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Markey, Ryan J.
Commander, US Navy

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The United States (US) possesses the largest and most powerful Navy in the world. However, the greatest maritime force ever assembled is not without capability gaps. The Navy requires a vibrant riverine capability in order to provide Combatant Commanders a versatile brown water force. This versatility is highlighted by the ability to train host nation forces, conduct irregular warfare (IW), logistics, amphibious assault, direct fires, surveillance, and maritime interdiction. In addition, they are a viable option to meet the challenges presented in either new generation warfare or great power competition.

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The Utility of US Navy Riverine Forces

by

Ryan Markey

Commander, United States Navy

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THE UTILITY OF US NAVY RIVERINE FORCES
By

Ryan Markey

Commander, United States Navy

A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.

This paper is entirely my own work except as documented in footnotes. (or appropriate statement per the Academic Integrity Policy)

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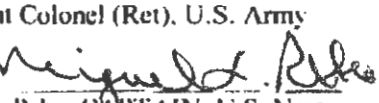
12 May 2020

Thesis Advisor: Signature: 
Homer Harkins, Ed.D., Professor
Lieutenant Colonel (Ret), U.S. Army

Approved by: Signature: 
Miguel L. Peko, CAPTAIN, U.S. Navy
Director, Joint Advanced Warfighting School

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Abstract

The United States (US) possesses the most capable Navy in the history of the world. However, the most powerful maritime force ever assembled is not without capability gaps. Time and time again, the US Navy ineptly rebuilds its riverine capability and capacity to meet threats in the littorals. And time and time again, the forces disband when the perceived threat diminishes. In each of America's great conflicts, from the Revolutionary War through Operation Iraqi Freedom (OIF), the Navy reestablishes its riverine forces. The plank owners make due with limited training, inadequate equipment, and arrive tardy to the fight. They are built from the ground up rather maintaining a ready force to fight in the littorals with proper training and manning. A vibrant riverine force is capable of power projection from the open ocean to waterways only a few feet in depth. The reach and rapid maneuverability of riverines provide Combatant Commanders the ability to apply a versatile force in some of the most remote locations on the globe. This versatility is highlighted by a riverine platoon's ability to partner with and train host nation forces, conduct irregular warfare (IW), logistics, amphibious assault, direct fires, surveillance, and maritime interdiction. Riverines also functioned as a highly sought-after quick reaction force (QRF) in Iraq. In addition, they are a viable option to meet the challenges presented in either new generation warfare or great power competition. They remain an integral force package for the US Navy, and more importantly, the joint force.

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Introduction

The average citizen is quite unaware of certain minor wars and activities in which his Navy's part has yielded results beyond price or praise.[1]

-Rear Admiral Casper F. Goodrich, USN

The US Navy has a longstanding, yet enigmatic and inconsistent history of riverine operations. Riverine capability receives some measure of support when the perceived need arises, e.g. Vietnam and Iraq, and rapidly dismantled when deemed unnecessary. However, in order to meet the requirements of the 21st century battlefield, the Navy must increase its riverine capacity and match the standards established during Iraq deployments from 2007-2011. Maintaining and bolstering this force allows the Navy to dominate the littorals and avoid building from the ground up after decommissioning these unique and versatile capabilities. The modern Naval officer's ethos is very much oriented toward blue water operations, focusing on the Mahanian concept of sea power. In reality, the 21st century Navy must balance blue and brown water commitments and operations, especially when the US faces relatively few, if any, true near-peer adversaries.

US Navy riverine operations did not begin and end with the Vietnam War, although those brown water sailors deservingly receive much of the recognition today. This work will delve into the importance, enduring history, and lessons learned from the very first iteration of riverine warfare in the 18th century through Operation Iraqi Freedom (OIF). In order to provide the proper context of the ebb and flow of riverine operations, it is first important to highlight the history of brown water operations from the

[1] United States. *Riverine Warfare: The US Navy's Operations on Inland Waters* (Washington D.C.: Naval History Division Press Heritage Command, 1969), 12.

founding of the US Navy. The US Navy is no stranger to fighting on the rivers both at home and abroad throughout its storied 244-year history. American Revolutionary War sailors dared to challenge Royal Navy warships on colonial rivers and lakes. Then, during the War of 1812, they helped forged victory for General Andrew Jackson in New Orleans.[2] By the 1830s, riverine units were the force du jour in defeating the Seminole Indians in the Florida Everglades, by enabling Sailors and Marines the ability to penetrate deep into enemy occupied territory.[3] Only a decade later, riverine forces traversed the Tabasco River during the Mexican War of 1846-1848, giving the US forces the ability to strike from land and sea.

During the Civil War, both the Union and Confederacy understood the importance of controlling the Mississippi River, especially adjacent to New Orleans. General Ulysses S. Grant enveloped the forces at Vicksburg with the aid of riverine forces, compelling the Confederates to surrender. Capturing the Mississippi was a devastating blow to the Confederacy's war effort, as it split their nation in two. During the turn of the 20th century, riverines were consistently employed in the Philippines to support US foreign policy and intervention. These agile craft provided both Naval gunfire and logistical support in order to defeat a Pilipino insurgency deep inland. Remaining in Asia, riverines were crucial to continually promoting US interests by protecting American missionaries and traders while thwarting brigands up and down China's Yangtze River.[4] Finally, during World War II, Riverine forces delivered countless troops

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[2] Edward J. Morolda 2006. "Riverine Warfare: The US Navy's Operations on Inland Waters." *Naval History and Heritage Command.* Accessed from: https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html#modern.
[3] Ibid.
[4] Ibid.

in the Pacific and Mediterranean, most notably across the Rhine River for the final defeat of Nazi Germany.[5]

Expanding the size, role, and utility of US Riverine Forces will improve the Navy's ability to work jointly, defeat irregular threats in the littorals, and poise itself to meet the requirements of the 21st century battlespace. In addition, the cost benefit of purchasing and maintaining smaller, relatively inexpensive Riverine Patrol Boats (RPB) and Riverine Command Boats (RCB) allows for judicious budgetary execution. Currently, the Navy does not provide adequate resources to appropriately organize, man, train, and equip these vital forces. Riverine units provide cost effective and scalable forces to the Combatant Commander capable of rapidly deploying to perform conventional brown water operations, irregular warfare (IW), security and partnership assistance, and Special Operations Forces (SOF) support. Rather than adhering to the dogma of Mahan, the Navy would do well to heed Nicholas J. Spykman's Rimland Theory, especially in an era of a rising China and their Belt and Road Initiative. The Rimland Theory asserts that the key to controlling the world's largest landmass is to establish superiority along the Eurasian coastline. Brown water navy operations will prove the most effective power projection force capable of deploying rapidly and maintaining a footprint in contested areas.

The need for brown water sailors endures, and the Navy places itself at a strategic disadvantage by refusing to maintain a vibrant riverine force. Deploying a traditional surface warship is a methodical undertaking, incredibly costly, and plodding task for the Navy. Quite simply, the Navy does not maintain a large or ready enough fleet to fulfill

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[5] Vincent P. O'Hara. "Landing the Troops… Across the Rhine." *Naval History Magazine*, vol. 29, issue 2.

its increasing requirements. A RPB is capable of making the journey from Norfolk, Virginia to the Black Sea for less than the cost of a Guided Missile Destroyer steaming full throttle across the Atlantic over a period of two weeks. Not only is a large surface warship cost prohibitive, a RPB's transit time is severely reduced to only 13 flight hours on board a C-17.[6]

The research compiled relied heavily on historical data and first-hand written accounts from former riverine operators. The author drew upon historical data and documentation from the Revolutionary War through World War II (WWII). The more contemporary riverine operations were covered extensively by officers who conducted operations during the Vietnam War and Operation Iraqi Freedom (OIF). Their insights and critiques highlight both the necessity of riverine forces, but forged strong arguments for their employment and versatility.

Additionally, the author performed qualitative research in the form of either face to face or over the phone interviews. In order to strengthen and diversify the finding's validity and reliability, several US and coalition infantry officers sat for interviews. Although, not directly referenced, these officers provided the necessary insight to realize the importance of riverine interdiction for US and Coalition land forces. Overall, the infantry officers interviewed held positive beliefs on the usefulness and necessity for Riverine operations, especially those performed in Iraq between 2007-2011. Relying heavily on historical texts and qualitative methods was not necessarily the author's intention from the outset, rather a result of discovering what worked best for this particular thesis. The author realized that purely relying on opinions collected from

[6] Shannon Krievs, email message to author, Cost Estimate Quote from United States Transportation Command: C-17 delivery of one Riverine Patrol Boat. 31 October, 2019.

former riverine operators would taint the data. Riverine operators take a lot of pride in their service as brown water sailors and have very high opinions of the community. This bravado and enthusiasm for riverine operations may have led to a misguided argument. Hence, the reason for interviewing infantry officers lacking significant loyalty to riverine or Naval operations. All data and information derived from former riverine operators was sourced via previously vetted published written material.

Chapter 1: US Riverine History

The Revolutionary War – the Mexican War:

During the Revolutionary War, riverine forces may have lost their most noteworthy battle, but helped maintain the fragile Continental Army's chance of beating the British. Under the bold leadership of Colonel Benedict Arnold before he became a notorious US traitor, Continental Naval forces fought hard for control of Lake Champlain. The Lake connects the waterways between Canada and the original 13 colonies and served as a prime invasion route noted by nearly every prominent British general during the Revolution.[7] Control of the Lake would have split New England from the remaining colonies and this startling recognition was the impetus behind seizing fort Ticonderoga in 1775. Not only was this a strategic decisive point of terrain, it provided the Colonial Army with badly needed supplies, namely cannons and munitions.[8] In the wake of his victory, Arnold rapidly armed a schooner and pressed north toward the British base of St. John's on the Richelieu River. During a pre-dawn raid, Arnold managed to capture the fort by maneuvering up river for concealment and surprise.[9] His riverine forces captured or destroyed the majority of the Crown's boats and surface vessels at St. John's, temporarily gaining control of Lake Champlain and derailing the British plans for that campaign season.[10]

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[7] James L. Nelson. *Benedict Arnold's Navy: The Ragtag Fleet that Lost the Battle of Lake Champlain but Won the American Revolution* (New York: McGraw-Hill Companies, 2006), 14.
[8] Edward J. Morolda 2006. "Riverine Warfare: The US Navy's Operations on Inland Waters." *Naval History and Heritage Command.* Accessed from: https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html#modern.
[9] Ibid.
[10] James L. Nelson. *Benedict Arnold's Navy: The Ragtag Fleet that Lost the Battle of Lake Champlain but Won the American Revolution* (New York: McGraw-Hill Companies, 2006), 321.

The British, recognizing the strategic value of Lake Champlain, began to reconstitute their littoral naval forces by building at a feverous pace to engage Arnold's flotilla. Arnold matched the British in this arms race although confronted with a resource shortage. He created the blueprints and specifications for a new riverine boat capable of being swift and agile via sail or oar. His evolutionary design provided an advantage over the slower, deeper draft, heavier British ships which his flotilla could not match in a traditional line battle.[11]

Ultimately, Arnold lost the Battle of Valcour Island, but he gained a strategic victory for the Continentals. He and his riverine forces delayed the British advance south for a calendar year because of the damage inflicted on the Royal Navy. This delay allowed the Continental Army to gain much needed strength over the winter and defeat the British at Saratoga in 1777.[12] The strategic gains secured by Arnold cannot be understated, because after Saratoga, the French openly joined the Americans, providing both men and resources.

Only a generation later, riverine forces were crucial to the success of the War of 1812. The British controlled the Great Lakes facilitating their capture of Detroit and invasion of Ohio. The US Navy sought to command the lakes of the Erie-Ontario frontier to slow the British invasion.[13] They did so by establishing small seabases, acquiring lake

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[11] The ship of the line evolved from the galleon, a three or four-masted vessel that had a high superstructure on its stern and usually carried heavy guns along two decks. As fleets composed of these ships engaged in combat, they adopted a fighting formation called the line of battle, in which two opposing columns of ships maneuvered to fire their guns in broadside (a simultaneous discharge of all the guns arrayed on one side of a ship) against each other. Combat using these formations was known as the line of battle warfare.

[12] James L. Nelson. *Benedict Arnold's Navy: The Ragtag Fleet that Lost the Battle of Lake Champlain but Won the American Revolution* (New York: McGraw-Hill Companies, 2006), 344.

[13] Edward J. Morolda 2006. "Riverine Warfare: The US Navy's Operations on Inland Waters." *Naval History and Heritage Command.* Accessed from: https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html#modern.

craft, and building small, nimble gun boats. Local US and British forces engaged in a naval build up the likes of Lake Champlain during the Revolution. This time, the US had the advantage of sheer numbers of boats, but the Royal Navy's guns far outpaced those of the American flotilla. Under the leadership of Admiral Oliver Hazard Perry, the Americans forged victory against the odds, gaining control of Lake Erie, the upper lakes, and the surrounding territory, allowing freedom of navigation on these vital chokepoints and waterways.[14] Additionally, controlling Lake Erie afforded American forces incursion into Canada, ultimately claiming the Northwest Territory and expanding the size of the US.

Even as late as 1814, the fledgling US Navy was no match for the adversarial Royal Navy on the open ocean and along the American eastern seaboard. Commodore Joshua Barney appealed to Congress for a naval strategy consisting of rapidly deployable small craft designed to defend the river approaches to Washington, D.C.[15] The plan outlined river, estuary, harbor and coastal defense, harassment of Royal Navy surface combatants, and intelligence collection. Barney gained a key understanding for various naval tactics while serving as a captain in the French Navy from 1796-1802, which he used to full advantage in drawing up his plan for defending Washington.[16] Barney's flotilla, as this naval force became aptly named, threatened British sea lines of communication during their assault on Washington. Barney specifically designed vessels capable of operating in shoal water and flats, which disproportionately threatened the Royal Navy considering their size in comparison to traditional warships. For months

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[14] Ibid.
[15] Ibid.
[16] Hamilton, Alexander, Harold Coffin Syrett, & Jacob Ernest Cooke (1974) The Papers of Alexander Hamilton, Volume 20. (Columbia University Press).

Barney's flotilla delayed and stymied the British from successfully launching an amphibious invasion, and only failed to keep the Royal Navy at bay when she was reinforced with a fleet arriving from Bermuda.[17]

Far from the shores of Washington, Commodore Daniel T. Patterson defended the river approaches to New Orleans against the British. He correctly recognized that the British invasion route would traverse both the Borgne and Ponchartrain Lakes. Patterson met the British with a riverine force with less firepower than one British ship of the line.[18] Patterson's riverine forces struck at the British flank and delayed the invasion for weeks, allowing General Andrew Jackson the ability to gather enough troops to mount a competent defense.[19] The actions of Patterson's forces depleted the British ranks and tipped the scales in favor of Jackson's land forces. Jackson praised the efforts of Patterson's men and ascribed the cause of victory to their efforts in the waterways surrounding New Orleans.

Following the War of 1812, riverine forces became offensive in nature in reaction to the changing strategic vision of the US Navy. Although, the golden age of piracy ended in the 1720s, raiders infested the Caribbean and Gulf of Mexico long into the 19th century. These marauders had a destabilizing effect on maritime commerce in America's backyard, and the US would not hesitate to dispatch their Navy to protect her interests. Nearly 3,000 merchant ships fell to attack in less than a decade following the War of

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[17] Edward J. Morolda 2006. "Riverine Warfare: The US Navy's Operations on Inland Waters." *Naval History and Heritage Command.* Accessed from: https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html#modern.

[18] Ibid.

[19] Rodney MacDonough. *Life of Commodore Thomas Macdonough, U. S. Navy*, (Boston, MA: The Fort Hill Press, 1909), 303.

1812, resulting in devastating financial loss and inhuman treatment of captured crews.[20] The US Navy created the West India Squadron in 1822 to engage the pirates on uncharted bays, inlets, lagoons, and rivers. These riverine forces were so successful, they captured or destroyed 60 ships, eliminated corsair dens, and effectively ended piracy in the region because the risk-reward for piracy had all but subsided.[21] This squadron was the first to forge similarities to modern riverine warfare.

Furthering the likeness to more modern operations like those conducted in the Mekong Delta were the riverines dispatched during the Seminole Wars of 1836-1842. The Seminole tribes refusing to comply with Congress and relocate west of the Mississippi River were met with US forces after massacring an Army detachment near Tampa in 1835.[22] The Seminole tribes were agile and clandestine fighters capable of retiring to the swampy wilderness to avoid counterattack from US forces. That was until the Army requested the navy's support to open lines of communication, shuttle supplies, and engage the Seminoles. In order to penetrate the Everglades, Navy commanders fashioned flat-bottomed boat, plantation canoes, and sharp-ended bateaux.[23] These vessels were so agile and small that discarded blankets and tents served as the sails, and became knowns as the "Mosquito fleet." The Mosquito fleet's operations resembled those of the Mekong Delta riverines, assaulting deep into enemy controlled lands, ultimately enabling the destruction of the Abraka stronghold. The Army's dependence

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[20] Davis, William C. (2005), The Pirates Laffite: The Treacherous World of the Corsairs of the Gulf, Harcourt Books

[21] Ibid.

[22] George E. Buker. "Lieutenant Levin M. Powell, USN, Pioneer of Riverine Warfare." *The Florida Historical Quarterly*, vol. 47, Issue 3.

[23] Edward J. Morolda 2006. "Riverine Warfare: The US Navy's Operations on Inland Waters." *Naval History and Heritage Command*. Accessed from: https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html#modern.

on the Navy's versatile riverine forces capable of negotiating the ever-changing character of the waterways from deep and wide to narrow and shallow was paramount to their victorious campaign.[24]

During the Mexican War from 1846-1848, riverine forces conducted raids against the city of San Juan Bautista de Tabasco, a vital chokepoint which supplied Mexican forces. Assaulting the city provided several significant problems, but none more menacing than the terrain itself. The Tabasco River's current is very strong, and the banks are covered in lush overgrown vegetation and plant life, providing cover and concealment for defenders with cannon and rifle. The river possessed an "S" shaped bend, named "Devil's Turn" which the Mexicans fortified to guard the avenue of approach to the city.[25] Using several small steam ships the US Navy traversed the first 65 of the 74 miles up the Tabasco River before landing forces ashore. The remaining 9 miles were hard fought on land and on the river itself, but both contingents operated jointly under the command of Captain Matthew C. Perry and ultimately captured Fort Iturbide.[26] The Fort protected the city of San Juan, and its capture by Americans rendered the city defenseless and unable to continue supplying Mexican forces.

Civil War-World War II:

During the Civil War, the North's production capacity far outweighed that of the South. At the war's outset, the Confederacy had no Navy, so command of the sea was ceded to the Union. The Union recognized their initial advantage and blockaded

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[24] Ibid.
[25] United States. *Riverine Warfare: The US Navy's Operations on Inland Waters* (Washington D.C.: Naval History Division Press Heritage Command, 1969), 18.
[26] United States. *Riverine Warfare: The US Navy's Operations on Inland Waters* (Washington D.C.: Naval History Division Press Heritage Command, 1969), 19.

Southern cities in order to strangle their lagging industry. Inland, the Union conducted amphibious assaults to capture coastal forts directly, and force the Confederacy to spread its troop concentration to defend potential landing terrain. Ultimately, the Union sought to split the Confederacy along the Mississippi River. The Navy commenced Riverine operations under the command of Commander John D. Rodgers and commissioned a new class of heavily armored gunboats. The gunboats, named the "city class" were all individually named for the cities in which they were defending.[27] These boats, along with existing wooden gunboats provided mobility, speed, naval gunfire, and flexibility to Union commanders.

The gunboats played an integral role in the capture of Fort Henry. They attacked unilaterally although the battle plan called for a joint action with General Grant's troops. Grant and his men could not traverse the muddy and unforgiving terrain surrounding the fort. The gunboats knocked out nearly all the Confederate cannons until the fort surrendered, giving the Union a foothold on the Tennessee River allowing continued unmolested Riverine operations.[28]

General Johnston of the Confederate Army dismayed that he gave the fort to the enemy, thus granting full control of the Tennessee River. The only obstacle standing in the Union's way was Fort Donelson on the Cumberland River, which eventually succumbed to General Grant after a combined land-river assault. The resulting campaign was devastating for the Confederacy as Grant made use of riverine forces to turn the tide

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[27] Gary D. Joiner, *Mr. Lincoln's Brown Water Navy: the Mississippi River Squadron,* (New York: Rowman and Littlefield, 2007).

[28] Edward J. Morolda 2006. "Riverine Warfare: The US Navy's Operations on Inland Waters." *Naval History and Heritage Command.* Accessed from: https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html#modern.

of battle at Shiloh. The battle had been the bloodiest in the Civil War to date, and opened up operations in the Mississippi Valley, culminating in the Vicksburg campaign to secure the entire Mississippi River.[29]

Countless other battles and campaigns were shaped by Riverine actions during the Civil War, which drew notice from both Robert E. Lee and Abraham Lincoln. Lee dismayed at his Army's inability to oppose landing forces when under naval gunfire, allowing the Union to continually press its advantage into the Confederacy's rivers and inland waterways. President Lincoln applauded the flexibility of his Navy by proclaiming that "Uncle Sam's web feet" must never be forgotten, "not only on the deep sea, the broad bay, the rapid river, but also up the narrow muddy bayou, and wherever the ground was a little damp."[30]

Riverine warfare was not the main naval effort of World War II, but it did play its part in the Solomons, East Indies, Philippines, and finally in Europe. The vessels of choice were the 36-foot landing craft, vehicle, personnel (LCVP) and 50-foot landing craft, mechanized (LCM), the very boats that had brought U.S. troops ashore at Normandy.[31] Five US armies totaling 50,000 troops, thousands of vehicles, and ordnance was ferried across the Rhine River in less than three days. The Navy's small craft coxswain battled navigational hazards, rapid currents, floating debris, and the litany of problems posed by fresh water to include mud, silt, and ice under threat of German

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[29] National Geographic. "Apr 7, 1862 CE: Battle of Shiloh." *National Geographic This Day in Geographic History*. Accessed from: https://www.nationalgeographic.org/thisday/apr7/battle-shiloh/.
[30] United States. *Riverine Warfare: The US Navy's Operations on Inland Waters* (Washington D.C.: Naval History Division Press Heritage Command, 1969), 2.
[31] Vincent P. O'Hara. "Landing the Troops… Across the Rhine." *Naval History Magazine*, vol. 29, issue 2.

artillery and aerial bombardment. Hundreds of miles ashore, these landing craft pierced the boundaries of the physical and symbolic German heartland.

Vietnam:

Surely the most recognizable era in US riverine history is the Vietnam War. But, these brown water sailors were far from the first of their kind as evidenced above. The US established a brown water contingent in order to wrestle the Mekong River Delta from the Viet Cong (VC). The landscape south of Saigon was devoid of cities and infrastructure, setting ideal conditions for an insurgency to thrive. In an effort to aid the US Army, Marine Corps, and Army of South Vietnam (ARVN) in the Mekong Delta, the Navy established a robust Riverine capability. Perhaps the greatest riverine undertaking was Operation Game Warden. The Operations Order (OPORD) define the mission as follows, "conduct river patrols and inshore surveillance, enforce curfews, prevent Viet Cong infiltration, movement and re-supply along the Delta estuary coast and across the major rivers of the Mekong Delta and the Rung Sat Special Zone of the Republic of Vietnam and conduct mine countermeasure operations as ordered in order to assist the government of the Republic of Vietnam to establish effective population and Resources Control Measures and to counter the effect of enemy mining."[32]

The OPORD demanded the execution of riverine operations, not the establishment of such a force, which was achieved piecemeal. So, before the Navy purchased its first Riverine Patrol Boat, the sailors commenced the operation with less than optimal landing craft, personnel, large (LCPL) and LCM boats. The LCPL and LCMs had a draft of nearly five feet, and greater than five times those of later Patrol

[32] Commander River Patrol Force (CTF 116), Commander River Patrol Force Operations Order, (Can Tho, Vietnam: CTF 116, 1967), pg. 2.

Boats purchased from United Boatbuilders.[33] During the inception of Game Warden, the Navy still lacked brown water sailors and in 1965 established an assault coxswain course stateside.[34] The sailors already deployed to the Mekong Delta did not have the benefit of schooling, so they had to develop tactics and doctrine via trial and error in combat. Drawing on lessons learned from the French and on the fly developmental doctrine gave way to a tremendous amount of flexibility, which in many ways was impetuous to their success.[35]

Game Warden stymied the VC's ability to move troops and supplies downriver. In fact, they often avoided direct force on force engagements with the riverines. They focused on circumventing all patrol boats which complicated their lines of communication and forced delays in amassing combat power. To avoid detection the VC operated at night, so Game Warden initiated a curfew on the river during periods of darkness. The Riverine forces had the painstaking duty of relaying the conditions of the curfew to local villagers in an effort to avoid confusion between innocent travelers and the VC. Before the crews could engage, they had to positively ID boats as VC. This proved difficult in the dead of night through lush vegetation.

The crews did more than engage the enemy, they were responsible for establishing trust with the local populace and contributing to humanitarian assistance with United States Agency for International Development (USAID), especially in the form of Medical Civic Action Projects (MEDCAPs).[36] They even bolstered the US

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[33] Mesko, Jim. Riverine A Pictorial History of the Brown Water War in Vietnam (Carrollton, TX: Squadron/Signal Publications, 1985), pg. 11-12.
[34] Mobile Riverine Force Association, "Task Force 116", Accessed from: http://mrfa.org/tf116.htm
[35] Thomas J. Cutler, LCDR USN. *Brown Water, Black Berets Coastal and Riverine Warfare in Vietnam* (Annapolis, Maryland: Naval Institute Press, 1988), 163-4.
[36] US Navy Chief of Information, *The Navy in Vietnam*, (Washington, DC: GPO 1968), 10.

Psychological Operations (Psyops) campaign to encourage VC defectors to surrender with the promise of protection.[37] Riverine sailors had a one in three chance of being wounded, 290 were killed in action, and yet one in five requested a minimum six-month duty extension. This dedication led to their distinction as the most highly decorated Naval Command of the Vietnam War, earning three Medals of Honor and over 900 purple hearts, while maintaining a 40:1 kill ratio.[38] Finally, these riverine forces conducting Operation Game Warden aided in defending several cities from falling into the hands of the North Vietnamese during the Tet Offensive. In January 1968, the Mekong Delta was defended by a various US and ARVN forces, but half of the South Vietnamese were on leave for the holiday. Task Force 116 sailors sprang to action in order to bolster the ranks of their diminished South Vietnamese allies across the Delta. Their bold initiative and flexibility staved off certain defeat.[39]

The bold initiatives undertaken by pioneering members of the US armed forces as far back as the Revolutionary War forged the spirit and underlying necessity for riverine operations. Time and time again, the US military sourced this requirement from existing forces building from the ground up. This accordion approach to creating and employing brown water forces not only delays their initial operational capability, but infuses uncertainty in tactics, techniques, and procedures as they are forged on the fly in combat. These painful lessons would again be realized in Iraq.

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[37] Thomas J. Cutler, LCDR USN. *Brown Water, Black Berets Coastal and Riverine Warfare in Vietnam* (Annapolis, Maryland: Naval Institute Press, 1988), 174.
[38] Ibid, 205-6.
[39] John D. Sherwood, *War in the Shallows: U.S. Navy Coastal and Riverine Warfare in Vietnam, 1965–1968*, (Washington, DC: Naval History and Heritage Command.

Chapter 2: Force Build-up, Experience in Iraq, and Reorganization

Iraq Pre-Riverine Capable Navy:

The Navy was largely left on the sidelines during the invasion of Iraq in March 2003, aside from the participation of an air wing and surface launched tomahawk missiles. The Air Force provided more sorties at a lower cost than any Carrier Air Wing, and the modern surface combatants could not force project up river, proving an ancillary to the efforts of the sister services. The need to send a gun boat up the Tigris and Euphrates Rivers was real, and largely ignored in the first few years of OIF. Finally, in April 2005, former Chief of Naval Operations, Admiral Vern Clark, chided Congress for funding vessels the Navy does not desire, while ignoring its undeniable needs.[40] Four years passed before the Navy established a viable riverine force capable of providing gunfire and logistics support to ground forces. Additionally, speedboats emerged as the weapon of choice for al Qaeda and other terrorist organizations by 2006.[41] Speedboats provided superior maneuverability, limited radar signature, multi-vector avenue of attack, and the ability to blend with other maritime traffic. The Navy had forgotten the successes of Vietnam and shuffled brown water operations to the archives, insisting on creating billion-dollar weapon systems incapable of interdicting hostile parties, securing coastal areas, and operating on inland waters.

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[40] Tim Weiner, "The Navy's Fleet of Tomorrow is Mired in Politics of Yesterday," New York Times, 19 April 2005, pp. C1, C3.

[41] James Plekovski. "Before the Storm: al Qaeda's Coming Maritime Campaign." United States Naval Institute, vol. 131, 12 (2005).

The need for swift, agile, heavily armed shallow-draft riverine boats recurs often enough that it should become a permanent part of the US Navy's arsenal.[42] Starting with Benedict Arnold and continuing through Vietnam, the Navy rapidly acquired civilian hulls and refit them to perform riverine operations. The crews performed admirably, but would have fared better had the Navy invested time and demonstrated an interest in tailoring boats to meet combat conditions.[43] This lack of a developed riverine force limited the Navy's immediate impact on OIF.

In fact, the US Navy identified its inability to conduct riverine operations in 1990 via the Worthington Study. RADM George Worthington, then Commander, Naval Special Warfare Command (NAVSPECWARCOM) developed a training and operational concept to field a battalion-size riverine assault unit from the existing USN force structure. The study's findings advocated a joint Navy and Marine Corps approach to establish the riverine unit designed to fill the recognized capability gaps. The proposed force structure was 3,000 Sailors and Marines, 75 boats, and included both aviation and ground support elements.[44] However, the Department of the Navy balked at the idea given imposed fiscal restraints. They were reeling from budgetary cuts and saw their 600 Navy shedding 30 ships per year following the Cold War. The Navy revisited the Worthington Study multiple times during the 1990s, but ultimately decided to ignore riverine operations assuming NAVSPECWARCOM could execute the mission if it should arise in the future.[45]

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[42] Edward H. Wiser. "Bring Back the Boats." Proceedings, vol. 132, 2 (2006).
[43] Ibid,
[44] Daniel A. Hancock. "The Navy's Not Serious About Riverine Warfare." Proceedings, vol. 134, 1 (2008).
[45] Robert Benbow, Fred Ensminger, Peter Swartz, Scott Savitz, and Dan Stimpson. "Renewal of Navy's Riverine Capability: A Preliminary Examination of Past, Current and Future Capabilities." *Center of Naval Analysis*. Available at: https://apps.dtic.mil/dtic/tr/fulltext/u2/a447820.pdf, March, 2006.

The Navy dropped the ball at the outset of OIF. Thankfully, the United States Marine Corps (USMC) stepped up and deployed a Small Craft Company (SCC) to Iraq in March, 2004. This unit eventually participated in the Battle of Fallujah securing the Euphrates River by chasing insurgents as they fled west, and provided Blackwater Bridge overwatch and an alternate avenue of approach relatively free of improvised explosive devices (IEDs).[46] In addition, the SCC conducted a variety of other operations such as raids, river patrols, Visit, Board, Search, and Seizure (VBSS), tactical resupply, and point security of critical Iraqi infrastructure. However, shortly after returning from their inaugural deployment, the Commandant of the Marine Corps announced the SCC's decommissioning.[47] This unceremonious farewell garnered similarities to that of their Vietnam War predecessors. The SCC may have been disbanded, but the requirement for riverine forces in Iraq remained. Marine Corps leadership within Fallujah and the surrounding Al Anbar province recognized the need for maritime interdiction in counterinsurgency operations. This sentiment was echoed by other coalition partners operating as far south as Basra. Officers from the United Kingdom (UK) noted that the enemy operated on the river with impunity, moving men and materiel in both broad daylight and the cover of darkness.[48]

The USMC formed Dam Security Unit (DSU) 1 from a reserve company of the Assault Amphibious Battalion to provide security to the Hadithah Dam.[49] This was a far

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[46] James E. Wise and Scott Baron. *The Navy Cross – Extraordinary Heroism in Iraq, Afghanistan, and Other Conflicts* (Annapolis, Maryland: Naval Institute Press, 2007), 75.
[47] Jason B. Scheffer. "The Rise and Fall of the Brown Water Navy: Changes in United States Navy Riverine Warfare Capabilities from the Vietnam War to Operation Iraqi Freedom." Master's thesis, United States Command and General Staff College, Leavenworth, 2005.
[48] Stephen Campbell, interview, Lewis and Clark Building, Fort Leavenworth, 21 September 2012.
[49] Michael A. Stolzenburg. "Unified Vision of the Future: Riverine Squadrons and the Security Cooperation MAGTF." Master's thesis, United States Command and General Staff College, Leavenworth, 2008.

cry from riverine operations, but it was enough to reignite the conversation and highlight the necessity for such a capability. The Marine Expeditionary Force (MEF) lobbied Marine Corps Headquarters for permission to push DSU-1 up and down the Euphrates to conduct conventional riverine operations.[50] This request was denied for two reasons. First, the Navy was tasked to provide maritime security at the Hadithah Dam within the next year. Second, the scant training provided to DSU-1 was deemed insufficient for offensive operations and the risk to forces was too great.[51]

Recognizing the training deficiencies encountered in establishing DSU-1, the USMC tweaked their second DSU iteration. DSU-2 was established to not only provide point defense of Hadithah Dam, but bestowed the additional duty of river patrols to be conducted with their Ramadi detachment. Finally, with the establishment of DSU-3, the MEF obtained the authorization they had sought for over a year. DSU-3 conducted full spectrum operations along the Euphrates River from Fallujah to the Syrian border. DSU-3 assumed all the duties of the abandoned SCC, but it took two years in an active conflict to rebuiled the sorely needed riverine capability. DSU-3 performed admirably, even conducting census operations along the Euphrates aiding in local engagement.[52] The unit conducted land operations along the shore, remaining in range of its organic weapons to compliment ground combat elements. Most significantly, the company cleared the islands from Hadithah to the Syrian border of insurgent caches with the aid of military working dogs, engineers, and explosive ordinance disposal (EOD) technicians.[53] Finally,

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[50] Michael A. Stolzenburg. "Unified Vision of the Future: Riverine Squadrons and the Security Cooperation MAGTF." Master's thesis, United States Command and General Staff College, Leavenworth, 2008.
[51] Ibid.
[52] Ibid.
[53] Ibid.

in the spring of 2007, the USMC formally turned over riverine operations to the Navy as Riverine Squadron (RIVRON) One relieved DSU-3.[54]

Navy Riverine Squadrons:

A year prior to the turnover with the USMC, in May 2006, the Navy established Riverine Group 1 (RIVGRU) at Naval Amphibious Base, Little Creek, Virginia. The group, roughly equivalent in size to a carrier air wing, included three Riverine Squadrons (RIVRONs) commissioned between 2006 and 2007 comprised of 12 boats each. The Navy rightly assessed that they needed to address and resolve the expeditionary capability gap in the littorals. Riverine forces were created to "extend beyond traditional deployment areas and reflect missions ranging from humanitarian operations to an increased emphasis on counterterrorism and irregular warfare."[55] The 2006 concept of operations stated that,

> Riverine operations will conduct maritime security and theater security cooperation operations in a Riverine area of operation, which may include: securing areas for military or commerce operations, preventing flow of contraband, enabling power projection operations, joint, bi-lateral exercises, personnel exchanges, and humanitarian assistance. The force will be capable of combating enemy Riverine forces, by applying direct or supporting fires. Three Riverine Squadrons under one Riverine Group Commander serve as a ready force for the Joint Forces Maritime Component Commander. Each Riverine Squadron consists of specially designed craft configured to operate in a hostile Riverine environment. Watercrafts will have multiple crews for near continuous operations and lift capacity for a small tactical unit. Manning, training and equipment will support operations versus a Level II threat, and include organic Command, Control, Communication, Computers, and Intelligence, Force Protection, and logistics.[56]

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[54] John K. Hamilton. "Riverine Squadron One Deploys." *Navy Expeditionary Combat Command Navy NewsStand*, 8 March, 2007 https://www.navy.mil/submit/display.asp?story_id=28208.
[55] US Department of the Navy, US Coast Guard, *A Cooperative Strategy for 21st Century Seapower*, 10.
[56] Department of the Navy, *US Riverine Group Concept of Operations (CONOPS)*, 28 September 2006, 7.

In short, the riverine force provided an offensive component to the Joint Force via adaptive, scalable, and agile mission sets. Each RIVRON conducted seven-month rotations in Iraq enabling joint warfighters, interagency partners, and multi-national forces.

Riverine operations were conducted primarily within easily recognizable confines of naval expertise, the maritime security domain. However, the maritime security domain extends ashore, and RIVRONS accomplished area control and denial mission in Iraq daily. Supporting multi-national and civil authorities, riverine forces provided critical infrastructure protection, control of the riparian regions, and aided in the restoration of Iraqi governmental agencies and essential services.[57]

Interdicting insurgent lines of communication and engaging with the local populace, just as their Vietnam Game Warden counterparts had done, provided invaluable insights enabling irregular warfare.[58] RPBs provided fire support to conventional, multinational, and SOF, and riverine Joint Terminal Attack Controllers (JTACs) coordinated and controlled close air support (CAS) and indirect fire.[59] In addition, riverine boats facilitated the insertion and extraction of US, interagency, SOF, and multi-national forces. In addition to these operations and in conjunction with joint land and air forces, RIVRONs were regularly used as a blocking force, and maneuver to capture or prevent the escape of an enemy.[60]

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[57] Raul Gandara and Greg Sandway, "Irregular Warfare," briefing slides with scripted commentary, Little Creek, VA Riverine Group One, March 12, 2009.
[58] Ibid.
[59] Ibid.
[60] Gregory Sandway. "War on the River: Development of Joint Expeditionary Riverine Officers." Master's Thesis, US Army War College, Carlisle Barracks, Pennsylvania, 2010.

A significant activity that will lend credence to the use of riverines in a conventional environment was their Theater Security Cooperation (TSC) activities. Most notably, the riverine forces trained and created the Iraqi Waterborne River Police initiative. They established a regional Iraqi River Police training facility, directly building security force capability and capacity for the host government, and facilitated key leader engagements.[61] In less than five years of Iraq deployments, with single squadrons operating no more than 12 boats at a time, the riverine forces became a viable and in demand quick reaction force. RIVRONs conducted more than 2,000 missions and flew upwards of 660 unmanned aerial vehicle hours between March 2007 and October 2011.[62] Their swift and agile waterborne capability of search and seizure, insertion, extraction, and supporting fires became a staple of the Navy's ability to impact the war. Then, in the blink of an eye, the Navy rescinded its resolve to conduct riverine operations in Iraq.

Riverine and Maritime Expeditionary Security Merger:

On June 1, 2012, the Navy merged the riverine force with Maritime Expeditionary Security Forces (MESF), into a blend of offensive and defensive brown water capabilities. The new organization became the Coastal Riverine Force (CORIVFOR), broken down into two Coastal Riverine Groups (CORIVGRU), and further separated into individual units named Coastal Riverine Squadrons (CRS). Each squadron includes a headquarters element and four distinct companies. Three of these companies perform traditional maritime security operations, such as protecting ships and shore facilities,

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[61] Gregory Sandway. "War on the River: Development of Joint Expeditionary Riverine Officers." Master's Thesis, US Army War College, Carlisle Barracks, Pennsylvania, 2010.
[62] Ronald O'Rourke. "Navy Irregular Warfare and Counterterrorism Operations: Background and Issues for Congress." Congressional Research Service, 25 June, 2014.

carrying out search-and seizure-operations, and also fly away security details for aircraft operating in remote locations. The fourth, Delta Company, specializes in traditional riverine duties, such as insertions and extractions, boardings on rivers and other inland waters, intelligence collection and offensive combat operations. This left the Navy with only three riverine companies in the entire service.

The Navy's leadership sorely underestimated the negative impact the merger would have on riverine operations. A former commander of one of the inaugural CORIVGRUs claimed that riverine forces would see no decline in capability and competency, and source all requirements.[63] Merging seven defensive MESF squadrons with three offensive RIVRONs to create three blended units is a clear indication that capability, capacity, and performance would decline. The Navy pressed on, assuring themselves that riverine operations were not necessary. The Navy had not learned the many lessons encountered from the Revolution through the Vietnam War. Riverine forces are critical to the success of the Navy, and their absence is noted by the Joint Force. The Navy continued to treat riverine forces with an accordion like effect, ever expanding and shrinking capacity and budgets. Finally, in 2016, the merger with MESF and riverine erosion backfired publicly, when two RCB crews surrendered to Iranian Guard Corps Naval Forces (IRGCN) in the vicinity of Farsi Island located in the Arabian Gulf.

The 170-page investigation into the incident resulting in the capture at gunpoint and detention of 10 US Navy sailors was scathing. The newly established CRF proved itself incapable of properly manning, training, and equipping even a single detachment of

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[63] NECC Public Affairs. "NECC Announces Formation of Coastal Riverine Force." US Navy, https://www.navy.mil/submit/display.asp?story_id=67167, 14 May, 2012.

two boats. The investigation describes that on January 12, 2016 two RCBs attempted a 250 nautical mile transit from Kuwait to Bahrain. After deviating from their planned intended movement (PIM)[64], one boat suffered from an engine malfunction while the other failed to pull security. The crews were surrounded by ever increasing IRGCN small boats and surrendered without firing a shot or putting up a struggle. Code of Conduct violations aside, the mission launched five hours late due to engine maintenance, while devoid of positive satellite communications with any higher headquarters authority in either Kuwait, Bahrain, or the Jebel Ali Tactical Operations Center (TOC), and crewmembers bore no understanding of the threat environment.[65] Finally, the 250nm voyage was the longest ever attempted by the unit, and the boat crews' lack of navigational prowess was evident by unwittingly violating Saudi Arabian territorial waters before drifting into Farsi Island. The CNO at the time of the incident, ADM John Richardson, stated that the "goal of this investigation was to conduct a thorough review of what US Navy actions may have contributed to this incident."[66] However, the findings concluded that the incident was not the fault of the Navy at large, rather in the CRS community. Although, still technically riverine forces, these sailors demonstrated their inability to complete a simple open ocean transit. Their failures are less due to individual ineptitude and highlight the diminished quality of training and standards set forth by the merger with MESF.

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[64] A planned intended movement (PIM) is the designated navigational route established prior to a ship getting underway.

[65] Commander, Destroyer Squadron Fifty. "Command Investigation to Inquire into Incident in the Vicinity of Farsi Island Involving Two Riverine Command Boats (RCB 802 and RCB 805) On or About 12 January 2016." Redacted and unclassified releasable version, 28 February, 2016.

[66] Navy Office of Information. "Navy Releases Results of Riverine Command Boat, Farsi Island Investigation." US Navy, https://www.navy.mil/submit/display.asp?story_id=95458, 30 June, 2016.

Prior to the merger, riverine sailors were trained with and by combat experienced SEALs, SWCCs, EOD techs, and Marines. Training requirements were stringent, relevant, and enforced. It took four months minimum to craft a riverine crewmember. Then, a crewmember stayed with his detachment and crew throughout an entire training cycle before deploying. The workups started with single boat crews demonstrating proficiency in their own craft, then pairing with another, and finally culminating in company sized patrols. Tactics matured from static fire ashore, to dynamic waterborne live fire scenarios, engaging targets within 50 meters of troops inserted ashore.[67] Orders were followed and individual junior officers and sailors craved the responsibility otherwise lacking in the large grey hull Navy.

Not only was there a dip in esprit de corps and training, the very core competencies of riverine forces were reduced in the merger. The riverine force was reduced doctrinally to a shell of its former self. A comparison of the Required Operational Capabilities and Projected Operational Environment (ROC/POE) between pre and post-merger bares striking deletions of several combat requirements. These include, but are not limited to;

> AMW 14.3/14.4: Conduct: direct/indirect fires.
> AMW 23.1/23.2: Plan/conduct/direct: advance force operations for amphibious assault.
> AMW 23.3/23.4: Plan/conduct/direct: direct action amphibious raids.
> AMW 35.1/35.2: Plan/conduct/direct: limited objective night attacks.
> INT 3.3: Conduct: clandestine surveillance and reconnaissance operations.[68]

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[67] Alan Cummings. "Farsi Island: Surface Warfare's Wake-up Call." Center for International Maritime Security, http://cimsec.org/farsi-island-surface-warfares-wake-call/26877, 2 August, 2016.
[68] Chief of Naval Operations. "Required Operational Capabilities and Projected Operational Environment for Coastal Riverine Forces." OPNAV Instruction 3501.363B, 10 April, 2014.

Additionally, the CRF ROC/POE misidentifies JTACs as the non-existent Joint Tactical Area Communication Systems and Foreign Internal Defense (FID) as Fleet Intelligence Detachment. Riverine JTACs were calling in airstrikes in Iraq as late as 2011, and by 2014 they were part of a force incapable of sorting out the acronym, clearly highlighting the CRF's inability to grasp the context in which their forces must operate to competently effect the battlespace.[69]

The merger and riverine operations atrophy are so concerning because it took the Navy four years after the initial invasion of Iraq to field ready forces. A single crewman had to undergo several months of training including the Expeditionary Combat Skills Course, Riverine Crewman Course, and a seven-week infantry school courtesy of the USMC, leveraging the experiences of the afore mentioned SCC. These training requirements only represent the baseline skills necessary to forge a crewman. Additional follow on schools included the Riverine Unit Leaders Course, VBSS training, Designated Marksman, Expeditionary Small Arms Marksmanship Instructor, and JTAC qualifications. The training provided by the USMC and several joint schools enabled the Navy's riverine forces to integrate with their sister services in conventional and SOF support. Even with that, the interoperability of the fledgling riverine squadrons in Iraq was not seamless. Riverine forces integrated relatively well with the USMC because this was included in their initial CONOP.[70] However, they struggled to link brown water to blue water sufficiently for the Navy's leadership.

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[69] Alan Cummings. "Farsi Island: Surface Warfare's Wake-up Call." Center for International Maritime Security, http://cimsec.org/farsi-island-surface-warfares-wake-call/26877, 2 August, 2016.
[70] Robert K. Ackerman. "Riverine Challenges Mirror Joint Operations." Signal, and Armed Forces Communications & Electronics Association Magazine online, https://www.afcea.org/content/riverine-challenges-mirror-joint-operations, July, 2007.

A major stumbling block was the differences in supportable technology on small boats. Proper C4I (command, control, communications, computers, and intelligence) is difficult to achieve due to the limited space, power sources, and weight bearing capacity presented by a riverine assault boat. Not only were the boats themselves unsuitable for similar communication equipment as destroyers and aircraft carriers, but their operating environment is more austere, including canals and waterways marred by overhanging foliage canopies, obscuring radio frequency.[71] Even after waiting four years to provide vital riverine capability, they Navy still struggled with C2 once in theater. Given this time lapse in need and initial operating capability, the Navy must maintain a viable riverine component permanently.

The Navy recognized their brown water deficiencies as early as 1990 after disbanding the riverine forces with the conclusion of Vietnam. History's greatest and most powerful maritime force, the US Navy, was incapable of power projection up river. The deficiency was once again realized in 2003 during the outset of OIF, and it took the Navy four years to field a viable riverine force. The RIVRON's performance in Iraq was admirable, but the Navy lost their appetite to fund and perform a littoral mission after only a few short years. The merger between riverines and maritime security forces watered down the Navy's brown water capability and capacity. Bolstering and revitalizing riverine forces to the standards met during the height of OIF must be a vital component of America's future maritime strategy. Riverines provide the ability to

[71] Robert K. Ackerman. "Riverine Challenges Mirror Joint Operations." Signal, and Armed Forces Communications & Electronics Association Magazine online, https://www.afcea.org/content/riverine-challenges-mirror-joint-operations, July, 2007.

compete in new generation warfare and conflict below the threshold of war, to include opposition of both Russia and China.

Chapter 3: Future Force Employment and Recommendations

Irregular Warfare:

The US Navy is not challenged on the open ocean, regardless of any comparisons drawn between near peer competitors. Blue water maritime dominance is squarely in the lane of the US Navy, but true domination starts up river, through the littorals, and across global sea lanes. Nation states and non-state actors have not, and likely will not, risk open sea battle with the US, and thus maritime competition and hostilities will exist on a spectrum below the threshold of war. No single nation or coalition can match the might or experience of the American military, especially on the high seas.[72]

The outcome of maritime warfare is predictable due to US preeminence, thus American adversaries are morphing the battlespace, decreasing the likelihood of a conventional conflict.[73] The characteristics of war are changing and new wars are on the ascent due to globalization, new warfare, and the rise of non-state actors. War is still a relevant term in the contemporary environment, and although not extinct, it is an endangered species as new warfare emerges. War, as understood in common vernacular, exists on a spectrum of conflict as a narrow sliver at the extreme far end.

The predominant theory of war through the 20th century centered around legitimized armed conflict between states to defeat the enemy on a battlefield, combining the theories of Clausewitz and Quincy Wright.[74] Although, this certainly is war, its nature is undergoing a metamorphosis. In stark contrast to the notion of old wars, states

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[72] Herfried Münkler, *The New Wars*, trans. Patrick Camiller (Cambridge: Polity Press, 2002), 25.
[73] Jan Angstrom and J.J. Wider, *Contemporary Military Theory: The Dynamics of War* (New York: Routledge, 2015), 17.
[74] Karl von Clausewitz, *On War*, Everyman's Library text, (New York: Random House, 1993), 719.

no longer retain legitimacy because they have lost their monopoly on violence as new forms of warfare emerge.[75] The Clausewitzian Trinity of reason, chance, and emotion has given way to identity, actors, and people's fears or hatred. New wars are fought by networks of state and non-state actors, enacting violence against largely civilian populations rather than focusing on the enemy's army in the field.[76] Wars pitting states against one another has been replaced by politics of identity and decentralized violence exacerbated by transnational criminal organizations, diaspora populations, refugees, and a global media.[77] Due to the new characteristics of war, resolution comes from the involvement of humanitarian and non-governmental organizations, as opposed to states themselves. New wars are typically directed against civilians, so the need has arisen for enforcement of cosmopolitan norms, such as international humanitarian and human rights laws, rather than peace enforcement between states.[78]

Globalization has a major impact on the shifting characteristics of war through integration and inclusion and subsequent fragmentation and exclusion from the state.[79] Globalization is reshaping the world by limiting state's ability to enact its will and even maintain its geographical sovereignty.[80] The borders of states are eroding, and though not yet irrelevant, political geography is giving way to functional geography.[81] The free flow of ideas and shared ideology can form stronger bonds than any manmade

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[75] Mary Kaldor, *New and Old Wars: Organized Violence in a Global Era*, 3d ed. (Cambridge: Polity Press, 2012), 122.
[76] Kaldor, New and Old Wars: Organized Violence in a Global Era, IV.
[77] Ibid, 185-6.
[78] Ibid, 132-3.
[79] Ibid, 186.
[80] Münkler, The New Wars, 9.
[81] Parag Khanna, Connectography, (New York: Random House, 2016), 15.

geographic features. Riverine units are capable of operating and patrolling ambiguous geographic regions and providing self-protection if encountering hostile forces.

Embracing new war is a departure from traditional US military dogma centered around a Clausewitzian or Mahanian notion of war. Trusting in the wisdom of a man two centuries deceased is convenient and reassuring, but a flaw in current US strategy. To alleviate this blind spot, the US must first comprehend and accept the tenets of new war, then engage in all domains. Forty percent of the world's population lives within 60 miles of the coast, and the Navy's riverine force is the most capable of impacting these regions.[82] The Navy must engage in the littorals and conduct IW.

Even as major combat operations have ceased in both Iraq and Afghanistan, riverine forces are just as relevant in today's battlespace. IW is no longer resigned only to SOF, the entire joint force is responsible for these threats.[83] In order to counter the cunning, patience, and resourcefulness of IW threat actors, the US and its allies must retain versatile and expeditionary forces, such as riverines. Otherwise, the maritime domain will open uncontested maneuver space for the enemy, and provide operational conduits.

Extremist organizations in the Middle East and narco-terrorists in South America have created a similar symbiotic relationship as violence and corruption has in Africa.[84] Infrastructure plagues the African continent and the lack of roads can push violent extremist organizations inland and upriver while forging themselves river lines of

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[82] United Nations. "The Ocean Conference Factsheet: People and Oceans." Available at: https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf, 5 June, 2017.
[83] J. A. Cummings, Jr. "A Riverine Approach to Irregular Warfare." Proceedings, vol. 140, 1 (2014).
[84] Ashley Neese Bybee, "The Twenty-First Century Expansion of the Transnational Drug Trade in Africa," *Journal of International Affairs*, Fall/Winter 2012, 70.

communication. A single riverine platoon is capable of deploying, living, training, and operating with their host nation forces.[85] This gives the Combatant Commander an agile and responsive task unit with a minimal footprint. Over a deployment, the platoon can train to the level of their partners and tailor tactics, small arms, maintenance, and logistics. This would alleviate the strain on the already overtasked NAVSPECWAR community, especially considering the entire SWCC is comprised of only 600 operators.[86] Plus, their unique talents would be lost training security forces incapable of performing SOF boat missions, such as operating covertly in periods of darkness. SWCC is better suited to pairing with forces like the Nigerian Special Boat Unit, while riverine squadrons remain an ideal fit for conventional units.[87]

Patrolling rivers in combination with our partners demonstrates a commitment to our allies, and bolsters their organic security forces. Additionally, the platoon could act as a quick reaction force for SOF in the AO. Riverine forces are specifically important in Combatant Commands who are in dire need of allocated forces, namely AFRICOM and SOUTHCOM, especially in this resource constrained environment. A RIVRON can have a tremendous impact on partner nations, ultimately creating a force multiplication effect. In a single six-month deployment, RIVRON 3 provided 1,200-man days of conventional riverine training spanning six countries.[88] Most notably, they assisted in the revision and organizational improvements in the 14,000-man riverine wing of the Columbian Marine Corps, the world's largest such force.

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[85] J. A. Cummings, Jr. "A Riverine Approach to Irregular Warfare." Proceedings, vol. 140, 1 (2014).
[86] US Navy. "Special Warfare Combatant Craft Crewman Careers." Available at: https://www.navy.com/careers/special-warfare-combatant-craft-crewman, 19 November, 2019.
[87] J. A. Cummings, Jr. "A Riverine Approach to Irregular Warfare." Proceedings, vol. 140, 1 (2014).
[88] Ibid.

Countering Russia:

Actors like Russia have determined that the most prudent manner to compete with the US is by working around traditional American sources of national power. In fact, Russia openly stated the means by which they are engaging the US. The Russians issued the Gerasimov Doctrine and clearly delineated their intention of operating in psychological and information space as a means of new generation warfare. New generation warfare rightly identifies that conflict outcomes are decided during periods when actions exist under the threshold of war, and the use of the military is acceptable without public acknowledgement of hostilities.[89] Russia acts under the threshold of war because they cannot risk open aggression with the US. However, over time, through their use of psychological and information warfare, they can influence a stronger adversary. A simple, yet glaring example is how the Russians encroached in Syria. They confuse, harass, and disrupt opponents in physical and psychological space at the tactical level to achieve their strategic ends. Russia is not preparing for decisive battle, they are reshaping the battlespace by synchronizing the employment of both regular and irregular forces. They lead with soft power in order to shape the battlespace, even inviting the media to film their troops disseminate humanitarian aid.[90] This demonstrates Russia's understanding that war unfolds in the media.[91] Conversely, the US waits to react with hard power at the point of incident.

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[89] Michael Kofman, "The Moscow School of Hard Knocks: Key Pillars of Russian Strategy," *War on the Rocks*, (November 21, 2019), accessed from: https://warontherocks.com/2019/11/the-moscow-school-of-hard-knocks-key-pillars-of-russian-strategy-2/.

[90] Christopher Phillips, *The Battle for Syria: International Rivalry in the New Middle East* (New Haven: Yale University Press, 2016), 218.

[91] Jan Angstrom and J.J. Wider, *Contemporary Military Theory: The Dynamics of War* (New York: Routledge, 2015), 17.

The US is mired in competition with Russia, but refuses to engage in the appropriate battlespace through a lack of understanding. A small, agile, self-contained force like a riverine platoon is the ideal candidate to counter Russian efforts in the littoral environment, especially in the vicinity of Crimea. They can easily patrol the Black Sea and partner with Ukrainian Forces. However, the US wants to engage the enemy on a battlefield and win the war in a decisive battle, just as Clausewitz would suggest, but Russia will not indulge such desires. Instead, Russia enacts warfare on the cheap and limits the impact to fewer people through emerging technology, making war a "spectator sport."[92] This highlights war's everchanging character. Still, the US only recognizes the notion of war as overt violence between states, and remains uncomfortable with the reality of 21st century warfare as introduced by the Russians. Moscow applies the new wars conceptual design of influencing the population rather than direct force-on-force contests, seeking to win without overly committing resources.[93] The inexpensive and small force package make riverine forces an attractive and viable platform to counter Russian influence in the littoral environment.

Countering China:

China challenges "American power, influence, and interests, attempting to erode American security and prosperity."[94] This statement is particularly true when applied to the insidious nature of the Belt and Road Initiative (BRI) or One Belt, One Road. The maritime portion of belt and road initiative is commonly referenced as the Silk Road. The BRI is an umbrella initiative spanning a multitude of projects designed to promote

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[92] Ibid.
[93] Michael Kofman, "The Moscow School of Hard Knocks: Key Pillars of Russian Strategy," https://warontherocks.com/2019/11/the-moscow-school-of-hard-knocks-key-pillars-of-russian-strategy-2/
[94] 2017 National Security Strategy, 2.

the flow of goods, investment, and people. The new connections fostered by the BRI could reconfigure relationships, reroute economic activity, and shift power within and between states. Announced in 2013, the BRI aims to strengthen China's connectivity with the world. It combines new and old projects, covers an expansive geographic scope, and includes efforts to strengthen hard infrastructure, soft infrastructure, and cultural ties. The BRI touches 4.6 billion people, accounting for 61% of the world's population, and resulted in $6 trillion in trade with China and her partners over the first 4 years of existence.[95]

> The BRI's four stated goals are; improving intergovernmental communication to better align high-level government policies like economic development strategies and plans for regional cooperation; strengthening the coordination of infrastructure plans to better connect hard infrastructure networks, like transportation systems and power grids; encouraging the development of soft infrastructure such as the signing of trade deals, aligning regulatory standards, and improving financial integration; bolstering people-to-people connections by cultivating student, expert, and cultural exchanges and tourism.

Nicholas J. Spykman hypothesized that the coastal belt surrounding Eurasia was the key to global control. The Rimland, as he described it, bares the global demographic weight, equipped with vast natural resources, and is plush with industrial development opportunities.[96] China is imbibing the lessons of Spykman by vying for control over the sea spaces and over the Rimland, starting with East Asia and Pakistan.[97] The intent is to extend and cover the coastal belt of Eurasia and Africa, butting up against the US strategy of not allowing a Eurasian hegemon.[98]

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[95] Andrew Chatzky and James McBride. "China Massive Belt and Road Initiative." *Council on Foreign* Relations. Available at: https://www.cfr.org/backgrounder/chinas-massive-belt-and-road-initiative, 28 January, 2020.
[96] Lalit Kapur. "Geopolitics of the Belt and Road Initiative: Maritime Imperative for India." *Delhi Policy Group*, Vol 2, Issue 7, 26 July, 2017.
[97] Ibid.
[98] Ibid.

Given the success and aspirations of the Silk Road, the importance of having a riverine capability becomes even more apparent. In Southeast Asia alone, there are more than 144,740 miles of riverways.[99] The Navy would prefer to rely on the MK VI patrol boats and the Littoral Combat Ships (LCS), but they do not have the mobility required to maintain these lines of communication and influence the populace.[100] By contrast, a RPB has a 2-foot draft that decreases to only 9 inches at speed, giving it the ability to operate in crammed inlets, even the most nimble surface vessels do not dare traverse. Of course, operating competently in these areas takes the training and skillset jettisoned by the Navy after decommissioning their RIVRONs. The CRS community has already demonstrated the inability to perform base tasks such as navigation and communications, as referenced earlier in Chapter 2.

[99] Ryan C. Law. "The Coastal Riverine Community Needs Attention." *Proceedings*, vol. 142, 8 (2016).
[100] Ibid.

Conclusion

The introduction and dynamic application of US riverine forces began with the Revolutionary War and continued through OIF. History has proven the necessity of riverine operations, and the future demands a capable force ready to execute security cooperation, IW, and counter state actors. The emphasis and enthusiasm for riverine operations waxes and wanes due to the inclination of Navy leadership. However, the need persists, and dogmatically adhering solely to Mahanian principles of sea power is a flaw in the modern Navy. Navy leadership desperately clings to the notion that their finest hour is on the horizon, and a decisive sea battle is imminent. Astute modern war theorists say otherwise, and new wars are on the rise. Traditional US military might has yet to be challenged, rather adversarial forces circumvent US strengths in order to operate in a more advantageous space. For instance, between Russia and China, they have two combat capable aircraft carriers matched against 11 US. This is only one metric to define sea power, but the overwhelming imbalance favors the US, making decisive battle at sea unlikely. Rather, the Navy must get their hands dirty and meet adversaries in the right space. There is nothing dirtier than a brown water sailor. And no better platform to operate in the littorals than riverines.

In 2005, the CNO Admiral Mike Mullen opined that the "Navy is missing a great opportunity to influence events by not having a riverine force."[101] It took the Navy nearly two years after that statement, to build a capable riverine force. The Navy was not ready to fight the nation's wars and continually compounds the process by ignoring

[101] J. A. Cummings, Jr. "A Riverine Approach to Irregular Warfare." *Proceedings*, vol. 140, 1 (2014).

riverine forces. The merger with MESF was the deathblow of competent riverine forces. The three remaining companies within the Navy's arsenal are one sixth the force size as their highwater mark during the OIF resurrection, and far less capable than their not so distant ancestors.

The time and resources spent to grow a viable riverine force continually vexes the Navy. The Navy must avoid repeating the same mistakes in order to preserve their hold on maritime superiority. The reality is that no sister service, or adversary in the world can challenge the Navy's supremacy on the high-seas. However, the Navy would ingratiate itself far more to the joint force by expanding its capability to operate up river. The perception regarding OIF is that aside from the NAVSPECWAR, Seabee, and EOD communities, the Navy was the late to the fight. A resurgence in riverine capacity and capability will not alone resolve this perception. In order to most appropriately employ riverine task units, echelon IV and V commanders must avoid the temptation to use them solely as mobile security or a QRF.[102] Riverine forces are agile and scalable enough to perform tasks in every geographic combatant command. They can perform security cooperation and FID to enhance IW. Better yet, riverine forces provide a unique wrinkle to other traditional forces simply due to their unique maritime angle. When partnering with host nation forces, RIVRONs can teach and employ skills never seen in country because they are the only forces capable of performing conventional riverine missions.[103] More often than not, the host-nation funds riverine deployments, making the operating cost minimal to the Navy.[104]

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[102] J. A. Cummings, Jr. "A Riverine Approach to Irregular Warfare." *Proceedings*, vol. 140, 1 (2014).
[103] Ibid.
[104] Ibid.

Even after the riverine MESF merger in 2013, Admiral Jonathan Greenert and General James Amos advocated for a robust riverine capability to operate in concert with a Marine Air Ground Task Force (MAGTF).[105] However, the limited capacity and reduced competence of today's riverine forces made those assertions null and void. The Department of the Navy failed both the CNO and Commandant of the Marine Corps by once again refusing to grasp the notion that preservation of the riverine force trumps resurrection.

[105] ADM Jonathan Greenert (USN) and GEN James Amos (USMC). "A New Naval Era," U.S. Naval Institute *Proceedings*, vol. 139, no. 6 (June 2013), 16–20.

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Vita

CDR Ryan Markey is a Joint Advanced Warfare School student at the Joint Forces Staff College, Norfolk, VA. Upon graduation he is reporting to USSOUTHCOM as a maritime planner. He previously served as a Branch Chief at the United States Transportation Command (USTRANSCOM) in the Financial Management and Resourcing Directorate. Prior to his joint staff tour at USTRANSCOM, he was the Operations Officer and detachment Officer-in-Charge (OIC) for Special Projects Patrol Squadron Two providing ISR while operating in the CENTCOM, PACOM, AFRICOM, and EUCOM AORs. CDR Markey is a Fleet Replacement Squadron Instructor, and NATOPS Evaluator compiling over 3,000 flight hours in three separate P-3 series aircraft, to include the EP-3, P-3C, and SP-3. In addition to aviation duties, CDR Markey was a Coastal Riverine Squadron Company Commander. While deployed to the 6th Fleet AOR he was the CTG 68.4 OIC responsible for the execution of littoral AT/FP missions.

He commissioned via OCS in 2003 after receiving a Bachelor of Arts in Political Science from University of Mary Washington. Additionally, he received a Master of Science in Intelligence Management from Henley-Putnam University, attended the U.S. Army Command and General Staff College receiving JPME-I, and holds a Master of Science in Criminal Justice from Bowling Green State University.