Riverine Warfare

Kevin Rowlands
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Exploiting a Vital Maneuver Space

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There was usually too much water for the soldiers, but not enough for the sailors.

VICE ADMIRAL WILFRED NUNN, 1932

Despite a long history, riverine operations have received only scant attention from the academic community and military analysts. The little writing that exists on the topic tends to be either personal memoir or tactical instruction, with serious analyses few and far between, and then often hidden away in more-general texts on amphibious warfare. This article sets out to explore this unfamiliar yet vital territory to determine the relevance of riverine operations to contemporary and future military campaigns. It is pertinent now, as budget allocations once again are reviewed and NATO’s amphibious doctrine is refreshed.

The article approaches the subject in three parts, each building toward an understanding of riverine operations in the modern context. First, the nature of the riverine environment itself is discussed, using a classical geopolitical approach to explain where the world’s major riverine areas are and why they are important in security terms. Second, a historical review of military operations in the riverine environment is presented, using case studies that range from the earliest recorded naval battle, in the thirteenth century BCE, to the present day. The case studies highlight numerous applications of military power, and consequently they help to build a general understanding of what riverine operations are. (It is worth noting at this juncture, however, what riverine operations are not. This article investigates naval and military operations from and on rivers; it does not consider the methods land forces use to cross riverine obstacles, and these purposely are omitted from the commentary.) The third part combines the earlier findings with contemporary commentary.
A final section offers some conclusions. In particular, riverine environments have the potential to become a critical maneuver space in the twenty-first century. Global strategic trends, from globalization to population migration and urbanization, place these riverine systems at the forefront of likely zones of conflict. Therefore it is simply prudent militarily to possess the ability to operate and maneuver effectively in such areas.

UNDERSTANDING THE RIVERINE ENVIRONMENT: THE GEOPOLITICAL REALITY

To understand the importance of the riverine environment, one first must understand the river’s place within the global context. Geopolitics had its genesis as a serious discipline in the late nineteenth and early twentieth centuries, and among its first and most important writers—although he did not use the term geopolitics himself—was Sir Halford Mackinder. Mackinder presented an analysis of the world very different from the views prevalent at the time. He made continent-wide sweeping generalizations, and in doing so emphasized the "physical control, rather than the causes of universal history" in his conceptual thinking. In 1904, he published a seminal paper entitled "The Geographical Pivot of History," in which he argued that the world had become a closed political system and that taking a broad, global view was necessary to understand it. In the political geography of the time, the key area, which Mackinder called the “heartland” or “pivot,” was thought to be the sparsely populated center of the Eurasian landmass, around which were the marginal coastal states and islands, which he placed in an “Inner Crescent” and an “Outer Crescent.” To Mackinder, the heartland was the region of strategic importance, and he is remembered best for his later statement that “[w]ho rules the heartland commands the World Island; who rules the World Island commands the World.”

Alfred Thayer Mahan, the great American naval strategist and historian who wrote at around the same time as Mackinder, also can be considered a geopolitical commentator. Contrary to Mackinder’s hypothesis, a central strand of Mahan’s work was that not territorial control but access to and control of strategically important areas was the ultimate requirement for national growth. To Mahan, the heartland was less critical than the coastal areas on its periphery. This grand, global analysis was developed further by later scholars of realist geopolitics such as Nicholas Spykman, who coined the term rimland for those areas on the maritime fringes. In common with Mahan, Spykman considered these areas to be the most significant geopolitically because they contained the greatest concentration of human and physical resources and lay at the junction of the continental and maritime worlds. As such, they were the key to the balance of world power. Therein lay their security problem: they had to “fend off threats..."
The figure below shows Spykman’s map of the primary rimland, which he also termed the *Eurasian conflict zone*. Interestingly, this conflict zone, first identified in the 1940s, is striking in its similarity to Mackinder’s inner or marginal crescent. Contemporary readers will not be surprised to find that it is almost identical to the new “arc of instability” to which U.S. Secretary of Defense James Mattis referred in a speech to the Munich Security Conference in February 2017.

The relevance of grand geopolitical theory in the context of this article, of course, is that this contested rimland, this arc of instability, the strategic and tactical focus for Western defense planners, is also the home of the world’s great riverine systems. It was out of the alluvial basins of four great rivers—the Tigris-Euphrates in Mesopotamia, the Nile in Egypt, the Indus in the subcontinent, and the Yellow River in China—that the great civilizations arose.

For much of human history, rivers provided the only means of transport for exploration and commercial exploitation of land; the colonization of Africa in the nineteenth century, for example, would not have been possible without navigable rivers. The British expanded their empire in the west via the Niger and Gambia Rivers, and the Belgians used the Congo to bring European control to much of central Africa. As the colonial powers spread their influence around the world, rivers commonly were used as boundaries, often because they were the only geographical features marked on maps. Today, approximately 30 percent of the
world’s 158,554 miles of land borders are made up of waterways—and these can be the cause of dispute.9

It would be wrong to assume that the importance of rivers as a means of communication has lessened in the twenty-first century. The Amazon remains navigable by oceangoing ships for 2,300 miles, the Chang (Yangtze) for 620 miles, and the Saint Lawrence for 1,300 miles, and all are vital to the flow of trade.10 And clearly, not all riverine trade is legitimate; for example, it was estimated just over a decade ago that rivers carried over 80 percent of drug-related traffic in Colombia.11

The water from rivers provides a vital life support for the populations living near them. Millions of square miles of land globally are permanently irrigated by river waters; much of this expanse is in the densely populated regions of East and Southeast Asia.12 Rivers also provide the source for much energy generation; hydroelectric power plants currently supply 13 percent of the total annual electricity needs of the United States.13 However, this degree of successful exploitation is not universal, and significant potential exists in the untapped resources of central and southern Asia, Africa, and South America. The extensive use of rivers and riverine areas has led to very significant environmental degradation in some cases, and the potential for more. Commercial navigation and dredging have affected rates of erosion and have impacted agriculture; pollution has resulted in severe risks to health; and the industrial use of rivers, from the taking of cooling water to the discharge of effluent, has led to changes in ecosystems that affect the ecologies and food chains of entire regions.
The geopolitical reality is that the riverine environments of the world tend to be the areas that are susceptible to the greatest shock in security terms. They are very highly populated; they rely heavily on the river waters for agriculture, industry, power, and transport; and they are both potential sources and victims of severe environmental impacts, with the accompanying risks to individual human health and societal sustainability. They also are located in strategically relevant areas—areas in which the international community has an interest in maintaining stability.

OPERATIONS IN THE RIVERINE ENVIRONMENT—THE HISTORICAL CONTEXT

In the preindustrial age, when the world was in large part subject to the dominion of empires, wars tended to be fought for control of territory. Navies extended the influence of their political masters to places inaccessible by other means, and in so doing they long have fought on inland waters. Probably the first recorded naval battle in history was that between the Egyptians and the invading “Sea Peoples” in the thirteenth century BCE. The invaders used various routes into Egypt, including an attack through the tributaries in the Nile delta, but were defeated on the rivers and on land by the defending Egyptian forces. The two sides came face-to-face on the waters of the Nile and engaged in battle; in today’s phraseology, this early example of riverine warfare between two opposing armies can be classified as a major combat operation.

In the American War of Independence (1775–83), extensive riverine operations took place. In 1775, American forces conducted river patrols around Lake Champlain in the New England–Canada border region and gained control of the waterways, preventing British forces from maneuvering in an area without roads. The Americans then used the waterways as a means of transportation for land forces in the invasion of Canada; the multiple axes of advance bested the British defenses, Montreal was taken, and the Continental forces under the command of Benedict Arnold reached as far as Quebec. Area control was exercised and, logistically, the use of the riverine environment for troop transportation was entirely successful.

The operational movement of armies by river was a significant feature in the American Civil War (1861–65) as well. General Ulysses S. Grant used established river networks to place his army of 18,000 men close to Petersburg in 1864, gaining a “tremendous advantage” over General Robert E. Lee’s opposing forces. Both Union and Confederate forces deployed significant numbers of ships and boats on the rivers and deltas of the states, including well over a hundred vessels, some of them ironclads, on the Mississippi alone. The city of New Orleans fell to Union naval forces attacking from the river and, for the first time in riverine
warfare, the Confederate navy put significant emphasis on denying its enemy the use of the riverine environment by irregular means, including mining and the use of barrages and other obstructions. Ultimately, however, Union riverine forces gained the upper hand and achieved control of the major waterways—with long-lasting strategic effect. Their control of the Mississippi effectively cut the Confederacy in two and severed its vital supply lines from the West and South. The American Civil War showed the utility of riverine forces in major combat operations, troop transportation, the denial of enemy maneuver space, and the disruption of supplies.

British riverine operations followed a similar pattern in the latter part of the nineteenth century. A Royal Navy flotilla accompanied Lord Kitchener on his expedition up the Nile during the 1898 reconquest of the Sudan after the Mahdist Revolt, performing a number of functions in support of the land forces. The flotilla was used first in a logistical capacity, transporting men, weaponry, and provisions from Egypt, and then very effectively as field artillery, bombarding dervish positions near the river. Because of its asymmetry and relatively low-intensity nature, the Mahdist Revolt cannot be classified as a major combat operation. However, it is perhaps indicative of a shift along the spectrum of conflict toward counterinsurgency, as the preindustrial age merged into the industrial.
Riverine operations did not feature to a significant degree in the primary theaters of World Wars I and II, the two major interstate conflicts of the industrial age. There could be a number of reasons for this, not least the descent into trench warfare during the 1914–18 conflict in Europe and the greater use of improved motorized vehicles for transport in 1939–45. In addition, in the major combat operations of the industrial age, air superiority was essential; in general, riverine operations took place only in areas in which air superiority had been won or, at least, where it was denied to the enemy. The trend, therefore, was for operations on rivers to be increasingly on the periphery of conflicts, in terms of both geography and intensity.

However, there are good examples of riverine operations taking place during and between the world wars, and Vice Admiral Wilfred Nunn gave an excellent personal account of the British action against Ottoman forces in Mesopotamia during the First World War in his memoir *Tigris Gunboats*. Although geographically disconnected from the main battleground of Europe, the war in the Middle East was of strategic importance to all sides, with “Turkey, Iraq and Britain . . . [in] . . . a battle for the control and ultimate utilization of not only the waters of the [Tigris and Euphrates] rivers but . . . for virtually all the natural resources of the region.”

The complex theater of the Middle East was one in which major interstate war, colonial liberation movements, and the protection of key economic infrastructure were conducted side by side; in effect, the war in Iraq oscillated between major combat and a series of running skirmishes. Nunn explains how oceangoing warships, redirected from India, operated in the rivers of Iraq during the Mesopotamia campaign. They were used in a variety of tasks, from the insertion of advanced forces for covert operations, such as cutting Turkish communication lines, to the landing of the main British expeditionary force in 1914, and subsequent patrols along the main thoroughfare of the desert. Analysis of Nunn’s account shows riverine operations used for prelanding and amphibious assault operations, support to land forces, and assistance to the anti-Ottoman insurgency conducted by the indigenous Arab populace.

Although riverine operations did not become divorced completely from major combat operations, they clearly were trending from higher to lower intensity along the spectrum of warfare. One important aspect of Nunn’s book is the emphasis he gives to the necessity for close cooperation between land and maritime elements operating in a riverine environment.

As predicted by the geopolitical overview outlined earlier, many of the armed independence movements that arose in the aftermath of the Second World War took place in the rimland, the regions of the world with extensive riverine
environments, none more so than Southeast Asia. During the decade of the Malayan Emergency (1948–58), naval operations deep into the jungle by river provided both fire support to and transport for members of the predominantly land security forces and were of considerable importance in this classic counter-insurgency campaign.\(^25\)

Similarly, during the Indonesian “Confrontation” (1962–66) rivers often provided the only means of access through difficult terrain. Riverine operations there ranged from routine logistical resupply to opposed amphibious raids against rebel groupings and “hearts and minds” patrols to demonstrate the presence of the legitimate authority in difficult-to-reach areas.\(^26\) In both Malaya and Indonesia there was little or no direct threat from the air, and the operations the riverine forces conducted formed an integral part of what became British counterinsurgency tactics.

Perhaps the zenith of industrial-age riverine operations came in the French and American campaigns in Vietnam from the late 1940s until the mid-1970s; it was certainly the period that produced the greatest volume of written accounts. The commentators, be they servicemen who experienced the operations themselves or academics analyzing the period, tell essentially the same story. Japanese, French, Vietnamese, and American activity on the waterways of Southeast Asia

FIGURE 4
USN CRAFT IN OPERATION GAME WARDEN, CA. 1968

was fundamentally the same, differing only in scale according to the requirements of the time.\textsuperscript{27} Perhaps the role that riverine forces performed is explained best by the varied types of vessel employed: patrol boats, assault craft, troop carriers, flamethrowers, minesweepers, and command-and-control units.\textsuperscript{28}

The necessity for riverine operations in Vietnam becomes clear when its geography is considered. The Mekong Delta took up one-fifth of South Vietnam’s area, and there were few roads but over 2,500 miles of man-made canals and natural waterways.\textsuperscript{29} Writing in 1973, Major General William B. Fulton, USA, stated that it was “not possible for a land force to operate in the Mekong Delta in 1965 without some means of maneuver on water.”\textsuperscript{30}

Fulton, who was instrumental in the establishment of the U.S. riverine force in the mid-1960s, explains that the initial concept was to use its craft as a mobile base for troops, capable of maintaining a brigade-sized formation in the delta for up to six months.\textsuperscript{31} He goes on to describe some of the wider utility of such a joint capability: “This Army and Navy force of approximately 5,000 men capable of combat and containing within itself combat service support could be moved from 100 to 200 km in a 24-hour period and could then launch a day or night operation within 30 minutes after anchoring; its true potential is apparent.”\textsuperscript{32} Fulton gives numerous examples of the effectiveness of a low-footprint force, from fire support to strike operations against enemy bases that “in some instances had not been penetrated for two or three years.”\textsuperscript{33}

However, others have argued that the true potential of the riverine force in Vietnam was not in its offensive capability but in its ability to prevent Vietcong supply operations. The coastal patrols of Operation MARKET TIME, by the U.S. Coast Guard and Navy, and the river patrols of Operation GAME WARDEN in the late 1960s were not mounted merely to clear the delta of enemies but to deny them use of it.\textsuperscript{34} This distinction between destroying an enemy and curtailing its activities points to a niche role that riverine operations can fulfill in the wider prosecution of a campaign.

After the Tet Offensive in 1968, GAME WARDEN and MARKET TIME were amalgamated and became the Southeast Asia Lake, Ocean, River, and Delta Strategy, known as SEALORDS. The emergence of a tactical doctrine of interdiction, pacification, and area clearance through limited offensive action started in the early days of the Vietnam engagement and its evolution continued through the later stages of the war and, by default, into the postindustrial era to today.

Despite the importance of the joint action in the Mekong Delta to the overall campaign, little effort went into analyzing the lessons of Vietnam riverine operations and formulating them for application to future conflicts.\textsuperscript{35} The capability that had been built up in time of need largely atrophied during the final fifteen years of the Cold War. However, a period of increased international
interventionism and a surge in peacekeeping operations following the demise of the Soviet Union led to a renewal of interest in the riverine environment in the early 1990s. To some, the peacekeeping experience was an indication of the likely shape of future conflict, and the subsequent bias of attention meant that certain capabilities were “rebranded” to fit the new requirement. James D. Kiras, for instance, was one of a very few writers in the immediate post–Cold War period to undertake a review of the American riverine experiences in Vietnam, but he did so to draw lessons from the “wealth of tactical and operational experience” to show that the riverine capability could be applied to peacekeeping.\textsuperscript{36}

A good example of the early post–Cold War peacekeeping effort, and one that involved a significant riverine contribution, was the UN Advance Mission in Cambodia, 1991–92, and UN Transitional Authority in Cambodia (UNTAC), 1992–93. UNTAC was born out of the Paris Peace Accords of 1991–92 and aimed to bring order to Cambodia after years of civil war.\textsuperscript{37} One part of the military effort was the water-based patrolling of the coast and rivers, which involved fifteen coastal vessels, eleven landing craft, and over fifty small boats.\textsuperscript{38}

Kiras states that “those navies which maintain substantial riverine forces are, not surprisingly, those with internal security problems and major waterways.”\textsuperscript{39} Clearly, internal security problems can take many forms, and a different application of riverine operations has been seen in Colombia’s counternarcotic and counterinsurgency campaigns. Developed since the 1950s, Colombia’s riverine force has grown to be the largest in the world. It was designed to combat both the drug cartels operating in the country and the insurgent Revolutionary Armed Forces of Colombia, known as FARC.\textsuperscript{40} The Colombian marines built a doctrine based on the core roles of riverine assault, surveillance, interdiction, and support, which has provided a high degree of success in their long-term efforts.\textsuperscript{41} The Colombian model, founded on the lessons of others, has developed into an example of best practice for nations looking to grow such a capability. However, Kiras’s assertion that riverine forces are built by those with internal security problems is due a reassessment. Postindustrial, post–Cold War focused intervention by the Western democracies, particularly the United States, has altered the shape of contemporary conflict, and there is ample evidence that riverine capabilities now are employed more broadly, as a study of Iraq shows.

The experiences of the U.S.-led coalition in Iraq from 2003 until 2010 were the catalyst for another renewal of interest in riverine operations.\textsuperscript{42} Major combat operations commenced in March 2003 but lasted just a few weeks, until the collapse of Saddam Hussein’s regime; thereafter the occupation of the country was met with sporadic cycles of relative peace, resistance, criminality, insurgency, and terrorism. The military mission in the country quickly became one of stabilization, with subsidiary operations across virtually the whole spectrum of conflict.
From the outset riverine forces were required; when hostilities commenced, the U.K. Royal Marines were involved intimately in the initial assault on the al-Faw peninsula and the subsequent patrols of the riverine environment in southern Iraq. They conducted thirty-one days of continuous boat operations over ninety miles of inland waterways, accomplished three opposed landings, and fired in excess of ten thousand rounds of ammunition.\(^{43}\) The extensive marshlands in southeastern Iraq had to be cleared of enemy combatants while the main ground forces progressed north through the country. Inshore raiding craft and hovercraft were used to good effect, providing means of maneuver in an environment unsuitable for road vehicles and over which the safety of helicopters could not be guaranteed.\(^{44}\)

Early stabilization tasking for the riverine forces after the initial combat phase ended focused on countering burgeoning criminality. A clear picture of activities on the river was built through patrol, reconnaissance, and engagement with local traders, with the result that river traffic suspected of smuggling contraband could be stopped and boarded; the mission lent effective support to the legitimate economy of the region.\(^{45}\) Other countertrafficking operations took place farther inland, in the Maysan province in eastern Iraq. Riverine forces were the only coalition contingent able to operate in the reeds and marshes of the province, which was used as a major supply route for munitions and insurgents crossing the border from Iran.\(^{46}\)

In the north of Iraq, the U.S. Marine Corps Small Craft Company (SCCO) provided the initial riverine capability after the invasion. Again operating primarily on the Tigris and Euphrates Rivers, the SCCO’s role increasingly became one of counterinsurgency, but the force’s limited numbers meant that its personnel were spread thinly throughout the country, and their opponents exploited the gaps. In 2004, U.S. forces attempted to retake the cities of Samarra’ and Fallujah, but, as one American officer explained at the time, the insurgents effectively were operating at will on the waterways. “The rivers are enemy territory and still uncontested. . . . Several different intelligence summaries indicated that the enemy forces were using the river as a primary avenue of reinforcement, resupply and egress.”\(^{47}\)

The U.S. Army and U.S. Marine Corps were able to set up traffic-control points to interdict insurgent movement on the roads and highways, but they had no capability for routine interdiction on the water. The Army’s First Infantry Division tried to procure riverine craft, specifically to employ in its sector north of Baghdad.\(^{48}\) However, as General Mattis, the commander of the First Marine Division during the battle for Fallujah, stated, “The enemy has exploited the lack of U.S. dominance in inland waterway warfare.”\(^{49}\)
The capability shortfall in the U.S. armory was acknowledged and addressed through the creation of a dedicated USN riverine group, consisting of three squadrons, as part of the Navy Expeditionary Combat Command. The naval squadrons took over for the stretched SCCO in 2007. The Expeditionary Combat Command listed the tasks that its riverine units were expected to fulfill, ranging from support to a landing force in an opposed amphibious assault at one end of the spectrum, to security assistance, interdiction, and casualty evacuation at the other. However, the riverine groups were rebranded as coastal riverine groups in 2012, with one located on each coast of the United States, but with only one riverine company per squadron.

**HISTORICAL TRENDS IN RIVERINE OPERATIONS**

The vignettes above show that during the preindustrial age riverine operations primarily were a feature of major war fighting, and that river forces were used for four broad purposes: engagement of opposing maritime forces in battle,
engagement of opposing land forces in battle from the waterways, own-forces transportation, and denial of the enemy’s transportation.

As tactics developed in the industrial age, the intensity of action necessarily drove riverine operations from the main theaters of interstate war, and their employment became centered on counter insurgency and support to land forces where little or no air threat was present. Counterinsurgency remained a theme into the postindustrial era, but the riverine environment also has seen increasing security-assistance efforts aimed at peacekeeping and anticriminality measures.

Although not perfectly linear, there has been a definite progression along the spectrum of conflict from traditional war fighting and major combat operations toward what is now called stabilization. The diagram in figure 5 illustrates this trend in graphical form. It does not situate each campaign exactly; rather, it attempts to show where the scope of each riverine operation sits along the spectrum of war. As such, it is a subjective assessment, but one generally supported by a historical analysis of riverine operations.

CONTEMPORARY RELEVANCE
As the examples provided show, the operations in which riverine forces have been involved display common, enduring characteristics, such as control of waterways, interdiction, transportation, logistics support, and presence in difficult-to-reach areas. Each of these types of operation requires similar and transferable skill sets, and each of these skill sets is useful across the spectrum of operations, from major combat to stabilization and peace support. There is therefore high potential for the broad use of riverine forces in the future, particularly in Mattis’s “arc of instability,” with the Gulf of Guinea and parts of South America as additional hot spots in which they could operate. An inability to maneuver effectively in these geographical spaces would render them no-go areas for intervention.

Activities need not require the use of force, however, and humanitarian assistance / disaster relief operations, such as facilitating the delivery of food and water to a distressed population, may be an immediate priority that civilian agencies are, for whatever reason, unable to meet. For instance, when Hurricane Katrina hit the U.S. Gulf Coast in 2005 it wreaked havoc across a wide area, flooding roads and making low-lying ground inaccessible. In an operation involving 5,600 Coast Guardsmen, the U.S. Coast Guard provided an immediate response that saved over thirty thousand people. Within hours the U.S. Navy’s Special Warfare Special Boat Team 22, based in Mississippi, was activated and was able to conduct search-and-rescue missions to deliver essential aid to stranded people. Other governmental and nongovernmental organizations were to follow, but the immediate response to the emergency fell to the armed forces.
In a very different context but equally vitally, Bangladesh formed a riverine force in 2015 to protect UN barges delivering aid to beleaguered South Sudan on the river Nile—there was no other way to get through.\textsuperscript{56} In security sector reform, riverine forces can engage in countercriminality work, assisting in ensuring the proper conduct of elections, as they did in Cambodia, and helping to train and mentor indigenous security forces, as the coalition naval advisory training teams did in Iraq. The development of the local economic infrastructure in a region of instability is primarily a civilian undertaking, but, as with all military deployments, there are circumstances in which riverine forces have a role to play. This might be in a direct manner, such as the management of harbors and waterways, or indirectly, by creating the stable conditions in which enterprise and growth can flourish.

Military operations for the Western powers over the last two decades unquestionably have been land-centric and, as Colin S. Gray warned with his concept of the “sin of presentism,” it is all too easy to assume—and all too easy to get wrong—that the future will look much like today. However, “if maps of population spread and conflict are laid upon each other, it is evident that the littoral, estuaries, rivers, and lakes are vital arteries of life and thus foci of conflict.”\textsuperscript{57} If this geopolitical assertion is accepted, then it is logical to conclude that the possession of an ability to operate and deliver effect in these environments is merely a practical expression of prudent military judgment.

The strategic importance of the world’s littoral areas is fast becoming accepted wisdom. The similarity among Mackinder’s marginal crescents, Mahan’s coastal periphery, Spykman’s rimland, and the contemporary arcs of “crisis,” “concern,” or “instability” is striking. Even a cursory glance at an atlas shows that the major river systems sit in the marginal regions between the continental and maritime worlds and are, and historically always have been, centers of population, commerce, and transportation, as well as boundaries between states and cultures. They also are a prime breeding ground for those sources of instability that the interdependent core of the international community has to tackle in defense of its own self-interest; human migration, environmental degradation, and economic stagnation are just some examples of processes that can lead to failed states and fragile regions.

There is clear evidence of naval warfare on rivers from the very earliest recorded battles to the present day. Examination of the nature of riverine operations through the ages makes it possible to identify several common denominators. In particular, the employment of riverine forces has been largely consistent, whether in war, counterinsurgency, or security assistance. Their utility has been demonstrated time and again in the areas of transportation, especially in difficult-to-reach areas; logistical support to land forces; and the denial of vital
maneuver space to an enemy. Although there is not a perfectly linear progression, there has been a definite trend toward riverine operations being conducted at the lower-intensity end of the conflict spectrum. Historically, riverine operations have a distinguished pedigree, and there is no evidence to suggest this has come to an end.

However, although navies long have undertaken riverine operations, the maintenance of such a capability on inland waterways has been inconsistent and episodic, especially during the era of industrial warfare. In most cases, riverine operations have been mounted on an ad hoc basis and the capability has been disestablished on completion.58 Choosing to break this cycle by maintaining a base level of capability available to be employed whenever required is clearly a policy decision, and one dependent on numerous factors, not least perceptions of threat, the level of existing commitments, and the availability of resources.

The principal conclusion therefore must be that riverine operations have a fundamental relevance to contemporary and future campaigns. They may not be the only maritime contribution, but they have the potential to provide very significant contributions to military involvement—in particular, stabilization and development. Some countries, such as the United States, have invested in the maintenance of a rudimentary riverine capability, clearly seeing the riverine environment as a likely and critical maneuver space in the future. Those other Western, liberal democracies that actively continue to pursue interventionist foreign and defense policies in the interdependent world would be prudent to review the evidence and do likewise.

NOTES

2. Gearóid Ó Tuathail, "Thinking Critically about Geopolitics," introduction to The Geopolitics Reader, ed. Ó Tuathail, Dalby, and Routledge, p. 20.
3. Themes developed throughout can be ascribed to Alfred Thayer Mahan, The Influence of Sea Power upon History, 1660–1783 (1890; repr. New York: Dover, 1987).


13. Ibid.


21. The epigraph at the beginning of this article is from this work. Wilfred Nunn [Vice Adm., RN (Ret.)], *Tigris Gunboats: The Forgotten War in Iraq 1914–1917* (London: Andrew Melrose, 1932), p. 9.


24. Ibid., pp. 73–74.


29. Ibid., p. 4.


31. Ibid., p. 45.

32. Ibid., p. 187.

33. Ibid., p. 190.


36. Ibid.


41. Ibid., p. 78.
51. United States, Required Operational Capability / Projected Operational Environment (Norfolk, VA: Riverine Group 1, 2008).