of Instruction in Strategy, Fortification, Tactics of Battles &C., Embracing the Duties of Staff, Infantry, Cavalry, Artillery, and Engineers, Adapted to the Use of Volunteers and Militia*, 3rd ed. (London: Little Britain, 1863), 38.

[44] Logistics concerns, including maintaining distribution capacity, are prevalent in his correspondence and strategic guidance to Grant, both as the theater commander, and as General-in-Chief.

[45] Hess, *Civil War Logistics*, 1580, Kindle.

[46] Ibid., 96, Kindle.

[47] William L. Shea and Terrence J. Winschel, *Vicksburg Is the Key: The Struggle for the Mississippi River* (Lincoln, NE: University of Nebraska Press, 2003), 2–4.

campaigns embodied a large portion of the Anaconda plan. Western battles focused on opening lines of communication. Thus, theater commanders sought control of the Mississippi River, railroads, and road junctions in order to deny rebels the use of interior lines. With each tactical engagement to control these transportation conduits, the junctions became Jominian decisive points. Their control enabled Union forces to materially weaken the confederates' ability to sustain a field army, extending Union operational reach.[48]

Geographically, the blockade focused on closing the major southern coastal ports of Charleston, South Carolina; Savannah, Georgia; Mobile, Alabama; and New Orleans, Louisiana. Additionally, the navy also denied access to the Mississippi River from the Gulf of Mexico.[49] In concert with the costal blockade, Anaconda sought to seize control of the Mississippi River by sending "a small force on the river and a large one moving parallel…to 'turn and capture' the strong points on the river."[50] By seizing Confederate strong points, the Union would enjoy virtually unimpeded access to the river, and could deny shipment of critical goods from Texas, Louisiana, and Arkansas to the rest of the Confederacy.

Initially, the rebels held three major strong points to control riverine traffic. The northern most Confederate defensive point on the river, Island Number 10, served as a gateway to the southern Mississippi River.[51] Vicksburg, situated on high bluffs, provided the means to control access to the middle section, while New Orleans commanded the Mississippi River Delta. A secondary strong point, Port Hudson, Louisiana, contested navigation between Vicksburg and New Orleans after its establishment in March 1862. Without breaking the rebel grips at these major stations, the Union could not reestablish free travel throughout the length of the great

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[48] Jomini, *The Art of War*, 1281–88, Kindle.

[49] G. Welles to W. W. McKean, May 4, 1861, Charles W. Stewart, *Official Records of the Union and Confederate Navies in the War of the Rebellion*, ser. 1, vol. 4 (Washington, DC: US Government Printing Office, 1894), 155–57. (hereafter cited as *O.R.N.)*

[50] Jones, *Civil War Command and Strategy*, 46.

[51] Winston Groom, *Vicksburg, 1863* (New York: Alfred A. Knopf, 2009), 72. Island Number 10 fell just as the battle of Shiloh dominated the national dialogue, making it easy to overlook its importance.

waterway of North America. Figure 1, *Mississippi Operations*, shows these key locations and lists the actions to capture them.[52] Planners considered Vicksburg the most important and most difficult to seize due to highly defensible terrain, a relatively robust transportation infrastructure, and its position in the Confederate interior. If taken, it would sever the Texas-Mississippi link and effectively halve the Confederacy. Although contested by the Confederate River Defense Fleet, the Union Navy maintained ever-increasing superiority along the watery highways of the American rivers.[53]

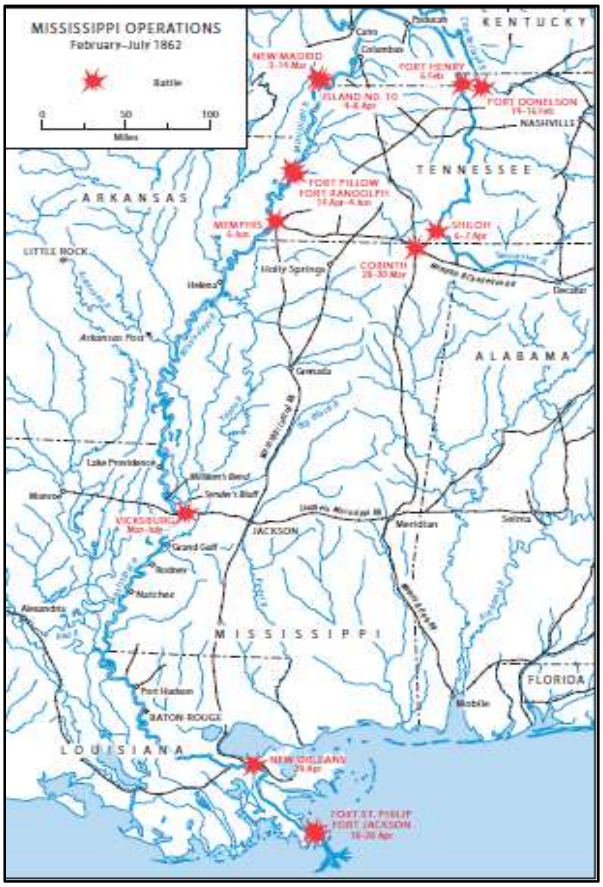

Figure 1. Mississippi Operations. Christopher R. Gabel, *The Vicksburg Campaign: November 1862-July 1863*, CMH pub 75–8 (Washington, DC: Center of Military History, US Army, 2013), 10.

[52] Christopher R. Gabel, CMH pub 75–8, *The Vicksburg Campaign: November 1862-July 1863*, (Washington, DC: Center of Military History, US Army, 2013), 10.

[53] Shea and Winschel, *Vicksburg Is the Key*, 1–5.

Coastal Shipping

Beyond the obvious economic implications, the blockade logistically hampered the CSA from using costal shipping for troop transportation or resupply.[54] Despite having over thirty-five hundred miles of coastline and direct maritime accesses with major ports in nine of the eleven southern states, "there is only slim evidence that the Confederates used coastal ships at all."[55] The Union, however, made extensive use of coastal shipping, lengthening their operational reach and allowing Union commanders to project combat power and supply their armies in the field. Upon the seizure of New Orleans in early 1862, Federal quartermasters supplied soldiers with materiel and food from as far away as New York City – a distance of over seventeen hundred nautical miles. Ultimately, this sea line of communication helped maintain the western theater as Union forces continued to advance up the eastern side of the Mississippi River towards Vicksburg.[56]

Railroads

Railroads were perhaps the most recognizable symbol of the industrialized nature of the Civil War. Although railroad transportation is not a complex concept, initially many military practitioners failed to grasp its importance in enabling military objectives. During his western campaigns, Grant targeted critical railroad junctures, including Corinth, Mississippi, to extend his operational reach and propel the rebels toward culmination.[57]

For most Americans, railroad transportation represented a novel technology, and its employment for military purposes was nearly unprecedented. Indeed, significant American railroad expansion only occurred within the last twenty-five years before the Civil War. Notably,

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[54] Losing maritime access denied the CSA the ability to project material and maneuver support to field armies between different theaters – a significant strategic implication. Additionally, it forced the CSA to rely on internal production of war materials or pay unsustainable rates for blockade-runners who could only import limited quantities on small ships to avoid detection by the Union Navy.

[55] Murray and Hsieh, *A Savage War*, 124; Hess, *Civil War Logistics*, 2288, Kindle.

[56] Hess, *Civil War Logistics*, chap. 5.

[57] John Elwood Clark, Jr., *Railroads in the Civil War: The Impact of Management on Victory and Defeat* (Baton Rouge, LA: Louisiana State University Press, 2001), 5.

the greatest expansion of rail occurred in the 1850s.[58] Southern railroads expanded dramatically during the 1850s, with over eight thousand three hundred miles of new track being laid. Indeed, "75 percent of the total railroad mileage that the Confederacy would have at the start of the Civil War was newly constructed in the 1850s."[59] Despite the southern expansion, northern or loyalist executives monopolized most managerial positions and knowledge in companies both north and south. Thus, upon secession, a significant "brain-drain" occurred in the South as many unionists crossed over to northern lines. As such, the North held a decided advantage in managerial and operational expertise, as well as trained engineers and operators.[60]

Initially, this wealth of expertise remained untapped, owing to the lack of an effective administrative apparatus to focus and manage transportation efforts. However, this dearth of experience did not last long. President Lincoln's administration had no compunction about centralizing bureaucratic power, and he was not afraid to use wartime powers to impose order on chaos. As such, the Union had a much deeper bench from which to draw talent, and the political will to harness it centrally. Secretary of War Edwin Stanton, Quartermaster General M.C. Meigs, and field commanders all actively identified talented managers and drew on civilian expertise to realize Union material potential and leverage it towards victory.[61] Moreover, the North was not shy about using wartime powers to compel private rail lines to comply with governmental directives.[62]

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[58] George Edward Turner, *Victory Rode the Rails: The Strategic Place of the Railroads in the Civil War* (Lincoln, NE: University of Nebraska Press, 1992), 15–28.

[59] William G. Thomas, *The Iron Way: Railroads, the Civil War, and the Making of Modern America* (New Haven, CT: Yale University Press, 2011), 26.

[60] Clark, *Railroads in the Civil War*, 12–19; Christopher R. Gabel, *Railroad Generalship: Foundations of Civil War Strategy* (Fort Leavenworth, KS: Combat Studies Institute, 1997), 22.

[61] Clark, *Railroads in the Civil War*, 3–25. Union leaders recruited men like Lewis Parsons, Thomas Scott, and Daniel McCallum for their managerial expertise and granted them military rank commensurate with the tremendous responsibilities associated with managing the strategic and operational transportation network.

[62] Turner, *Victory Rode the Rails*, chap. 12.

The South, by contrast, struggled to consolidate authority over railroad management. Having previously served as the US Secretary of War in the Polk Administration, Confederate President Jefferson Davis realized the need for central control of the railroad system. In fact, he asked for and received "strong legislation that allowed the government to take control of the railroads if it proved necessary to assure cooperation."[63] Although granted the authority, Davis never employed it.[64] Initially, centralization seemed unnecessary since most southern railroads offered their services to the government free of charge, perhaps out of patriotic fervor or calculating that they could better maintain their independence as volunteer partners rather than nationalized assets.[65] Whatever the reason, southern railroad management remained fragmented and ineffective throughout the war.

The South also maintained industrial capacity at almost twenty thousand other privately-owned factories and mills scattered throughout the Confederacy, and at key industrial plants such as the Tredegar Iron Works in Richmond, Virginia.[66] Notwithstanding southern manufacturing, the northern United States boasted significantly more industrial output, mostly concentrated in the Northeast. Additionally, much of the Ohio River Valley, Illinois, Missouri, Kentucky, Pennsylvania, New Jersey, and upstate New York were agricultural power-houses before, during, and after the Civil War and amply fed Union armies. Thus, the North's material advantage "conferred staying power and numerical superiority, but not technological superiority."[67]

When compared to independent countries, the CSA was quite "industrial." What the CSA critically lacked, however, was enough capacity to *simultaneously* produce arms and steel needed

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[63] John Elwood Clark, Jr., *"To Strain Every Energy": Civil War Railroads: A Comparison of Union and Confederate War Management* (Ann Arbor, MI: UMI Dissertation Services, 1997), 9.

[64] Ibid.

[65] Gabel, *Railroad Generalship*, 22.

[66] Turner, *Victory Rode the Rails*, 105; Murray and Hsieh, *A Savage War*, 47.

[67] Clark, *Railroads in the Civil War*, 22.

for railroad and locomotive maintenance and construction.[68] Additionally, the agricultural industry supported local procurement of rations and animal fodder throughout their territory. When rebel armies retreated, they fell back on established supply bases and a sympathetic population.[69] By contrast, the Union Army rarely foraged for significant quantities of rations and instead relied on a multi-modal distribution network, of which the railroads served as the central nervous system. The railroad enabled the Union to "shrink" the theater and sustain the army.

In the western theater, railroad usage proved a common part, but not the dominant component of the distribution network. Tennessee, Mississippi, and Alabama had relatively robust railroads, encompassing over twelve hundred miles of track that connected major cities to each other. However, a shortage of east-west connections existed throughout the CSA, significantly impeding the movement of men and supplies between the various areas of operation. As such, without lateral redundancy, the existing connections in the theater were all the more important. Specifically, the lines in northern and central Mississippi that connected Memphis to Chattanooga, and Vicksburg to Atlanta, via Meridian, Selma, and Montgomery, proved vital for lateral movements.[70] Despite these limited connections, the CSA enjoyed relatively strong north-south routings. The Mississippi Central Railroad, via connection to the Mississippi and Tennessee Railroad in Grenada, Mississippi, linked New Orleans north all the way to Memphis.[71] Additionally, this line supported the Mississippi state capital, Jackson, which served as the confederate support base for Vicksburg.

These interlocking rail lines enjoyed a high degree of standardized rail gauges. With the exception of relatively minor spur lines in Louisiana and Arkansas, all of the major lines in the

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[68] Turner, *Victory Rode the Rails*, 105.

[69] Clark, *Railroads in the Civil War*, 15–24.

[70] Turner, *Victory Rode the Rails*, 30–33. Turner's research well documents the development of both Northern and Southern rail Civil War infrastructure.

[71] Turner, *Victory Rode the Rails*, 30.

western theater were five-foot gauge tracks.[72] Each of these rail junctions emerged as decisive points for Grant as he maneuvered towards Vicksburg, but none more so than Corinth. Grant identified Corinth's importance as a strategic transportation junction, later advocating bold maneuver to seize it. In his memoirs, Grant reflected:

> Corinth was a valuable strategic point for the enemy to hold, and consequently a valuable one for us to possess ourselves of. We ought to have seized it immediately after the fall of Donelson and Nashville, …but failing then it should have been taken, without delay on the concentration of troops at Pittsburgh landing after the battle of Shiloh.[73]

Grant's identification of Corinth's importance illustrated his grasp of setting the conditions for operational success with logistics infrastructure.[74] Southern railroads therefore provided interior lines that both armies sought to use to exploit the power of the central position.[75]

River Steamers

As previously described, the continental sized area of operations in the Civil War was nearly unprecedented in scale. Fueled by the industrial revolution, both North and South sought to harness technology and militarize civilian infrastructure. If the railroad resembled a nervous system, the American waterways were the carotid and femoral arteries of the nation – connecting its Washington, DC "head" to the national "body." In the west, these essential arteries provided east-west access into Kentucky and Tennessee from the Ohio, Tennessee, and Cumberland Rivers, overcoming gaps in the rail network. Above all, the mighty Mississippi River itself extended over two thousand miles in total with secondary rivers providing additional navigation

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[72] United States Military Academy, *Southeastern United States: Railroads of the Confederacy and Boarder States*, The American Civil War (West Point, NY: United States Military Academy, n.d.), https://www.usma.edu/sites/default/files/inline-images/academics/academic_departments/history/AmCivilWar/ACW02.pdf.

[73] Ulysses S. Grant, *Personal Memoirs of U.S. Grant*, ed. James M. McPherson, vol. 1 (n.p.: Public Domain Book, n.d.), 141, Kindle.

[74] Ibid., 124. Grant noted in his memoirs, "Still another railroad connects Corinth with Jackson, in west Tennessee. If we obtained possession of Corinth the enemy would have no railroad for the transportation of armies or supplies until that running east from Vicksburg was reached. It was the great strategic position at the West between the Tennessee and the Mississippi rivers and between Nashville and Vicksburg."

[75] Kevin L. Dougherty, *Leadership Lessons: The Vicksburg Campaign, 1862-1863* (Havertown, PA: Casemate, 2011), 13–14.

throughout the United States. As the second largest river in the world, the Mississippi River provided an enormous distribution capability. Due to the volume of its flow, despite having the last four hundred fifty miles below sea level, it pushed uphill before reaching the Gulf of Mexico. In fact, the river drained "41 percent of the continental United States" and provided access to important parts of the South's interior.[76] Just one major tributary, the Ohio River, provided more than one thousand miles of navigable channels. In total, the western rivers extended at least sixteen thousand miles and provided navigable access in all cardinal directions.[77]

The western rivers offered a well-developed transportation system by the time of the war. Steamboats connected the Ohio River Valley with the Gulf of Mexico, giving notable importance to cities at the confluence of the tributaries.[78] Due to the increased carrying capacity of steamboats, cargo and freight traffic was still burgeoning in 1861.[79] The western waterways were circuitous and winding, with many natural hazards. Sand bars, snags, and steamboat wreckage required typical steamers constructed with a very shallow draft and a sturdy hull. Passenger cabins occupied a relatively weak forecastle above a large cargo hold. Indeed, an average steamer carried a mixed payload of over two hundred fifty tons of passengers, animals, and other cargos.[80] Additional barges efficiently increased the carrying capacity of riverine transport at fractional financial cost, yet significantly slowing the rate of travel. Although primarily used for coal, forage, and dry cargos, barges transported troops when needed. Notably, barges helped extend

[76] Karen M. O'Neill, *Rivers by Design: State Power and the Origins of U.S. Flood Control* (Durham, NC: Duke University Press, 2006), 32–33.

[77] Hess, *Civil War Logistics*, 847–71, Kindle.

[78] Edwin C. Bearss, *The Campaign for Vicksburg: Vicksburg Is the Key*, vol. 1 (Dayton, OH: Morningside, 1985), 28–29.

[79] Railroads had taken the lead in antebellum passenger traffic, as railroad travel was faster due to more direct routing.

[80] Hess, *Civil War Logistics,* 950, Kindle.

Grant's operational reach by providing transportation for an entire division of troops for the famous running of the guns in April 1863.[81]

Grant fully realized the military potential of the western riverine system for both logistics and maneuver. His first battle, at Paducah, Kentucky on September 6, 1861 secured the confluence of the Tennessee and Ohio Rivers.[82] Afterwards, during the winter of 1862, he moved against Forts Henry and Donelson in Tennessee. In so doing, he opened the interior of Tennessee via the Cumberland River, making Nashville, Tennessee, untenable. Moreover, Grant understood the need for cooperation with the Union navy to fully realize the potential for amphibious operational maneuver. As such, he developed an important rapport with both Admirals Andrew Foote and David Porter. Their Mississippi River squadron provided security for waterborne logistics distribution, joint fire support, and significant troop transportation.[83]

In supporting his army, Grant leveraged steamboat logistics throughout his campaigns for the Mississippi River. He understood the need to set conditions for operational maneuver by establishing forward supply bases with appropriate security from which to draw resupply and coordinate transportation.[84] His central and intermediate supply depots were both located along the Mississippi River in St. Louis, Missouri, and Memphis respectively.[85] Since both locales connected directly to the rail and road networks, he leveraged geographic and modal redundancy to minimize logistical risk to mission. As he maneuvered down the Mississippi River, he

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[81] Hess, *Civil War Logistics,* 1194, Kindle.

[82] Adam Badeau, *Military History of Ulysses S. Grant, from April, 1861 to April, 1865*, vol. 1 (New York, NY: D. Appleton & Company, 1885), 11–12.

[83] Murray and Hsieh, 139; A. H. Foote to Welles, April 11, 1862, *O.R.N.*, ser. 1, vol. 22, 762–68. During the seizure of Forts Henry and Donelson, and at Shiloh and Grand Gulf, riverine gunboats provided critical fire support.

[84] Grant, *Memoirs*, 180–82; U. S. Grant to J. A. McClernand, May 9, 1863, Ulysses S. Grant, *The Papers of Ulysses S. Grant*, ed. John Y. Simon, vol. 8 (Carbondale, IL: Southern Illinois University Press, 1967), 181–82. Grant directed McPherson to provide security for his forward supply base at Perkin's Plantation. Grant ordered McClernand to conduct route reconnaissance for distribution operations and to send a "competent officer to Perkin's plantation to superintend the transportation of your remaining camp and garrison equipage to Grand Gulf, and the storage thereof at that point."

[85] Hurley, "Union Logistics," 39–40.

established supply stocks at Milliken's Bend and Young's Point, Bruinsburg Landing, Grand Gulf, and finally at Chickasaw Bayou in order to maintain overland lines of communication less than one hundred miles.[86] Consequently, each location afforded easy access for the landing of shallow draft steamers, as well as room for staging troops and supplies.

Wagons

Although commanders preferred rail and riverine transportation for strategic and operational logistics support, battles rarely occurred on the docks or at train depots. As such, tactical transportation of supplies and equipment required movement from intermediate supply bases to forward positions by brigade and regimental trains.[87] These trains typically consisted of quartermaster and commissary stores, as well as ambulances for medical evacuation. Extensive wagon trains with support personnel trailed the combat formations, providing continuous tactical support. Throughout the war, commanders attempted to limit the number of wagons and support vehicles by issuing both regulations and field orders.[88] After a pointed recommendation from the Quartermaster General to reduce the size of the support column, in October 1862, Major General Halleck, then General in Chief of the Union Army, issued General Order Number 160, which targeted perceived excess in headquarters trains by limiting each corps to four wagons and divisions and brigades to three. Sparse allotments for infantry regiments only provided six wagons for ten companies, but artillery batteries and cavalry squadrons received three each, to account for ammunition and fodder requirements.[89]

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[86] Hurley, "Union Logistics," 24.

[87] Hess, *Civil War Logistics*, 113, Kindle.

[88] M. C. Meigs to H. W. Halleck, August, 18 1862, *O.R.,* ser 1., vol. 12, pt. 3, 596–97.

[89] General Orders No. 160, October 18, 1862, *O.R.*, ser. 3, vol. 2, 671–72; Dougherty, *Leadership Lessons*, 121–22. The magnitude of the support column is essential to grasp in order to appreciate Grant's desire to secure lodgments, intermediate supply depots, and forward basing to reduce the vulnerability of his communications. Due to the slow movement of wagon trains and poor roads, maneuver generally culminated beyond 100 miles of a supply base. At times, wagon trains of over 200 vehicles traversed central Mississippi to keep Grant's army supplied.

Using common specifications, manufacturers built wagons, christened "Uncle Sam's chariots," and maintained riverine and coastal access for forward movement. Generally, well-made Union wagons included a toolbox, a feed trough, canvas coverings, and some common spare parts. Road conditions and their construction dictated the hauling capacities, but they typically hauled around twenty-five hundred pounds.[90] Both armies relied on wagons for "last mile logistics" in all theaters. Grant extensively used wagons to push supplies forward from his base at Holly Springs and understood their capabilities and limitations. Wagons proved particularly susceptible to the perennially poor roads in the area of operations. Rain turned the roads to muddy quagmires and could slow movement to a virtual halt. As such, in December 1862, Grant slowed the tempo of his march south in order to keep his wagon train within supporting distance.[91] His direct involvement in ordering supportable maneuver is indicative of the importance Grant personally placed on logistics concerns. In contrast to Union wagons, the CSA lacked the managerial foresight, political will, and industrial capacity to standardize its distribution network. As such, southern logistics often employed any type of wagon available, which compounded the complexity of logistics planning efforts.[92]

Manpower

Manpower supplied transport and materiel throughout the war. Indeed, individual armament included a .58 caliber rifled-musket with an eighteen-inch bayonet and a basic load of one hundred rounds of ammunition and a corresponding number of percussion caps.[93] Soldiers, in both armies, carried their basic weapons, personal clothing, uniform coats, bed rolls and blankets, hygiene items, and personal comfort items. Additionally, they marched with a canteen, personal

[90] Hess, *Civil War Logistics*, 2752, Kindle.

[91] Grant to C. S. Hamilton, December 5, 1862, *O.R.*, ser. 1, vol. 17, pt. 1, 386–87.

[92] Hess, *Civil War Logistics*, 3003, Kindle.

[93] Theodore Laidley, ed., *The Ordnance Manual for the Use of the Officers of the United States Army*, 3rd ed. (Philadelphia, PA: J. B. Lippincott, 1862), 183, 233.

mess kit, three days of rations, ammunition, and powder.[94] With the exception of senior officers, personal equipment did not generate an operational transportation requirement. Assuming a full complement of equipment, the average soldier shouldered somewhere between 28 to 35 pounds of gear, plus an additional nine-pound rifle.[95]

Historian Archer Jones argues that, although attritional in nature, the Union strategy ultimately focused as much on the material means for making war as it did with the destruction of Confederate field armies. Jones concludes that Grant "implicitly rejected a combat strategy and chose a logistics strategy."[96] Grant's western campaigns distinguish him as an operational artist willing to set conditions with logistics basing. Moreover, through the attrition of transportation and industrial means, he induced the culmination of Confederate forces in his area of operations.

Strategic Context

Command and Staff

Both Union and Confederate armies adopted the "Scott" battle staff formalized after the Mexican-American War by General Scott. While similar to modern staffs, these organizations were very modest in number and limited in scope of responsibilities. Most staffs consisted of only officers, with few enlisted personnel available to assist. The general staff encompassed an aide-de-camp, an adjutant general, an assistant inspector general, and a chief of staff. The so-called "staff corps" contained "specialty expertise," including engineer, quartermaster, commissary, and artillery officers; however, many of these officers never received any formal training, save the engineer if a West Point graduate.[97]

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[94] The Quartermaster Department acquired and distributed these items to new units, and provided replenishment throughout the war. Once distributed, human lift, not transportation assets, carried what would have amounted to mountains of equipment.

[95] Laidley, *Ordnance Manual*, 183, 233; Special Order No. 65, March 7, 1863, *O.R.*, ser. 1, vol. 25, pt. 2, 487–88. In general, according to specifications of personal equipment listed in *The Ordnance Manual*, individual soldiers most likely carried a lighter load than modern infantry.

[96] Jones, *Civil War Command and Strategy*, 132.

[97] Christopher R. Gabel, *Staff Ride Handbook for The Vicksburg Campaign, December 1862-July 1863* (Fort Leavenworth, KS: Combat Studies Institute, 2001), 9.

Most importantly, the chief of staff served primarily as a personal advisor or confidant to the commander, not a synchronizing agent.[98] Thus, cross-functional cooperation and administrative, as well as logistical, directives, were the direct purview of the commander. Grant's staff proved no exception. In terms of operational logistics planning, Civil War staffs depended almost exclusively upon the vision of the commander, as most division, corps, and theater level quartermaster officers typically remained at their respective supply bases to ensure communication with higher echelon support. Quartermasters did not generally synchronize tactical support functions or write support annexes for field orders. As such, the most successful commanders had to visualize and anticipate support requirements, if not the actual quantities, for themselves. Grant, having served as a quartermaster officer both during and after the Mexican-American War, held a distinct advantage in understanding supply and transportation realities.[99]

Resources

The Union enjoyed many material advantages, but victory was by no means a foregone conclusion. Despite popular contemporary and historical characterizations of the northern states as disproportionally industrialized, both halves of the country enjoyed relatively robust manufacturing, agricultural, and transportation capabilities compared to other nations.[100] Although industrial potential was the most often cited imbalance, population proved to be even more important once the war became attritional. According to the federal census of 1860, the rebellious states numbered around 9.1 million people, however, more than a third were slaves.[101] While slavery could in theory aid the CSA war effort by providing unskilled labor for construction, agricultural, and general work details, it also drained potential martial strength due

[98] Dougherty, *Leadership Lessons*, 16–17.

[99] Ibid., 119; Grant, *Memoirs*, 40.

[100] Murray and Hsieh, *A Savage War*, 40–44.

[101] Stoker, *The Grand Design*, 22–23.

to the need to simultaneously guard from internal insurrection and field an army.[102] In fact, the very idea of armed blacks not only struck fear in southern society, but was the key reason for secession.[103] Suffice it to say, the CSA rarely employed slaves for any sort of armed military duties.

By contrast, the Union boasted more than double the population – over twenty-two million people, with relatively few slaves in the border states of Missouri, Kentucky, Delaware, and Maryland.[104] Still, both combatants lived in an industrialized world with textile mills, iron foundries, steam powered transportation, and modern telegraph communications.[105] In fact, in 1861, the CSA possessed over nine thousand miles of railroad track meaning that if it was considered its own country, it would have only been behind the Union and Great Britain respectively in total mileage.[106] Historian Chris Gabel points out that while it is true that the Union had more than twice the iron mileage (approximately twenty thousand miles), the majority of the war took place in the South.[107] Thus, Union mileage enabled the movement of troops and supplies closer to the theater of operations, but it had limited inherent application for operational maneuver once in the South. It took a concerted effort at the strategic and operational levels to realize the effects of railroad maneuver.

While material capacity is vitally important, it must be mobilized and transformed for a wartime economy before it can be harnessed to support field armies. With a small and relatively weak central government, the Union took time to grow in size, scale, and administrative capacity

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[102] I adapt this concept from Thucydides, *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War*, ed. Robert B. Strassler, trans. Richard Crawley (New York, NY: Simon & Schuster, 2008).

[103] Charles B. Dew, *Apostles of Disunion: Southern Secession Commissioners and the Causes of the Civil War* (Charlottesville, VA: University Press of Virginia, 2002), 66-67; Murray and Hsieh, *A Savage War*, 33.

[104] Stoker, *The Grand Design*, 22–23.

[105] Jones, *Civil War Command and Strategy*, 3–10.

[106] Christopher R. Gabel, *Rails to Oblivion: The Decline of Confederate Railroads in the Civil War* (Fort Leavenworth, KS: Combat Studies Institute, 2002), 2.

[107] Gabel, *Railroad Generalship*, 22.

for a war footing.[108] Thus, the Federal administration and logistics departments and bureaus continued to develop complexity and depth, which enhanced Grant's force projection and increased his operational reach during the eighteen months of his western campaigns.

Ulysses S. Grant

Before assuming command of the entire Union Army, U.S. Grant rose from relative obscurity to command the Army of the Tennessee. Throughout his western campaigns, he secured key terrain in the area of operations by using a series of deliberate maneuvers effectively cutting the Confederacy in two. In this theater, the Mississippi River stood as the ultimate decisive point, and the true objective of any western military campaign. Indeed, both the CSA and the Union sought to control this dominant line of communication for both military and commercial use. Various railroad junctions provided secondary and enabling objectives. Despite numerous peripheral victories that secured land transportation, ultimately, only the seizure of Vicksburg and the subsequent strong point, Port Hudson, seized in July 1863, could open the entire length of the Mississippi River to Union military and commercial traffic.

Grant was not the only leader to recognize the importance of the Mississippi River and the western ground lines of communication. Nor were his Western campaigns the first attempt to open the river. Previous attempts to seize Vicksburg by joint naval bombardment and a brigade assault had failed.[109] Admiral David Farragut and Brigadier William Thomas attempted to subdue the city in late June 1862, but the token effort met strong resistance from rebel defenders and ultimately only resulted in minor damage for both forces.[110] However, Grant grasped the inherent tension between the desire for bold maneuver and the need to set conditions in the form of strong

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[108] Murray and Hsieh, *A Savage War*, 5.

[109] D. G. Farragut to C. H. Davis, June 28, 1862, *O.R.N.,* ser. 1, vol. 23, 231–32; Terrence J. Winschel, *Triumph & Defeat: The Vicksburg Campaign* (New York, NY: Savas Beati, 2004), 4. After his first failed naval assault from May to July 1862, Flag Officer Farragut described the need for joint operations with land forces to deny Confederates the ability to hold Vicksburg.

[110] Earl S. Miers, *The Web of Victory: Grant at Vicksburg* (Baton Rouge, LA: Louisiana State University Press, 1984), 31–34.

enabling logistics. More than just amassing supplies, logistics served as the canvas upon which Grant painted his operational masterpiece in the west (1862-1863). He leveraged all available means to maneuver his forces to neutralize, defeat, or destroy the enemy, ultimately leading to the seizure of Vicksburg and the eventual opening of the Mississippi River.

Throughout Grant's western campaigns, his army drew direct support from an immensely capable regional quartermaster, Major Robert Allen, headquartered in St. Louis. Allen integrally and efficiently met the needs of the western field army. By maintaining depots with direct riverine and rail access along the Mississippi River in St. Louis and Memphis, Allen leveraged steam power to balance efficiency with economy. Allen and his deputies tirelessly worked to ensure quality supplies reached the front, while vigilantly scrutinizing quality and monitoring for corruption.[111] As such, Grant harnessed and focused M.C. Meigs's national supply and distribution network to maneuver and achieve operational combat objectives.[112]

By examining Grant's *Memoirs,* his personal papers, and the *Official Record*, it becomes clear that Grant was a master organizer and did not relegate operational logistics to subordinates, but instead held a deep and personal understanding of the value of preparation and maintenance of his army. In his correspondence to subordinate commanders, field orders, and reports to higher headquarters, Grant consistently referenced supply statuses, stockage objectives, and the importance of maintaining positive lines of communication with intermediate supply bases to support his tactical objectives. In this author's review of primary sources, Grant addressed supply operations, basing, security for lines of communication, and the need to control operational tempo relative to logistical feasibility in a third of correspondence.[113]

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[111] Lenette S. Taylor, *The Supply for Tomorrow Must Not Fail: The Civil War of Captain Simon Perkins, Jr., a Union Quartermaster* (Kent, OH: Kent State University Press, 2004), 15, 46.

[112] Russell F. Weigley, *Quartermaster General of the Union Army: A Biography of M.C. Meigs* (New York, NY: Columbia University Press, 1959).

[113] *O.R.*, ser. 1, vols. 2, 10, 11, 15, 17, 23, 24, 25; Grant, *Memoirs*, vol. 1; *Papers of U.S.G,* vols. 5, 7, 8.

Grant consistently targeted vital railway, riverine, and roadway lines of communication that attritted Confederate sustainment and limited their operational reach. After securing these lines of communication, Grant integrated them into the ever-expanding multi-modal distribution network that supported virtually uninterrupted supply and movement to his army. When his preferred logistics distribution methods did not support his desired scheme of maneuver, he accepted and managed risk by breaking free from his riverine and rail lines of communication.[114] In so doing, Grant relied on slow moving wagon resupply over extended distances, despite being deep within enemy territory.[115] Additionally, Grant acted as an adaptive leader who balanced risk and opportunity. He saw utility in forage and seized as many enemy rations and supplies as possible. His willingness to break from conventional resupply in order to preserve forward combat power highlights Grant's flexibility and distinguishes him from other contemporary commanders, both Union and Confederate.

In combination with prevailing supply methods, Grant's willingness to accept risk to mission by "living off the land" extended his operational reach during a critical point of the campaign. This risk tolerance and understanding of operational reach allowed him to force his enemy to logistically culminate by denying Confederate forces resupply, thereby limiting their effectiveness in the field. Despite suffering an effective cavalry raid on his supply base at Holly Springs, Mississippi, in December of 1862 at the hands of Confederate Major General Earl Van Dorn, he learned a valuable lesson in security requirements for support bases.[116] Grant would not make the same mistake again. Despite the resilience of the Union logistics and transportation system, he lost communication with his higher headquarters and the ability to resupply his army via the rail network due to a simultaneous raid by Confederate Nathaniel Forrest. It took over two

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[114] Grant to Halleck, May 3, 1863, Badeau, *Military History of Ulysses S. Grant*, 649–51.

[115] Ibid.; Grant, *Memoirs*, 187.

[116] Warren Grabau, *Ninety-Eight Days: A Geographer's View of the Vicksburg Campaign* (Knoxville, TN: University of Tennessee Press, 2000), 6–12; Grant to J. C. Kelton, December 25, 1862, *O.R.*, ser. 1, vol. 17, pt. 1 477–78; E. Van Dorn to J. E. Johnston, December 20, 1862, Ibid. 503.

weeks to recover.[117] During this time, Grant had to forage for subsistence requirements and reduce rations.

Grant leveraged joint enablers through his communications with Admirals Andrew Foote and David Porter to secure the riverine transportation network, and utilized strategic distribution assets to continually move and maneuver his force using amphibious routes.[118] The Union industrial capacity provided locomotives and steamers, military materiel solutions, and subsistence rations which underwrote victory in his western campaigns.[119]

Grant's Western Campaigns Analysis

This section will examine actions beginning in early 1862 with the capture of Forts Henry and Donelson through the fall of Vicksburg in July 1863. Notwithstanding the importance of Grant's earliest victories, this monograph primarily refers to approximately eighteen months of sequentially arranged tactical actions as Grant's western campaigns. The cumulative effects of the fourteen major tactical engagements, when viewed as a larger comprehensive campaign, operationally led to securing two strategic objectives – splitting the CSA in half, thus denying vital resupply from Texas, and opening the Mississippi River to Union military and commercial traffic after the fall of Port Hudson.[120]

Having previously bloodied his unit in the seizure of Paducah, Kentucky, in order to secure riverine access, Grant, in coordination with Flag Officer Foote, moved upon Fort Henry on February 6, 1862. Foote and his riverine squadron transported twenty-three regiments while Grant moved to Fort Henry by land. After sustaining Foote's amphibious bombardment for approximately two hours, the anti-climactic battle ended when the garrison surrendered, and

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[117] James R. Arnold, *Grant Wins the War: Decision at Vicksburg* (New York, NY: John Wiley & Sons, Inc., 1997), 31.

[118] H. Walke to Foote, February 8, 1862, *O.R.N.*, ser. 1, vol. 22, 575; Walke to Foote, February 10, 1862, Ibid., 583; Walke to Foote, February 10, 1862, Ibid., 587–88; Grant to Walke, February 13, 1862, Ibid., 594.

[119] Huston, *The Sinews of War*, chap. 11.

[120] Winschel, *Vicksburg*, 15–16.

Grant took possession of the fort.[121] With the fall of Fort Henry, "the Tennessee River was open to Union naval movement all the way to Muscle Shoals in northeastern Alabama," opening up a 150-mile corridor into the heart of the Confederacy.[122]

Characteristically aggressive, Grant pressed his success and resumed the offensive against the next vital point in the war of the waterways. Showing marked foresight, Grant asked that Admiral Foote destroy a vital railroad bridge along the Memphis and Charleston Railroad.[123] By destroying this rail link, Grant denied rebel forces the ability to surge troops via their interior lines of communication and reinforce Fort Donelson. Concurrently, he maneuvered a force twelve miles east to invest Fort Donelson from the landward side, while Foote provided operational transport for about ten thousand troops and joint fire support from the Cumberland River. Beginning on February 12, Grant's three divisions probed and surrounded the fort, while rebel leaders defended and exchanged effective fire with the Union gunboats. Despite Confederate efforts to escape the besieged fortress, Grant directed a vigorous counterattack and had tightened the noose by the end of the second day. After proposing to appoint commissioners for surrender, the Confederate commander, Simon Buckner, received a cold rebuff from his pre-war friend. Earning him the reputation as a hardline combat leader, Grant replied "No terms except unconditional surrender can be accepted. I proposed to move immediately upon your works."[124] With both decisive points secured, the Cumberland River was now available for Union maneuver and support.

The key location of Fort Donelson meant that Clarksville and Nashville both proved untenable, forcing the evacuation of rebel forces. Union steamers could easily supply land forces

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[121] Murray and Hsieh, *A Savage War*, 139.

[122] Ibid.

[123] Walke to Foote, February 8, 1862, *O.R.N.*, ser. 1, vol. 22, 575; Murray and Hsieh, *A Savage War*, 141.

[124] Grant to S. B. Buckner, February 16, 1862, *O.R.N.*, ser. 1, vol., 22, 596–97; Grant, *Memoirs*, 116.

from the river or deploy troops much closer to the front, while simultaneously depriving the Confederates of over sixteen thousand troops, and the vital supply rich environment of west Tennessee.[125]

In response to these victories, Major General Halleck took command of all Union forces in the west and took time to consolidate gains, both militarily and politically. After taking much of the credit for Grant's victories, Halleck detailed most of Grant's troops to secure various key points in the theater and provide route security for the extending lines of communication. Due to faulty communications, personal ambitions, and rebel espionage, Halleck actually relieved Grant of command until cleared by an inquiry. Even after Halleck dropped the issue and Grant returned to command, his force remained too dispersed to reassume the offensive.[126]

Throughout March 1862, Grant slowly consolidated his forces along the western bank of the Tennessee River at Pittsburgh Landing. Concurrently, the Confederates stripped coastal forces from New Orleans and other commands and concentrated approximately forty thousand men near Corinth by using the railroads.[127] These forces, commanded by Sidney Johnston and P.G.T. Beauregard, aimed to regain lost territory and drive Grant into the river before he could consolidate with Buell's forces from Nashville.[128] While anticipating the link up with Buell, Grant sought to use the open ground and riverine access to train his troops and refit with supplies sent from his regional quartermaster, Robert Allen in St. Louis.

April 6-7, 1862 proved pivotal for the future of the campaign. Johnston attacked from the vitally important railroad junction at Corinth, having marched twenty miles in a single movement. The Battle of Shiloh began with the rebel forces successfully driving the Union Army back towards the river, seemingly in disarray, after largely catching Grant's thirty-three thousand

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[125] Murray and Hsieh, *A Savage War*, 146.

[126] Grant, *Memoirs*, 121–23.

[127] Grant to Halleck, March 21, 1862, *O.R.*, ser. 1, vol. 10, pt. 2, 55–56.

[128] Grant, *Memoirs*, 125.

troops by surprise.[129] However, the adversity of combat proved a crucible for Grant and his subordinates. Leveraging the power of joint fires, the *USS Lexington* and *USS Tyler* provided tremendous firepower and blunted the Southern offensive, continuing the barrage throughout the night.[130]

Late in the day and during the night of April 6, both Grant's forces and recently arrived elements from Buell's Army of the Ohio redeployed and reinforced the Union positions. Convinced they had already won a great victory, the next morning's Federal counterattack found the rebels unprepared.[131] By early afternoon, Grant had regained the initiative, forced a Confederate withdrawal, and mounted a pursuit, albeit lacking substantial vigor.[132] While decidedly a Union victory, the great casualties, over twenty-four thousand total, appalled the sensibilities of both sides and marked the starting point of Grant's adoption of an attritional strategy of annihilation.[133]

Grant took responsibility for the lack of security around his lodgment at Pittsburgh Landing, which resulted in the initial Confederate success. This, along with bad press and political calls for his removal, not to mention Halleck's personal ambitions, resulted in Halleck taking command in the field of the consolidated army. Halleck named Grant deputy commander, but assigned him no duties or troops to command. Despondent, Grant petitioned for relief and would have likely retired from service had Sherman not intervened and entreated him to stay.[134]

Upon assumption of field command, Halleck warily pursued Beauregard's forces to seize Corinth. Forming what Jefferson Davis called the "vertebrate of the confederacy," Corinth was

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[129] Michael B. Ballard, *Vicksburg: The Campaign That Opened the Mississippi* (Chapel Hill, NC: University of North Carolina Press, 2004), 27–28.

[130] W. Gwin to Foote, April 8, 1862, *O.R.N.*, ser. 1, vol., 22, 763–64; J. W. Shirk to Foote, April 8, 1862, Ibid., 764–65; Grant to N. H. McLean, April 9, 1862, Ibid., 765–66.

[131] Murray and Hsieh, *A Savage War*, 156.

[132] Grant to Halleck, April 8, 1862, *Papers of U.S.G.*, 5:22. Grant reported to Halleck about a small cavalry pursuit in which they captured some Confederate supply wagons.

[133] Grant, *Memoirs*, 138.

[134] Grant to J. D. Grant, May 11, 1862, *Papers of U.S.G.*, 5:115–16; Grant, *Memoirs*, 141.

strategically important as it held the juncture for the north-south Mobile & Ohio Railroad and the east-west Memphis & Charleston Railroad.[135] The overly cautious engineer inched towards the rebels at a virtual snail's pace – mandating extensive field entrenchments constructed and occupied each night, only to abandon them the next day. On May 30, 1862, Union forces finally occupied the town but Confederate forces had used the railroad to launch their escape.[136] Despite missing a chance to defeat Beauregard, this critical logistics hub added to Union distribution capability.

In the aftermath of the failed 1862 Peninsula Campaign in Virginia, President Lincoln looked to Halleck to energize the eastern theater after he had taken credit for western victories.[137] However, prior to leaving for Washington, Halleck dispersed his massive one hundred twenty thousand-man force, sending Buell to campaign in Tennessee, Sherman's corps to Memphis, reinforcing positions in Arkansas, and leaving Rosecrans to secure and garrison Corinth. Upon his departure, Grant became the theater commander with a reduced force numbering around fifty thousand troops.[138] Concurrently, Major General John McClernand, a pro-war Democratic congressman from Illinois, received secret permission from President Lincoln to raise an independent field army to seize Vicksburg and open the Mississippi River.[139]

Although Halleck's personal ego contributed to his distaste for Grant, as a professional soldier, Halleck despised McClernand and considered him little more than a politician playing war. Once appraised of the situation, Halleck ordered the newly raised regiments assigned to Grant's command instead. Suffice it to say, McClernand objected to the situation and appealed to

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[135] Archer Jones, *Confederate Strategy from Shiloh to Vicksburg* (Baton Rouge, LA: Louisiana State University Press, 1961), 52–57.

[136] Grant, *Memoirs*, 142–44; Jones, *Confederate Strategy*, 54.

[137] E. M. Stanton to Halleck, July 11, 1862, *O.R.*, ser.1, vol. 11, pt. 3, 314. Halleck to A. Lincoln, July 11, 1862, Ibid., 314–15.

[138] Grant to A. P. Hovey, July 11, 1862, *Papers of U.S.G.*, 5:206; General Orders No. 62, July 17, 1862, Ibid., 210–11.

[139] Grant to McClernand, January 31, 1863, *Papers of U.S.G.,* 7:264–68. Lincoln supported McClernand's initiative, even against the advice of his General-in-Chief.

Washington. However, by the time Stanton intervened, Halleck's maneuvering amounted to a *fait-accompli*. To wit, he denied McClernand a large enough force to take Vicksburg, and his independent command achieved little more than taking a few minor positions in Arkansas before returning to the Army of the Tennessee as Grant's subordinate.[140]

For his part, Grant mostly deferred to Halleck's lead on the matter and spent the fall concentrating forces, establishing basing, and otherwise setting conditions for a concerted campaign to take Vicksburg. Despite previous correspondence from Halleck explicitly authorizing the relief of McClernand, Grant retained him as a corps commander to avoid stirring the political hornet's nest.[141] Thus, Grant curtly answered McClernand's complaints about the command relationship by stating that he would personally take command in the field, referencing his orders from Halleck. Still, he hedged his bets by emphasizing his willingness to submit to whatever arrangement President Lincoln established.[142] Grant understood that if given time, McClernand could still cause trouble. As such, Grant hastened his preparations for the campaign and changed his operational tempo, ultimately sacrificing deliberate security for speed.

By early November 1862, Grant had received reinforcements and concentrated his forces around Grand Junction, Tennessee. After personally requesting steamer support from his theater quartermaster in St. Louis, Grant designed a two-pronged attack against Vicksburg from the north.[143] Sherman's corps, numbering around thirty-two thousand, used steamers for operational maneuver down the Yazoo River, naval gunboats for escort security, and joint fires to land troops

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[140] Grant to Halleck, January 11, 1863, Ibid., 7:209–10. Grant considered the expedition into Arkansas a waste of time and resources. On January 11, 1863, in correspondence to Halleck, Grant called it a "wild goose chase." That same day, he admonished McClernand to "keep your command where it can soonest be assembled for the renewal of the attack on Vicksburg."

[141] Halleck to Grant, January 12, 1863, *O.R.*, ser.1, vol. 17, pt. 2, 555. "You are hereby authorized to relieve General McClernand from command of the expedition against Vicksburg, giving it to the next in rank or taking it yourself."

[142] Grant to McClernand, January 31, 1863, Badeau, *Military History of Ulysses S. Grant*, 1:613; Grant to Kelton, February 1, 1863, *Papers of U.S.G.*, 7:274.

[143] R. Allen to Halleck, January 12, 1863, *O.R.*, ser. 1, vol. 17, pt. 2, 556. Robert Allen indicated that Grant requested to move at least 16,000 men using steamers for the reduction of Vicksburg. Ultimately, Sherman's Corps increased to 32,000 soldiers.

just north of the city at Chickasaw Bayou. After landing, he would cut railroad links and begin siege operations.[144] Simultaneously, Grant would march south, generally following the Mississippi Central Railroad, and establish a forward supply base at Holly Springs. His army of forty thousand troops would force the rebel units to either retreat to Vicksburg or fight Grant's numerically superior army all while waiting on McClernand's return from Memphis to reinforce and secure lines of communication.[145] Based on his line of advance, Grant's forces required nearly ten million rounds of smalls arms ammunition and nearly four hundred thousand rations for the march, assuming two hundred rounds per man and eight days of rations.[146]

Grant understood that due to the geographically dispersed nature of the operations, once the campaign started, assured communications between the two forces would prove difficult. However, due to his personal friendship and confidence in Sherman, Grant initiated movement without a telegraph link for direct communications.[147] His anxiety about the politically important McClernand is telling.[148] In attempting to seize Vicksburg without McClernand interfering, Grant hastily accepted risk to mission by failing to leave deliberate security for his logistics base at Holly Springs. He incorrectly reasoned that by "moving against the enemy and into his unsubdued, or not yet captured, territory, driving their army before us, these lines would nearly hold themselves; thus affording a large force for field operations."[149]

With extending lines of communication and a weakly guarded target, on December 20, 1862, Van Dorn's rebel cavalry attacked the Holly Springs depot, seized supply stocks, and

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[144] Michael B. Ballard and George F. Skoch, *The Campaign for Vicksburg* (Conshohocken, PA: Eastern National Park and Monument Association, 1996), 14–16.

[145] Michael B. Ballard, *U.S. Grant: The Making of a General, 1861-1863* (Lanham, MD: Rowman & Littlefield, 2005), 81–93; William T. Sherman, *Memoirs of General William T. Sherman*, vol. 1 (n.p.: Public Domain Book, n.d.), 191–200, Kindle.

[146] General Orders No. 94, November 23, 1862, *O.R.*, ser. 1, vol. 17, pt. 2, 358–59.

[147] Grant to W.T. Sherman, December 14, 1862, *Papers of U.S.G.*, 7:33–36.

[148] Grant to Halleck, December 14, 1862, *Papers of U.S.G.*, 7:29. Grant described McClernand as "unmanageable and incompetent."

[149] Grant, *Memoirs*, 159.

captured a large force of support personnel.[150] Concurrently, Nathaniel Forrest's cavalry destroyed telegraph and railroad communications along a wide swath of western Tennessee and southern Kentucky. The interrupted supply line caused Grant to logistically culminate, forcing him to direct his command to forage for subsistence. In his memoirs, he recounted:

> I was amazed at the quantity of supplies the country afforded. It showed that we could have subsisted off the country for two months instead of two weeks… This taught me a lesson which was taken advantage of later in the campaign when our army lived twenty days with the issue of only five days' rations by the commissary.[151]

Moreover, it forced him to abandon his march south in order to reestablish a line of supply and communication with Halleck. Ultimately, Forrest's raid forced Grant to change his primary line of supply from the railroads to the river system, leading him to move his intermediate base to Memphis, which proved easy to support from the St. Louis regional depot.[152]

Although Grant dispatched word to Sherman that he would be unable to contribute to his attack, Sherman attacked on his own. Although alone in the assault, Sherman's men maintained ample supplies and transport. According to Mark Hurley, "Sixty-two steamboats were used for the operation, with each division receiving at least one boat to carry its commissary, ordnance and quartermaster stores."[153] His force also carried a full complement of munitions of over six million rounds and more than four hundred fifty thousand rations.[154] After landing in Chickasaw Bayou, Union forces launched their assault on December 28, 1862. Despite Sherman's superior numbers, the terrain favored Martin Smith's defenders, who had well emplaced artillery support. Undaunted by his initial losses, Sherman reattacked the bluffs twice more, but the rebels held

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[150] Van Dorn to J. C. Pemberton, December 20, 1862, *O.R.*, ser. 1, vol. 17, pt. 1, 503; Grant to Halleck, December 21, 1862, Grant, *Papers of U.S.G.*, 7:83.

[151] Grant, *Memoirs*, 164; Grant to C. C. Marsh, December 21, 1862, *Papers of U.S.G.*, 7:86. Grant directed subordinates to live off the land. "You will have to supply your troops from the country."

[152] Grant to Kelton, December 25, 1862, *O.R.*, ser. 1, vol. 17, pt. 1, 477–78. Grant noted that the railroad was not secure enough for his primary supply line. This acknowledgement led to his use of the riverine system for his next attempt.

[153] Hurley, "Union Logistics," 34.

[154] Sherman to L. Thomas, December 16, 1862, *O.R.*, ser. 1, vol. 17, pt. 1, 602–3.

their ground.[155] On December 29, Sherman admitted defeat, reembarked his transports, and steamed up the river to reconsolidate and reorganize at Memphis.[156]

Despite the failure of his hastily planned initial attempt, Grant began 1863 with strong basing that helped him set conditions for a renewed campaign. Control of Corinth, Grand Junction, and Memphis, eventually coupled with his growing base camp at Milliken's Bend, allowed him to leverage multi-modal resupply and offered operational maneuver options via both water and rail. Although prone to flooding, Milliken's Bend provided essential riverine access to resupply his army for his next campaign. Throughout the winter and spring of 1863, Grant used both Milliken's Bend and Young's Point, Louisiana, as logistics hubs, posturing supplies, raising and training newly formed black regiments, and improving the distribution network by building and repairing roads.[157] Eventually, Milliken's Bend resembled a military city and became a multimodal distribution center, a maintenance depot, and included a semi-permanent garrison.[158] In modern parlance, Milliken's Bend probably resembled a theater distribution logistics support area. Both these locations supported resupply from steamers and transloaded wagons for forward movement. After Grant successfully crossed the Mississippi River below Vicksburg, wagon trains meandered south toward New Carthage, Louisiana, and Hard Times Landing. In early May 1863, Sherman procured 120 wagons from Milliken's Bend to transport rations and supplies to augment unit-level forage.[159]

Seeking to avoid Shiloh-level casualties, Grant searched for opportunities to bypass the batteries of Vicksburg by using tributary rivers and streams. Although never particularly optimistic, from his new headquarters at Young's Point, Grant supported a series of engineering

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[155] Sherman, *Sherman's Memoirs*, vol. 1, chap. 17.

[156] Ballard and Skoch, *The Campaign for Vicksburg*, 17.

[157] Shea and Winschel, *Vicksburg Is the Key*, 89–92.

[158] Hurley, "Union Logistics," 21.

[159] Ballard, *Vicksburg*, 248–49.

operations to build canals and bypass Vicksburg.[160] During this time, Grant got a reminder from Halleck of the finite nature of transportation assets. In March 1863, Halleck admonished Grant on the importance of releasing steamboats back to the Quartermaster Department as soon as possible to maintain the uninterrupted flow of supplies.[161] Meanwhile, work continued on the various expeditions until early April, but all efforts ultimately failed due to falling water levels or other ecological problems. Although unsuccessful in achieving the stated aim, Grant proved willing to try new ideas, and again changed his operational tempo, which kept his forces offensively oriented and Pemberton confused.[162] Had the canals succeeded, they would have offered additional options for riverine maneuver, including additional landing points for logistics support.

In the spring, Grant devised a new plan to use an overland approach to bypass Vicksburg by way of the western bank of the Mississippi River. With McClernand's corps leading, the Union forces began their unopposed march on March 31, 1863, and staged for steamer transport under Porter's naval escort. Concurrent with the march, the Mississippi River Squadron headed downstream. On the night of April 16-17, Porter's eleven-vessel squadron repositioned south by running the Vicksburg batteries. Although they received effective fire from the Confederate batteries, the strength of the river current committed Grant to the effort. Thus, Grant relied on Union materiel strength to replace the loss of the three vessels.[163] Just twelve days later, Grant and Porter linked up. In preparation for the movement south of Vicksburg, Grant published Special Order Number 110. This order resembled to a modern logistics annex as it directed supply stockage levels, priorities, and dictated the means and modes of transportation. The order subordinated units to the direction of logistics officers for the deployment downstream: "All the

[160] Gabel, *Staff Ride Handbook*, 75–76; Grant, *Memoirs*, 168.

[161] Halleck to Grant, March 5, 1863, Badeau, *Military History of Ulysses S. Grant*, 1:632–33.

[162] Ballard and Skoch, *The Campaign for Vicksburg*, 18–20.

[163] D. D. Porter to Welles, April 17, 1863, *O.R.N.*, ser. 1, vol. 24, 552–67. The squadron consisted of eight gunboats and three transports. These vessels previously supported operations north of Vicksburg. Additional barges transported troops and supplies.

teams of the three army corps, under the immediate charge of the quartermasters bearing them on their returns, will constitute a train for carrying supplies and ordnance, and the authorized camp equipage of the army."[164] Moreover, Grant specifically tasked units with security for lines of communication: "Two regiments from each army corps will be detailed by corps commanders, to guard the lines from Richmond to New Carthage."[165] Additionally, it synchronized movement with sustainment, inclusive of medical support and personnel services, by dictating hospital establishment and standards for personnel replacements.[166] Embarking near New Carthage, Grant designed a short trip with a landing at Grand Gulf, Mississippi. However, after a five-hour naval bombardment, Grant called off the attack and headed farther south to Bruinsburg Landing. Without confirming intelligence reported by a run-away slave, Grant scored a lucky break and landed without opposition. By the end of the day on April 30, 1863, Grant secured a foothold with over twenty-two thousand troops south of the great citadel.[167] Even when basking in the glory of his operational maneuver, in his memoirs, he recalled the importance of accounting for his logistics structure, which had a profound effect on his operational reach.

> When this [crossing the Mississippi River at Bruinsburg Landing] was effected [sic] I felt a degree of relief scarcely ever equaled since. Vicksburg was not yet taken it is true, nor were its defenders demoralized by any of our previous moves. I was now in the enemy's country, with a vast river and the stronghold of Vicksburg between me and my base of supplies. But I was on dry ground on the same side of the river with the enemy. All the campaigns, labors, hardships and exposures from the month of December previous to this time that had been made and endured, were for the accomplishment of this one object.[168]

For the next three days, McPherson and McClernand's corps battled for control of the area in order to secure and expand the lodgment. Clearing Port Gibson on May 1 made the batteries at Grand Gulf susceptible to capture and untenable. Confederates abandoned their

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[164] Special Orders No. 110, April 20, 1863, Badeau, *Military History of Ulysses S. Grant*, 1:618–20.

[165] Ibid.

[166] Ibid.

[167] Gabel, *Staff Ride Handbook*, 77; Grant, *Memoirs*, 182.

[168] Grant, *Memoirs*, 182.

positions on May 3 and retreated back towards Vicksburg.[169] The seizure of Grand Gulf enabled Grant to establish another forward supply base, permitting Sherman's corps to join the maneuver force.[170] At this point, Grant decided it was better to reduce his supply consumption than to dedicate the necessary forces for supply line security.

Due to the attack on his supply base at Holly Springs the previous year, Grant learned that local subsistence and animal fodder could largely sustain his army. Not wanting to slow his operational tempo and await reinforcements, Grant opted to move northeast towards Jackson to cut Pemberton's final railroad communication junction.[171] By prioritizing momentum, one of the sub-elements of operational reach, he realized that he had insufficient relative combat power to protect his line of supply, but if he waited, the Confederates would likely reinforce. Therefore, he accepted risk in terms of operational endurance. In so doing, he had to maintain rapid maneuver and a high operational tempo. He famously reflected on the decision in his memoirs: "I therefore determined to move independently of Banks, cut loose from my base, destroy the rebel force in rear of Vicksburg and invest or capture the city."[172]

As such, Grant issued instructions for supply stocks and directed units to requisition and forage from the local population. His preference was to pay for forage, however, he acknowledged the need for latitude during extenuating circumstances.[173] Moreover, logistics concerns dominated his correspondence to subordinates. While satisfied with subsistence availability, ammunition transportation represented a paramount concern to Grant and his subordinates.[174] Previously set conditions enabled this bold improvisation. Nonetheless, Grant

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[169] Jones, Hattaway, and Vanderlinde, *How the North Won*, 376–77.

[170] Grant to Sherman, May 3, 1863, *O.R.*, ser 1., vol. 24, pt. 3, 268–69; Hurley, "Union Logistics," 74–85.

[171] N. P. Banks to Grant, May 12, 1863, Ibid., 298–99; Grant, *Memoirs*, 187. Correspondence from Banks indicated that he would not be able to cooperate with Grant until May 25 at the earliest.

[172] Grant, *Memoirs*, 187.

[173]Grant to J. C. Sullivan, December 26, 1862, *O.R.*, ser. 1, vol. 17, pt. 2, 489.

[174] Grant to McClernand, May 7, 1863, *O.R.*, ser. 1, vol. 24, pt. 3, 268–84.

accepted risk by relying on a substandard road-based distribution network.[175] Thus, he cut loose of his major line of supply, the Mississippi River, and prevented Pemberton from being able to substantially threaten his line of communication.[176] Nonetheless, he maintained an ad hoc wagon train to keep his units supplied with commodities that could not be foraged.[177] For example, Grant's Chief Commissary officer, Lieutenant Colonel R. Macfeely, sent a wagon train with over "300,000 rations of hard bread, coffee, sugar, and salt, 225,000 rations of salt meat, and 130,000 of soap" from Milliken's Bend and Young's Point.[178] Concurrently, Grant directed Grierson's cavalry to raid Confederate rail lines to deny the rebels a means of resupply and further isolate their garrisons. Living off the land with only five days of rations, the cavalry troopers destroyed rail lines, bridges, supply depots, and plantations to materially attrite the rebel forces.[179] This raid created multiple dilemmas for Pemberton and induced cognitive dissonance, adding to the cumulative effects of Grant's sustained tempo.

The next two and half weeks proved a virtual whirlwind of activity as the endgame for Vicksburg commenced. Seeing that Pemberton was not up to the task of confronting Grant, Confederate President Jefferson Davis dispatched Lieutenant General Joseph Johnston with reinforcements to take personal command in the field.[180] Nearly simultaneously, Davis directed Pemberton to hold Port Hudson and Vicksburg at all costs, and he apparently took his orders literally.[181] Pemberton rejected Johnston's plan for a forward defense in depth, and instead

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[175] Badeau, *Military History of Ulysses S. Grant*, 187–88. Although outside the scope of this work, Grant directed continuous maintenance, improvement, and construction of roads and bridges, enabling the logistics train to support his maneuver."

[176] Groom, *Vicksburg, 1863*, 314.

[177] Grant, *Memoirs*, 187.

[178] R. Macfeely to Grant, May 8, 1863, *O.R.*, ser. 1, vol. 24, pt. 3, 281–82.

[179] Groom, *Vicksburg, 1863*, 281–85.

[180] J. A. Seddon to Johnston, May 9, 1863, *O.R.*, ser. 1, vol. 23, pt. 2, 825–26; Steven E. Woodworth and Charles D. Grear, eds., *The Vicksburg Campaign: March 29-May 18, 1863* (Carbondale, IL: Southern Illinois University Press, 2013), 120.

[181] Grabau, *Ninety-Eight Days: A Geographer's View of the Vicksburg Campaign*, 208.

concentrated his forces in Vicksburg and along the Big Black River.[182] Grant maintained a rapid tempo enabled by his basing and support infrastructure. In moving through central Mississippi, his forces continually turned Confederates out of positions, forcing Pemberton to direct their retreat towards Vicksburg.

Upon learning of Johnston's movement toward Jackson, Grant decided to prevent a rebel consolidation and moved northeast in Napoleonic fashion and achieved the coveted central position. As the Union army moved through the countryside, they brushed aside squirmishers and cavalry detachments until they battled at Raymond on May 12, 1863, with Brigadier General John Gregg.[183] After forcing Gregg's withdrawal, Grant directed McClernand's corps north to protect his left flank, while the main body continued towards Jackson. In addition to the crucial railroad lifeline, Jackson was an industrial and communications center for the CSA. Liberating the capital neutralized the telegraph lines and further isolated Vicksburg, as well as disrupting communications south to the coastal regions far more effectively than by merely cutting lines. Finally, Jackson housed part of the industrial base which supplied the rebel war effort, including textile production, granaries, foundries, and an arsenal. The attritional nature of Grant's campaign meant that by taking Jackson, he extended his own operational reach by seizing supplies and securing the railroad to establish a more efficient line of supply.[184] Simultaneously, he pushed Pemberton towards culmination in Vicksburg, degrading the Confederacy's ability to sustain the war.[185]

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[182] Pemberton to Johnston and J. Davis, May 12, 1863, *O.R.*, ser. 1, vol. 24, pt. 3, 859; Joseph E. Johnston and John C. Pemberton, *Report of General Joseph E. Johnston, Of His Operations in the Departments of Mississippi and Louisiana, Together with Lieut. General Pemberton's Report of the Battles of Port Gibson, Baker's Creek, and The Siege of Vicksburg* (Richmond, VA: R.M. Smith, Public Printer, 1864), 6.

[183] Gabel, *Staff Ride Handbook*, 78.

[184] Sherman, *Sherman's Memoirs*, 1:223–24. Sherman recalled that after the Battle of Jackson, Grant directed the seizure of usable supplies and the destruction of military arsenals, including a cotton factory which produced uniforms and blankets for the CSA.

[185] Grabau, *Ninety-Eight Days: A Geographer's View of the Vicksburg Campaign*, 240.

As Grant closed on Jackson, Johnston arrived with reinforcements. Although he expected additional forces within the next two days, after studying the disposition of Union forces, he quickly set his mind to preserving his forces rather than accepting risk to engage Grant. He telegraphed Richmond stating he was too late to influence the outcome.[186] Afterwards, he promptly ordered the evacuation of the city and no longer played a substantial role in the campaign.[187] After defeating Gregg's vigorous rear-guard action, Grant occupied Jackson and the Stars and Stripes flew over the state capital on May 14, 1863.

With Johnston neutralized, Grant turned west to focus on Pemberton. Two days later, moving west along the Vicksburg & Jackson Railroad, approximately thirty-two thousand Union troops caught twenty-three thousand rebel forces by surprise in a bloody battle at Champion Hill.[188] After driving the Confederates back to the Big Black River, all three Union corps forced separate crossings on May 17.[189] The rebel forces occupied defensive works around Vicksburg and awaited the Union offensive. Grant continued his attack with frontal assaults to break through on May 19 and 22, with no avail.[190] The campaign of movement ground to a halt, and Grant commenced siege operations, which lasted until July 4, 1863, when Pemberton capitulated.[191] With Admiral Porter effectively blockading riverine access, Union forces completed the isolation of Vicksburg by severing any remaining road and rail approaches, forcing the city to rely on the rations and munitions previously stockpiled, while awaiting relief from Johnston that would never come. This campaign changed the course of the war and represented a masterpiece of operational art. Thus, after eighteen months of setting conditions, planning, maneuver, and combat, ultimately

[186] Groom, *Vicksburg, 1863*, 312.

[187] Grabau, *Ninety-Eight Days: A Geographer's View of the Vicksburg Campaign*, 245–47.

[188] Groom, *Vicksburg, 1863*, 325–28.

[189] Ibid., 334–36.

[190] Gabel, *Staff Ride Handbook*, 159–64.

[191] Ibid., 78–81.

the "Gibraltar of the South" would fall to siege craft and starvation, the epitome of logistics culmination.[192]

Conclusions

As an element of operational art, operational reach provides a lens to evaluate Grant's movements and maneuver throughout the campaign. *Army Doctrine Reference Publication, 3-0, Operations*, describes operational reach as a "tether" that limits a unit's ability to continuously maneuver. In so doing, doctrine inherently acknowledges the necessity of resupply and support activities. The underlying assumption is that units must account for and synchronize logistics support in time, space, and purpose as an operation, not an administrative requirement. Operational reach "is a function of intelligence, protection, sustainment, endurance, and relative combat power. The limit of a unit's operational reach is its culminating point and it balances the natural tension among endurance, momentum, and protection."[193]

While logistics support, stockpiles of supplies, and distribution networks do not win battles, they do make formations durable and resilient. During Grant's western campaigns, he demonstrated the importance of operational logistics as an antecedent requirement for maneuver. He executed an attritional strategy on both the logistics capacity of the CSA and rebel combat formations.[194]

Grant's western campaigns not only tells a compelling story of triumph and defeat, but it reveals lessons about operational art and military planning. Because basing "directly enables and extends operational reach, and involves the provision of … protected locations from which units can conduct operations," Grant had to secure these areas prior to maneuver.[195] When he failed to properly secure his supply base, a Confederate raid made him logistically culminate, and he could

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[192] Woodworth and Grear, *The Vicksburg Campaign*, 126.

[193] US Army, *ADRP 3-0*, 2-9.

[194] Jones, *Civil War Command and Strategy*, 132.

[195] US Army, *ADP 4-0*, 12.

no longer keep in the field. After learning this lesson the hard way, Grant detailed appropriate combat power for securing his base at Milliken's Bend and associated lines of communication. When he was unwilling to do so, he accepted and managed risk by breaking free of conventional distribution methods.

Commanders like Grant are exceedingly rare. As such, contemporary operational planners must learn from historical campaigns to prepare for LSCO. This means not only accounting for the defense of logistics nodes, but also the targeting of enemy industrial capacity and logistics support. *Field Manual 3-0, Operations,* has incorporated the need for dedicated security forces in the respective consolidation and support areas.[196] By doing so, the US Army recognizes that it must conceptualize logistics activities as Grant did – necessary antecedents for operational maneuver, not administrative entanglements that siphon off combat power. The investment of combat security forces helps regenerate and sustain armies, provides an area to project forward distribution, and ultimately extends operational reach. Grant necessarily *had* to engage in logistics due to the confines of his contemporary staff structures. By contrast, modern commanders have the assistance of professional logisticians and operational planning staffs. These agents must help commanders understand the implications of setting conditions for maneuver, managing risk, and ensuring commanders use basing to enable logistics operations, set conditions for success, and maintain their operational reach.

[196] US Army, *FM 3-0*, 1-34–1-35.

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