2018


Christopher McMahon

Follow this and additional works at: https://digital-commons.usnwc.edu/nwc-review

Recommended Citation
Available at: https://digital-commons.usnwc.edu/nwc-review/vol71/iss4/6

This Article is brought to you for free and open access by the Journals at U.S. Naval War College Digital Commons. It has been accepted for inclusion in Naval War College Review by an authorized editor of U.S. Naval War College Digital Commons. For more information, please contact repository.inquiries@usnwc.edu.
The Great White Fleet Sails Today?

Twenty-First-Century Logistics Lessons from the 1907–1909 Voyage of the Great White Fleet

Christopher McMahon

We need above all things, a proportionate Navy, one that is perfect in every essential particular, not simply the ships that are necessary for fighting, but the ships that are necessary to sustain the ships that do the fighting, to carry coal [fuel] and supplies . . . and without these ships, the Navy would be as helpless in case of war as we would be without the battleships or the fighting ships of the Navy.

Senator Francis G. Newlands (D-NV), Congressional Hearing, March 1908

In the numerous conflicts since the founding of the republic, and in particular since the late nineteenth century, the United States has relied on its ability to project military power far from its shores. With the country isolated from much of the world by massive oceans, America’s military has employed sealift and—to some extent, since early in World War II—aerialift to move troops, equipment, ammunition, and supplies around the world.¹ The majority of this lift capacity has been provided by commercial merchant vessels under the operational control of the military.

World War II offers the most spectacular example of strategic lift in the history of warfare. Using hundreds of Army and Navy logistics vessels and over five thousand merchant vessels, the United States carried more than 132 million measurement tons of cargo during the war.² This included the movement of nearly 1.4 million vehicles, two thousand locomotives, and nearly eight million soldiers, plus vast amounts of ammunition, supplies, and other equipment.³ As it mounted the largest naval armada in history, the U.S. Navy

Christopher J. McMahon currently holds the Maritime Administration Emory S. Land Chair of Merchant Marine Affairs at the Naval War College. He is a graduate of the U.S. Merchant Marine Academy at Kings Point, New York, and holds master’s degrees from American University, Long Island University, and Starr King School. He is an unlimited master mariner and a commissioned rear admiral, U.S. Maritime Service. He has held several Senior Executive Service positions with the Department of Transportation and the Maritime Administration.

© 2018 by Christopher McMahon
Naval War College Review, Autumn 2018, Vol. 71, No. 4

Published by U.S. Naval War College Digital Commons, 2018
would have found it impossible to achieve its accomplishments in the Atlantic and Pacific theaters without the thousands of Army and Navy logistics ships and commercial merchant ships that supported the fleet.

Recognizing the direct relationship of logistics to the ability of the U.S. military to forward-deploy around the world and acknowledging the need to coordinate military lift capabilities for all the services, the U.S. Merchant Marine, and the airline industry, the U.S. government created the U.S. Transportation Command (USTRANSCOM, or simply TRANSCOM) in 1987. TRANSCOM is headquartered at Scott Air Force Base in Illinois and is a four-star unified command. TRANSCOM components include the Air Force's Air Mobility Command (AMC), the Army's Military Surface Deployment and Distribution Command (SDDC), and the Navy's Military Sealift Command (MSC). Augmenting and supporting MSC is the Ready Reserve Force (RRF) of the Maritime Administration (MARAD). The RRF consists of government-owned ships that MARAD and its contracted companies maintain in a ready status. These ships fall under MSC's operational control when activated and are used in sealift emergencies to support all the armed services. For more than thirty years—through numerous conflicts, military actions, and deployments—TRANSCOM and its component commands (and MARAD's RRF) have proved their efficiency and effectiveness. They have played vital roles in the success of American military actions—in the air, on land, and at sea.

Yet, as well as many military leaders and planners in all the services understand and appreciate the critical importance of sealift logistics, too often as time passes some military professionals and politicians forget or overlook the lessons learned from past logistics failures. We are again at a time in history when the importance and vulnerability of sealift, for both military and commercial activities, need to be considered and reassessed. The voyage of the U.S. Navy's Great White Fleet around the world from December 1907 to February 1909 offers some powerful lessons in this regard.

During the latter half of the nineteenth century, European powers rushed headlong into the building and expanding of global empires around the world. As the twentieth century dawned, with most of the United States and its territories explored, America too launched itself into imperialist actions as it sought great-power status. A particular manifestation was the Great White Fleet's voyage, which seemingly proved that America's navy could project power forward to any region of the world and defend the country's newly acquired overseas territories and its trade. Credit can be given to President Theodore Roosevelt for envisioning this voyage, which, by most measures, was an unparalleled success. Never before had any navy in the world embarked on such a voyage,
circumnavigating the globe and visiting as many countries with such a large and powerful battle fleet.

Less known with regard to the 1907–1909 voyage is the logistics backstory. This background demonstrates the critical importance of strategic sealift and the ultimate vulnerability of any navy, army, or air force that is dependent on logistics ships for fuel, stores, and ammunition. This story provides lessons that remain as important for all the armed services of the twenty-first century as they were to the U.S. Navy of the early twentieth century—lessons that often go unappreciated or forgotten. While today the U.S. Navy, and the U.S. military writ large, have great logistics capabilities through the strategic sealift managed by USTRANSCOM, MSC, RRF, and the commercial U.S. Merchant Marine, there are serious challenges that need to be considered and overcome. The ability of America’s navy and all its armed services to forward-deploy depends on doing so.

BACKGROUND TO THE VOYAGE
The U.S. Navy ended the Civil War with, in theory, almost seven hundred ships in commission. This included some sixty-five ironclads. But by 1880, Navy vessels had dropped to only forty-eight in number—and all of them were essentially technologically obsolete. During this period, the U.S. Merchant Marine was in equally poor shape. To make matters worse, those shipowners who had transferred their vessels to neutral flags during the Civil War to avoid attacks from Confederate forces were considered traitors, so Congress passed a law specifically forbidding the reflagging of those ships back under the U.S. flag.

Exhausted from the war and with the huge interior of their country largely unoccupied (except by native peoples) and offering great promise, Americans turned inward and ignored the sea, their navy, and their merchant marine. Partially contributing to the lack of interest in a sizable U.S. Merchant Marine was the fact that by 1890 there were twenty-two coastal states and twenty-two inland states, resulting in a decline in political support for maritime industries.

During these years following the Civil War, industrialization spread rapidly in the United States; American industry eclipsed that of Great Britain by the end of the century. With industrialization came incredible wealth, which went to a new class of Gilded Age businessmen but spread as well to many average Americans and the country at large.

As the United States became more dependent on overseas trade during this period, political leaders in Washington began to look at the decrepit state of the Navy and the Merchant Marine. There was fear that if overseas powers threatened seagoing trade, the United States did not possess a navy adequate to protect the nation’s interests, much less a merchant marine capable of carrying a significant portion of the nation’s international trade.
It was Secretary of the Navy William H. Hunt who began to build a new and more powerful U.S. Navy in the early 1880s. Under his leadership and that of subsequent Navy secretaries, Congress appropriated funds for the construction of modern cruisers.\(^{11}\) By 1890, six armored cruisers had been built and were operational. During the same year, Captain Alfred Thayer Mahan, USN (later rear admiral and President of the Naval War College, in Newport, Rhode Island), published his seminal book, *The Influence of Sea Power upon History, 1660–1783*. In the book, Mahan argued that sea power was critical to establishing national strength and dominance in global trade.\(^{12}\) (Importantly, Mahan also noted that one of the critical attributes of sea power was a capable and robust commercial merchant marine, although ever since Mahan first offered his thesis most in America have overlooked this observation.)\(^{13}\)

Mahan’s book had a tremendous impact, not just in the United States but around the world. Huge, expensive battleships, large fleets, and decisive battles seemed to be the order of the day. At the same time, newcomers to colonialism, such as Germany, Japan, and the United States, clamored for overseas colonies—if necessary, to be obtained and then protected by the force of their navies.

In the United States, the Naval Appropriations Act for 1891 (better known as the Battleship Act of 1890) for the first time authorized the construction of three battleships, which would be christened USS *Indiana*, USS *Massachusetts*, and USS *Oregon*. During the next ten years, several more battleships were completed, bringing the U.S. Navy, by some metrics, from a ranking of twelfth among the world’s navies in 1870 to fifth place.\(^{14}\)

**PRESIDENT TEDDY ROOSEVELT AND THE GREAT WHITE FLEET**

By the conclusion of the Spanish-American War in 1898, the U.S. Navy had destroyed the Spanish fleets in the Philippines, Cuba, and Puerto Rico and seized the Philippines and Puerto Rico as possessions in a new “American Empire.” The American navy, with its new and apparently proven ships, was the pride of the nation.\(^{15}\)

As luck would have it for the growth of the fleet, the political sun continued to shine on the Navy with the accession of Theodore Roosevelt to the presidency in 1901. As a former Assistant Secretary of the Navy in the early days of the war with Spain, Roosevelt was an ardent advocate of naval power and a fervent believer in the words of Mahan. Under his tenure as president, the Navy continued to grow in both size and power.

World events during Roosevelt’s administration contributed to support for a larger and more powerful navy. In 1903, the Roosevelt administration eagerly encouraged and provided resources to rebels in Panama to help them gain independence from Colombia. The motive was ultimately to establish a treaty with a
new Panamanian government whereby the United States could build and operate a canal across the isthmus. This would enable the U.S. Navy to move from ocean to ocean rapidly to deal with conflicts in Europe or Asia. U.S. tensions with Japan began during these years, and the shocking defeat of the Russian fleet at the naval battle of Tsushima during the Russo-Japanese War in 1905 seemed to prove Mahan’s theories of decisive naval battles and the need for large, powerful battle fleets. Roosevelt and Congress grew concerned about the ability of the U.S. Navy to protect newly acquired territories and colonies in the Pacific, notably the Philippines. The launching of HMS Dreadnought in 1906 also had profound effects on the psychology of naval strategists around the world. Dreadnought was essentially an all-big-gun ship, and its steam-powered turbines made it fast for battleships of the day. Over the course of the next three years, the world’s navies ordered nearly seventy of these powerful—and expensive—ships.

In 1901, the U.S. Navy possessed nine battleships, with eight more under construction. Responding to pressure from Roosevelt and support from the press and the public, Congress authorized the construction of an additional ten battleships and four armored cruisers in the years from 1901 to 1905. In 1906 and 1907, two additional battleships were authorized, and in 1908 two more. By this time, the United States had emerged as a first-rate naval power. In fact, in 1908, the U.S. Navy ranked as number two in the world, second only to Great Britain’s Royal Navy (This would change in ensuing years as Germany continued its naval arms race with Britain; its navy moved from the number three to the number two spot by the start of World War I.)

During the early 1900s, navies, and especially their battleships, became tangible and dramatic symbols of national power. Even countries that could ill afford the cost of building and operating battleships built one or two to demonstrate that they too were great naval powers, or at least to provide some substantive support for the notion. The best way to show off a nation’s power was to hold or participate in naval expositions or parades or to visit the ports of other major naval powers. Indeed, it was a statement of respect when a nation received an invitation to join another nation’s naval festivities, and when invitations were received utmost attention was given to impressing others with a display of one’s own powerful battleships. In this environment, President Roosevelt first conceived of sailing a USN fleet around the world.

THE VOYAGE OF THE GREAT WHITE FLEET
Roosevelt’s plan for sending America’s battle fleet around the world apparently began to develop in 1905. The genesis of this idea may have been his observation of and admiration for the epic transit of Russia’s Baltic Fleet from Saint Petersburg to the Far East to challenge the Japanese navy in the Russo-Japanese War.
In 1904, the tensions between Japan and Russia over Korea and Manchuria reached the boiling point and the two nations found themselves at war. The ill-trained and ill-equipped Russian Far East Naval Squadron was no match for the modern and highly trained Japanese navy, which, on February 8, 1904, attacked and heavily damaged what Russian naval power was available in eastern Russia.  

In response, the tsar decided to send the entire Baltic Fleet to the Far East to engage the Japanese, destroy their fleet, and quickly win the war—or so he thought. But it was not to be so. The Russian fleet departed Revel (modern Tallinn, Estonia) on October 15, 1904. After a grueling 18,000-mile journey from northern Europe to the Tsushima Strait off the coast of Japan, on May 27, 1905, the Russian fleet engaged the Japanese. In the ensuing fierce battle most of the Russian ships—including all the battleships—were sunk, with only a few ships reaching Russian ports and three cruisers escaping to the Philippines. The war soon came to a close. Both sides, exhausted, agreed to peace negotiations and eventually signed a treaty—engineered by none other than President Theodore Roosevelt—in Portsmouth, New Hampshire.

Despite this complete disaster (from the Russian perspective), Roosevelt was probably very impressed by the long voyage of the Russian Baltic Fleet—particularly since the world press covered it extensively during the seven-month span. He may have been inspired to send the U.S. Navy’s battle fleet on an even longer voyage. Then there were the unsettling tensions with Japan. Considering Japan’s devastating defeat of the Russian fleet at Tsushima, its growing belligerence in China and Korea, and the rapid growth of its merchant marine, Americans on the West Coast were becoming increasingly uneasy. The initial voyage of the Great White Fleet (from the American East Coast to the West Coast) was clearly an attempt to reassure Americans that their Navy could defend the West Coast. In his autobiography, written in 1913, Roosevelt also stated that the purpose of the cruise was to “impress the American people in order to gain support for a program to build more battleships.”

Amid the growing tensions with Japan in the summer of 1907, it was originally Admiral George Dewey who suggested to Roosevelt that he send the battle fleet to the Far East as a show of force. Apparently during that summer Roosevelt began to consider seriously a “world cruise” for the fleet, but he kept this idea to himself for a time. Then, in late summer, the Roosevelt administration announced that sixteen battleships would make a voyage from the East to the West Coast of the United States via the Strait of Magellan. In December 1907, the fleet departed Hampton Roads, Virginia, bound for San Francisco. Initially this fleet included sixteen battleships, eight armored cruisers, and six torpedo boats. The officers and men of the fleet, at this point, were aware that the voyage probably would continue around the world; the world press was still in speculative mode,
but as the weeks progressed intentions for the voyage of the Great White Fleet became clear. The ships would travel from the West Coast of the United States to New Zealand, Australia, Japan, and the Far East, then to Sri Lanka, through the Suez Canal and the Mediterranean to Spain, and finally across the Atlantic and back to Hampton Roads, arriving in early 1909.

This would be a 43,000-mile, around-the-globe voyage to twenty ports on six continents. It was a world first for the large battle fleet of any nation—an accomplishment that brought envy, concern, pride, or criticism, depending on the source. It was, in any case, an impressive accomplishment for a relatively young nation and a rising naval power.

THE “REST OF THE STORY”: COAL AND STORES

The expression “An army marches on its stomach” (attributed to both Frederick the Great and Napoléon) is well understood by most people. It seems rather obvious that food and fuel (fodder for horses was the equivalent of the latter in premodern times) are basic necessities if an army is to move from one point to another. What may be less obvious is that the same is true for a navy. Granted, some types of warships can carry substantial amounts of food, supplies, fuel, and ammunition, but in general warships’ steaming range, and therefore their ability to fight, is limited—often only a few days’ underway time.

The ships of the Great White Fleet were no exception. In that era, a battleship steaming at sea speed consumed its coal supply within a week. Fresh water—crucial throughout maritime history—was even more important in the age of steam power, since steamships were dependent on liberal amounts of fresh water to resupply their boilers. Then there was the question of feeding warships’ crews. On the voyage of the Great White Fleet, the crew complement of the fleet consisted of some fourteen thousand men. The one other often-critical commodity for warships, ammunition, was not a concern on the peacetime voyage of the Great White Fleet—in stark contrast to the situation of the Russian fleet as it steamed toward its fateful rendezvous in the Tsushima Strait.

Roosevelt and Navy planners were well aware of the supply issues facing the Great White Fleet, but the solutions were daunting and dangerous. For example, they were aware that Admiral Dewey’s wholesale destruction of the Spanish fleet in the Philippines and the U.S. Navy’s pursuit of the Spanish fleet off Cuba during the Spanish-American War were, in many respects, quite fortuitous because they exposed that the Navy’s ability to resupply its combatants with coal, stores, and ammunition during war was seriously limited and reliant on foreign-flag merchant ships.

Despite the massive growth in the number of USN battleships and other combatants from 1898 into the first decade of the new century, the Navy possessed
only three U.S.-flag supply ships: USS Celtic, USS Culgoa, and USS Glacier. Further complicating this vulnerability at the time of the voyage of the Great White Fleet, the Navy possessed only six old colliers (some still rigged with sails) to support the fleet on its voyage. It was estimated that the fleet would consume upward of five hundred thousand tons of coal just on the voyage from the United States to the Far East. The Russians, for example, had needed to charter sixty foreign-flag colliers to supply their fleet on its voyage from the Baltic to the Far East.

A study the Naval War College conducted in early 1907 estimated that the Great White Fleet would require some one hundred chartered colliers to support it on its voyage around the world. The problem was that there were no U.S.-flag colliers to charter, because the U.S. Merchant Marine had been allowed to atrophy during the decades after the Civil War. As Assistant Secretary of the Navy prior to the Spanish-American War, Roosevelt, along with Mahan and senior Navy officials, had advocated to Congress that a sufficient fleet of U.S.-flag colliers be built to enable the Navy to forward-deploy. But this proposal never gained any traction, and Congress took no action on its own to support a revitalized U.S. Merchant Marine. Only warships, no colliers or supply ships, were authorized and built.

Accordingly, in October of 1907, the Navy Department—now desperately in need of logistics ships—contracted for thirty foreign-flag colliers to supply the Great White Fleet on its voyage from Hampton Roads to San Francisco. The majority of these were British-flag merchant ships. In an interview just after the fleet began its voyage, contemporary German naval critic Graf Ernst zu Reventlow underscored that “the lack of supply ships and colliers left the Americans and the Great White Fleet in a highly vulnerable position given their dependency on foreign flag ships, especially British ships.” He would be proved right. In total, more than forty-one British merchant ships were chartered to carry coal and supplies for the Great White Fleet during the around-the-world voyage. Many other foreign ships, mostly European, also were chartered. As expected, there were many more chartered supply ships supporting the Great White Fleet than there were warships on the voyage. (It is important to emphasize that any requirement to resupply naval ordnance would have necessitated even more supply ships.)

In the Pacific, the U.S. Navy learned firsthand the dangers of becoming too dependent on foreign-flag ships to carry the fleet’s coal. During a portion of the Pacific voyage, no colliers were available to resupply the fleet. Some historians have suggested that diplomatic tensions over a possible U.S.-German alliance against a Japanese-British alliance caused the British to withdraw their coal ships—and their coal—for a period. The coal was as important as the ships: during this part of the Pacific voyage, the U.S. Navy was forced to buy Australian coal, which was inferior in quality, requiring nearly half again as much to achieve the same output.
from the fleet’s boilers. Rear Admiral Charles S. Sperry (the fleet commander on the later part of the voyage) noted in subsequent congressional testimony that this demonstrated clearly how Great Britain “could control the actions of the fleet.” Exacerbating this problem, throughout the voyage there were frequent rendezvous problems with contracted foreign-flag vessels; in some cases, they simply never met the fleet.

Coal was not the only commodity dependent on shipping that was less than fully reliable. When the Great White Fleet was in the Mediterranean, an earthquake in Italy created a serious humanitarian crisis. Admiral Sperry dispatched the U.S. supply ship USS Culgoa to assist. But the fleet depended on this one ship for food and other supplies, so to compensate the Navy chartered a British-flag ship, SS Republic, to bring food and supplies to the fleet while it was in the Mediterranean. Unfortunately, Republic sank in a collision in fog with another vessel. Fear of famine created widespread panic throughout the fleet. It was only when the Royal Navy provided the Great White Fleet with basic rations from its stores at Gibraltar that the crisis was averted. Additional food and supplies from America never did arrive, but through strict rationing the fleet successfully sailed from Gibraltar to Hampton Roads.

On February 21, 1909, the Great White Fleet steamed majestically into Hampton Roads to a huge celebration and a proud president and nation. The U.S. Navy had accomplished a magnificent feat, and for the most part had gained the respect of seafaring nations across the globe.

CRITICISM, AND VULNERABILITIES EXPOSED

Even before the Great White Fleet departed on its voyage, critics noted that the lack of a U.S. Merchant Marine limited the ability of the Navy to forward-deploy, much less to sail around the world in a conflict situation. Senator Eugene Hale (R-ME, 1881–1911), chairman of the Senate Naval Affairs Committee, was appalled that the magnificent battleships of the U.S. Navy were almost completely dependent “on the indulgence of foreign powers” to forward-deploy on any voyage beyond the Atlantic Seaboard. In a Senate debate and congressional hearing, Senator Hale was quoted as saying that “due to the lack of U.S. flag colliers and supply ships, the Great White Fleet was ‘as useless as a painted ship upon a painted ocean’.”

The fact that the Great White Fleet was almost completely dependent on having foreign-flag commercial ships, especially of the British merchant marine, available to follow the fleet around the world to resupply it was not revealed fully until after the fleet had returned to the United States. Indeed, it is curious that during the period of the voyage the Germans had been hoping to establish an alliance between their country and the United States for a possible war against
Japan and Britain. What the Germans apparently did not consider is that the size and capability of the U.S. Navy mattered not, because without sufficient USN logistics ships and an American merchant marine capable of resupplying the fleet, any U.S. naval contribution to a war against Japan and Britain would have been negligible.\textsuperscript{54}

With the successful return of the Great White Fleet to the United States, the Navy enjoyed substantial support from the public, Congress, and the press. That said, the voyage exposed significant vulnerabilities in the Navy and its ability to project power around the world. As \textit{Scientific American} noted, “We refer to our great shortage of colliers and to the fact that had it not been for the foreign bottoms in which coal was shipped to the fleet at various points of rendezvous, it would have been impossible for this voyage to have been made. . . . [In a wartime setting] with no colliers of our own available to carry the necessary fuel, our sixteen battleships would have been as useless as so many anchored.”\textsuperscript{55}

Following the return of the fleet in 1909, Congress became fully aware of the serious lack of U.S.-flag colliers and supply ships and the Navy’s absolute dependence on foreign-flag merchant ships to deploy on voyages beyond the continental United States. This shortage obviously rendered the Navy impotent in potential conflicts far from U.S. shores. In a March 20, 1908, Senate debate on a shipping bill amending the 1891 Act to Provide for Ocean Mail Service between the United States and Foreign Ports, and to Promote Commerce, Senator Newlands of Nevada noted that the War Industries Board had been consulted regarding the needs of the U.S. Navy in case of a war. The board indicated that “about 232 commercial ships and/or auxiliaries would be needed to use as scouts, transports, colliers, and dispatch boats.” Senator Newlands commented that “we all know we have no such merchant marine as well as such supply ships.”\textsuperscript{56}

Through the course of several congressional hearings and debates after the voyage of the Great White Fleet, it was acknowledged that a sizable U.S. Merchant Marine was critical to national security, and yet Congress took little action until the eve of World War I to support a commercial merchant marine. In the absence of a robust U.S. Merchant Marine, and realizing the critical vulnerability the lack of logistics ships and commercial vessels represented, the Navy in 1908, with the consent of Congress, allocated 59 percent of its ship-construction budget to building a new fleet of Navy colliers and supply ships.\textsuperscript{57}

\textbf{AMERICA’S TWENTY-FIRST-CENTURY NAVY—LESSONS LEARNED OR FORGOTTEN?}

One hundred twenty-five years after the publication of Mahan’s \textit{Influence of Sea Power upon History} and 110 years after the voyage of the Great White Fleet, the
Navy’s *Cooperative Strategy for 21st Century Seapower: Forward, Engaged, Ready*, issued in 2015, stated in part:

> Forward naval presence is essential to strengthening alliances and partnerships, providing the secure environment necessary for an open economic system based on the free flow of goods, protecting U.S. natural resources, promoting stability, deterring conflict, and responding to aggression. As global maritime commerce expands, populations increase, competition for energy and natural resources grows, and advanced military technologies proliferate across the oceans and through the littoral, so too will challenges arise for anyone operating in those regions.

> The American people will continue to rely on the Sea Services to respond to fast-changing and complex world events that threaten the security of the United States and our allies and partners. 58

Although international objectives may have changed, the importance of sea power that Mahan formulated has not diminished. In fact, given the rapid growth of navies around the world over the last twenty years, there is little question that great world powers are as eager today to possess large and powerful navies as nations were more than a century ago. It can be argued that currently there is under way a naval arms race much like that which occurred in the early years of the twentieth century. For decades after the end of the Cold War, the U.S. Navy had no near-peer competitor; this situation has changed considerably in recent years with the rapid growth of navies around the world.

Unfortunately, it seems that many operational strategists and planners have almost forgotten some of the lessons learned from the voyage of the Great White Fleet regarding fleet logistics. This is especially true when it comes to realizing the importance of a U.S. Merchant Marine in deploying all the armed forces around the world, including the Navy, as Mahan discussed. The coal-burning battleships of the Great White Fleet required refueling after one to two weeks’ steaming time, depending on voyage speed. Yes, today’s nuclear-powered carriers and submarines can steam for decades without refueling, but gas turbine–powered destroyers and cruisers require fuel nearly as often as coal-burning steamships did, and much more often if they are engaged in combat operations. In addition, maintaining combat air operations requires a carrier to replenish jet fuel at least every five days. 59 Simply put, Navy combatants today are as dependent on logistics ships as their predecessors were during the voyage of the Great White Fleet.

**TODAY’S STRATEGIC SEALIFT/LOGISTICS CAPABILITIES**

To keep warships and land and air forces forward deployed and capable of fighting, the military today has an asset that did not exist a century ago: TRANSCOM. One of its component commands, Military Sealift Command,
provides logistics sealift for all the armed services. MSC’s mission is clear: “Military Sealift Command exists to support the joint warfighter across the full spectrum of military operations. Our mission is timeless and essential. Regardless of the challenge, we prevail! Working seamlessly with key partners to master the maritime and cyber domains, MSC provides on-time logistics, strategic sealift, as well as specialized missions anywhere in the world, under any condition, 24/7, 365 days a year.”

MSC is a capable, well-organized, and efficient organization with numerous missions. Supporting all the armed forces, MSC operates nearly 130 ships around the world. MSC ships are divided into eight mission sets: fleet oilers, special mission, prepositioning, service support, sealift, fleet ordnance and dry cargo, afloat staging, and expeditionary fast transport. Specifically to provide Navy fleet-logistics support around the world, MSC operates fifteen fleet oilers and fourteen fleet ordnance and dry-cargo ships. Other MSC ships support the Army and Air Force and other essential military missions not related to supplying Navy ships. MSC government-owned, U.S. Naval Service ships are crewed by civilian, government-employee mariners. Many other MSC vessels are commercial merchant ships chartered to provide logistics support for all U.S. armed forces around the world. These ships are crewed by civilian, union mariners.

The Maritime Administration (part of the U.S. Department of Transportation) has complementary government and commercial strategic sealift capabilities to support all the armed forces. MARAD’s primary government sealift asset is the RRF, which consists of forty-six former merchant ships: thirty-five roll-on/roll-off (RO/RO) vessels, eight of which are fast sealift support vessels; two heavy-lift or barge-carrying ships; six auxiliary crane ships; one tanker; and two aviation-repair vessels. These ships are dedicated to strategic sealift, and when activated in times of national emergency they fall under the operational control of MSC. RRF ships are berthed at various U.S. ports. Each is expected to be fully operational within its assigned five- or ten-day readiness status, thence to sail to designated loading berths. Through competitive contracts, commercial U.S. ship-management companies provide systems maintenance, equipment repairs, logistics support, activation, and operations management for RRF vessels. American civilian mariners contracted through maritime labor unions constitute the crews.

MARAD’s commercial sealift capability also includes managing the Maritime Security Program (MSP), which provides an annual operating subsidy for sixty commercial cargo ships under the U.S. flag. This program supports an active, privately owned, U.S.-flag and U.S.-crewed liner fleet in international trade, which becomes available to support Department of Defense (DoD) sustainment operations when necessary. The MSP facilitates maintenance of a base labor pool of approximately 2,400 American mariners available to crew government and commercial ships in times of peace and war.
Finally, MARAD also oversees the Voluntary Intermodal Sealift Agreement (VISA) program. The VISA program is a partnership between the U.S. government and the maritime industry to provide DoD with “assured access” to commercial sealift and intermodal capacity to support routine and emergency deployment and sustainment of U.S. military forces. The VISA program enables DoD to benefit from the maximum use of a modern, global logistics network and intermodal capabilities, including dry-cargo ships, shoreside equipment, terminal facilities, and intermodal management services. All MSP ships are part of the VISA program.64

The global strategic sealift capability of the U.S. military through USTRANSCOM’s MSC and MARAD and the programs these organizations administer is, indeed, impressive, and is unmatched by any other nation. These entities’ efficiency and effectiveness have been proved in countless U.S. military deployments; the battle testing they received during Operations ENDURING FREEDOM and IRAQI FREEDOM was especially significant.

However, compliments aside, there is growing concern that the strategic sealift (logistics) nightmares the Navy faced during the voyage of the Great White Fleet could affect similarly (i.e., negatively) not only the deployment and readiness of USN combatants but the forward deployment of all U.S. armed forces, traceable to some of the same factors the Great White Fleet experienced.

Clearly the strategic sealift capabilities of the U.S. military in general, and the U.S. Navy in particular, are greatly superior to those of the U.S. Navy of a century ago. However, the size of the American fleet, the missions of the U.S. Navy and the military as a whole, and the degree of forward deployment of U.S. forces also are vastly greater and more complicated than they were a century ago. As impressive as the voyage of the Great White Fleet was, it pales in comparison with what the U.S. military does every day around the world in the current era. In other words, although the strategic sealift capabilities of the United States are impressive, so too are the demands on and potential challenges to the capabilities of the logistics system that supports the Navy and the military as a whole.

For decades, the U.S. Navy has faced no capable competitors as it sailed the seven seas. For decades, USN task forces and ships have engaged in combat operations around the world, with no serious threat from other forces. For decades, U.S. military strategic sealift ships, whether government owned or commercial, could sail throughout the world with no threat of attack from an enemy. Now this situation has changed completely. Today, enemy threats on logistics ships abound, whether in the form of kinetic strikes or a loss of control and incapacitation from cyber-warfare attacks. There are other challenges as well, some of which are discussed in the sections that follow.
Lack of a Sizable U.S. Merchant Marine

Alfred Thayer Mahan’s most famous work, *The Influence of Sea Power upon History*, published in 1890, drew from a series of lectures he gave at the Naval War College. In the book he concluded that merchant shipping was both a source of maritime power and something that navies naturally needed to defend.\(^{65}\) As if to prove Mahan’s point, shortly after the book’s publication, during the Spanish-American War, the United States found itself without the commercial shipping it needed to support the U.S. Navy. In fact, it was necessary to charter and purchase foreign-flag ships to resupply U.S. fleets during the war, and only serendipity enabled the United States to do so.\(^{66}\)

The lack of a sizable U.S. Merchant Marine for economic and strategic sealift manifested itself again at the outbreak of World War I. European belligerents removed their vessels from U.S. trade, which seriously damaged the U.S. economy.\(^{67}\) Recurrence of the same problem in World War II was partially avoided by the vision of the Franklin D. Roosevelt administration and Congress, which enacted the Merchant Marine Act of 1936. This legislation initiated a massive buildup of commercial shipyards and the construction of huge numbers of U.S.-flag merchant ships.\(^{68}\)

Today, there are more than ninety thousand commercial ships in the world, a majority of which are engaged in global deep-sea trade.\(^{69}\) (This figure does not include hundreds of thousands of inland commercial vessels.) The nation owning and controlling the most merchant ships is China, with more than 5,400 vessels registered, mostly in China (and Hong Kong), but with hundreds of other Chinese ships registered in flag-of-convenience (FOC) nations.\(^{70}\) The United States has only eighty-one merchant ships in international trade under the U.S. flag. The majority of these ships are operated by U.S. companies that are subsidiaries of larger shipping companies that are owned and located in other nations, such as Denmark, Switzerland, Germany, and France. (Sixty of these ships are supported through MARAD’s MSP.)\(^{71}\)

The question is whether in a global conflict involving the United States there would be enough U.S.-flag ships to support the U.S. armed forces, including the U.S. Navy. The answer is: possibly. However, the crux of the problem is this: if, in a contested environment, U.S.-flag shipping experienced casualties, there is no reserve of commercial, U.S.-flag ships on which to call; there is no “bench,” so to speak. Could the United States rely on foreign ships registered in other countries and crewed by foreign nationals? If there were no MSC or other commercial, U.S.-flag vessels available, could the U.S. Navy rely on foreign-flag ships to resupply a task force? Possibly yes—but quite possibly no. So, if foreign-flag ships and crews were not available because of particular circumstances (and one can think of many combinations of factors that would have that effect), the U.S. military
very quickly would be immobilized, rendered incapable of carrying on a fight far from U.S. shores. The Navy of today would be in the same position as the Great White Fleet more than a century ago.

Today, USN task forces are resupplied by the fifteen fleet oilers and fourteen ordnance and dry-cargo ships that MSC operates. These ships draw fuel and supplies from various depots around the world, in both U.S. and foreign ports.Depots in the United States are supplied by U.S.-flag merchant vessels; depots in other countries are supplied by both U.S.- and foreign-flag ships. However, there are only six U.S.-flag product tankers to supply fuel for the entire U.S. Navy around the world.\textsuperscript{72} There are no other U.S.-flag tankers in international trade, and very few, if any, other product tankers in domestic trade that could be used in an emergency. In a manner similar to its practice during the voyage of the Great White Fleet, the Navy today frequently relies on foreign-flag tankers and cargo ships to carry Navy fuel and supplies because of the limited number of U.S.-flag merchant ships.\textsuperscript{73}

In a contested environment, if one or more of the limited number of MSC or U.S.-flag merchant ships were taken out of action by kinetic or cyber means, would there be a work-around? Quite possibly no.

**Inability to Protect Logistics Ships**

There is great concern about the Navy’s ability to protect logistics ships, both government owned and commercial. Of course, the U.S. Navy has substantial war-fighting capabilities; however, the Navy’s fleet of combatant ships currently (in 2018) numbers 272 ships and submarines, and these vessels already have multiple war-fighting missions that stretch the capabilities of the fleet substantially.\textsuperscript{74} In a 2014 congressional hearing on sealift force requirements, the deputy commander of TRANSCOM was asked about the ability of the Navy to protect logistics ships. He replied as follows: “So in terms of protecting ships as they go across [the ocean] we—just so you know—we don’t have a lot of attrition built into our modeling. So we . . . that’s not something we build in there.” In other words, although the United States has substantial strategic sealift capability, even modestly successful kinetic or cyber attacks on MSC, RRF, or MSP/VISA merchant ships could have far-reaching consequences for the Navy and the military’s ability to forward-deploy and conduct combat operations.\textsuperscript{75} Simply put, currently no doctrine is in place to protect merchant shipping, and protection for strategic sealift vessels is not factored adequately into U.S. policies or plans.

**Nonavailability of U.S. Mariners**

During the numerous conflicts of the twentieth and twenty-first centuries, there have been no examples of U.S.-flag carriers refusing to offer their ships in times of national emergency. Similarly, there have been no examples of American
merchant mariners refusing to enter contested environments and thereby preventing U.S.-flag ships from serving the military. Quite to the contrary, U.S. merchant mariners have served with distinction in all U.S. conflicts. During World War II, for example, nearly six thousand U.S. merchant mariners were killed or lost at sea. This represents the greatest percentage loss of any U.S. service during the war.\(^76\) (One in twenty-six mariners serving on U.S. merchant ships during the war died in the line of duty.)\(^77\)

Some have suggested that foreign ships and mariners might be available to serve the logistics needs of the military in a U.S. conflict. However, there is no guarantee this would work. Despite the relatively benign environment of the Persian Gulf during the Gulf Wars, chartered foreign-flag ships and crews did refuse, on occasion, to deliver U.S. military cargoes.\(^78\) There are many political scenarios under which foreign vessels and their crews would be prohibited by their governments from supporting the U.S. military.

Clearly, the availability of experienced U.S. mariners is crucial for crewing the RRF, MSC commercial merchant ships on charter, and U.S.-flag ships in the MSP and VISA programs that are supporting military sealift. However, ensuring such availability in a future national emergency would require that there be an adequate pool of available mariners. Just as important, there also must be a pipeline of younger mariners entering the commercial maritime workforce throughout the years ahead. All this can happen only if there is a stable U.S. Merchant Marine with a number of jobs adequate to ensure employment.

However, because of the shrinking number of commercial ships and commercial seagoing billets, it has become increasingly difficult for younger mariners to gain the sea time and experience necessary to raise the level of their commercial licenses and to sail in positions of higher responsibility.\(^79\) As the U.S. Merchant Marine continues to decline, the number of available jobs in the industry also decreases. Senior leaders at TRANSCOM and MARAD are deeply concerned that the military readiness of the United States is currently at risk because the declining number of U.S.-flag commercial ships means the pool of available, experienced mariners continues to get smaller.\(^80\) At the present time, it is questionable whether there would be enough American mariners available during a conflict—particularly a long one—and the picture grows bleaker with each passing year.\(^81\)

**Effectively U.S. Controlled Ships Dwindling**

Ships owned by Americans and U.S. interests but flagged in other countries, particularly FOC countries, have been termed *effectively U.S. controlled* (EUSC) ships. The theory is that these vessels would be available to the United States in times of national emergency. Expecting and relying on the availability of EUSC shipping constituted a long-standing policy of the Joint Chiefs of Staff. In 1989,
for example, President George H. W. Bush signed a National Security Sealift Policy that reiterated the importance of EUSC shipping as part of the military’s strategic sealift capability.\textsuperscript{82}

However, the problems with relying on EUSC shipping are twofold. First, while the owners of EUSC ships theoretically might be willing to support the United States in a national emergency, there is no guarantee that the flag states of those EUSC vessels would allow them to be used to support U.S. interests or objectives. For example, Panama has the largest number of merchant ships registered under its flag.\textsuperscript{83} A Chinese company operates the two major marine terminals on the ends of the Panama Canal, and the Chinese have numerous other business interests in Panama.\textsuperscript{84} For these reasons, the Panamanian government might be reluctant to allow the United States to use any vessel under Panamanian registry in a conflict between the United States and China. Further, EUSC vessels are crewed by foreign nationals, not Americans, and there is no guarantee that foreign crews would be willing to serve on EUSC vessels in a U.S. conflict.

In any case, because of U.S. tax laws passed in 1979 and 1986, American owners of EUSC ships no longer can avoid paying taxes on their incomes. As a result, the number of EUSC ships has dwindled dramatically in the decades since.\textsuperscript{85} Because there are fewer American citizens involved in EUSC shipping than in the past, it is no longer a viable source of ships for the American military in times of national emergency.\textsuperscript{86} Compounding this problem, of the vessels owned by Americans and registered in other countries, the proportion that are militarily useful is very small.

\textit{Aging of the Fleet}

Companies that participate in and receive funds through MARAD’s MSP are required to keep relatively new ships in the program. This does not pose a particularly onerous burden, since the participants’ parent companies (the vast majority of which are foreign owned) maintain large fleets of modern ships under other flags of registry. MSP operators are encouraged to replace aging MSP vessels with newer ships, and must replace them before they reach age-out limits defined in the MSP. This keeps newer vessels composing the MSP-VISA fleet.

The situation with the Ready Reserve Force is quite different. RRF vessels are largely foreign-built vessels, plus some U.S.-built vessels constructed and operated commercially in the late 1970s and early ’80s. Some RRF vessels are even older, with a few (such as the fast sealift vessels, former Sealand Services vessels) approaching and exceeding fifty years of age. Although well maintained by MARAD and the companies contracted to manage them, these formerly commercial RRF ships were not designed and built for half-century life cycles.
For MSC and MARAD to maintain the state of readiness necessary to provide emergency strategic sealift, it is critical to have a solid and continually well-funded vessel-replacement program in place. Yet current budget constraints make this a daunting challenge. This puts at extreme risk the ability of MSC and MARAD to provide logistics ships for strategic sealift for all U.S. armed forces, including the U.S. Navy.

In a report delivered to the Secretary of the Navy in 1946, Fleet Admiral Ernest J. King noted, "Whatever else [World War II] is, so far as the United States is concerned, it has been a war of logistics."

The Goldwater-Nichols Act of 1986 established the U.S. Transportation Command. With its component commands of AMC, SDDC, and MSC, USTRANSCOM fully integrated the military’s transportation modes, so that for the first time in history the U.S. military operated all its military transportation resources under a single command. TRANSCOM soon proved its worth in 1990–91 with the buildup and war against Iraq in DESERT SHIELD and DESERT STORM, which together constituted one of the largest logistics deployments in history. TRANSCOM and its components have proved their efficiency and effectiveness continually since that time, most notably in Operations ENDURING FREEDOM and IRAQI FREEDOM.

The voyage of the Great White Fleet of 1907–1909 demonstrated the emerging capabilities of the U.S. Navy and proved that the United States quickly was becoming a great world power. But it also revealed the critical importance of logistics and logistics ships in keeping a navy supplied in any forward-deployed situation. Although the voyage was completed successfully, there were many challenges and logistics near disasters during the voyage. This primarily was owing to the lack of U.S. logistics ships and the lack of a substantial U.S. Merchant Marine capable of supporting the U.S. Navy—and this was a peaceful operation, facing no threats from an enemy navy. The U.S. Navy and Congress learned from this voyage and, at least for a time, placed emphasis on developing Navy logistics capabilities using U.S.-flag ships. But these lessons had to be relearned in World War I and in the years leading up to World War II.

Given the massive responsibilities the U.S. military shoulders around the world today, it faces challenges similar to those the Great White Fleet faced more than a century ago—but on a much larger scale. As able and efficient as MSC, MARAD’s RRF, and the MSP/VISA fleets are, their capabilities were developed to operate at sea in an uncontested environment. None of the vessels in these fleets are capable of self-defense.

But the continuation of a benign environment on the seas of the world no longer can be assumed. In today’s world, in a conflict involving the United States,
sea lines of communication may pass through contested waters, and U.S. strategic sealift ships, whether government owned or commercial, may be attacked. World powers are building and operating powerful navies and intense cyber-attack capabilities. Even if the Navy were to develop doctrines and strategies to protect sealift ships, the number of USN warships available to protect logistics ships is very limited at best. In some scenarios, it would be next to impossible for the Navy to protect logistics ships in a heavily contested environment.

In the early years of World War II, the Germans had the ability to deploy only one to two dozen submarines at any one time. Yet because defense of merchant vessels supporting the British economy and war effort was inadequate or non-existent, the Germans nonetheless were able to sink six million tons of British shipping from 1939 to 1941. This represented more than 1,400 ships sunk by a small fleet of German submarines. The naval resources needed to defeat the German submarine threat in the Battle of the Atlantic ultimately were staggering, running into the hundreds of billions in today’s dollars.

In the Pacific, the Japanese did not mount an effective defense of their logistics ships or their merchant marine. Their lack of doctrine and maritime trade-warfare defense enabled the U.S. Navy to destroy more than eight million tons of Japanese logistics and merchant marine vessels, virtually eviscerating the Japanese economy and war machine and starving the nation.

In other words, without sufficient protection of logistics and U.S.-flag merchant ships today, losses from an even modestly capable enemy could be substantial. The problem is compounded by the limited numbers of MSC, RRF, and MSP ships available and of American mariners to crew them. The loss of one or more of the twenty large, medium-speed, RO/RO (LMSR) vessels in MSC’s fleet (each of which has a capacity of between 290,000 and 380,000 square feet of cargo space) would have catastrophic effects on a U.S. Army deployment that depended on the timely arrival of supplies and equipment. The loss of one or more of the six American commercial tankers on charter to MSC or the fifteen MSC fleet oilers or fourteen MSC ordnance and dry-cargo ships could devastate Navy resupply of one or more task forces. The same would be the case if the foreign-flag tankers on which MSC depends no longer were available.

The logistical issues and the lack of USN logistics and American commercial merchant ships nearly paralyzed the around-the-world voyage of the Great White Fleet and provided powerful and enduring lessons that need to be looked at with fresh eyes today. In his 1908 congressional testimony, Senator Newlands noted that “[i]n case of war these fighting ships would, without an auxiliary navy [i.e., logistics ships], be absolutely derelict in the ocean, unable to move. Our Navy may be compared to a man with strong lungs and a strong heart, perfect organs, without legs or arms. . . . We need above all things, a proportionate Navy, one that
is perfect in every essential particular, not simply the ships that are necessary for fighting, but the ships that are necessary to sustain the ships that do the fighting.\(^{95}\)

This observation is just as true today as in 1908, and not just for the Navy but for the entire U.S. military.

**NOTES**

2. A measurement ton is a volume measurement equal to forty cubic feet.
5. Since the late fifteenth century, European powers had established “empires” around the world. However, these were mostly for mercantile purposes. It was in the nineteenth century that most of the world was carved up by European countries—notably Great Britain, France, and Germany—into governed empires and spheres of influence.
11. Ibid., pp. 149, 151.
18. Battleships built before *Dreadnought* carried a variety of guns of various calibers.
23. Ibid., p. 23.
25. Ibid., pp. 310, 312.
29. Ibid., p. 220.
30. Ibid., pp. 222–23.
35. This was before the invention of evaporators, which convert seawater into fresh water.
37. Because of its inability to resupply ordnance, the Russian fleet was unable to engage in the necessary target practice en route from the Russian Baltic to the Far East. This was probably a factor in its decisive defeat.
39. Ibid., p. 144.
42. Miller, War Plan Orange, p. 90.
44. Reckner, Teddy Roosevelt's Great White Fleet, p. 17.
47. Ibid., pp. 198–99; Miller, War Plan Orange, pp. 89–90.
51. Ibid., p. 55.
52. 42 Cong. Rec., p. S3635 (daily ed. March 20, 1908) (statement of Senator Hale). The epigraph at the beginning of the article is drawn from this record.
53. In the United Kingdom since World War I, the British merchant marine has been referred to as the British Merchant Navy.
57. Miller, War Plan Orange, p. 91.
59. Representatives of USN Carrier Strike Group 4 and staff members of the Wargaming Department, Naval War College, interview by author, August 10, 2017. During Operation DESERT STORM, the conventionally powered carriers in the Persian Gulf replenished aviation fuel every 2.7 to 3 days. USS Roosevelt, the only nuclear-powered carrier in the DESERT STORM air campaign that was also operating in the Persian Gulf, replenished its aviation fuel about every 3.3 days. Navy Aircraft Carriers: Cost-Effectiveness of Conventionally and Nuclear-Powered Carriers, NSIAD-98-1 (Washington, DC: General Accounting Office, August 27, 1998), p. 67.


70. James Kyenge et al., “How China Rules the Waves,” *Financial Times*, January 12, 2017, ig.ft.com/. A flag-of-convenience country is one that, for a fee, encourages registration of ships in that nation. Shipowners benefit by avoiding taxes, lowering crew wages and related costs, reducing liability, and avoiding some onerous regulations. Examples of FOCs include those of Panama, Liberia, and the Marshall Islands. More than 50 percent of the world’s merchant ships are registered in FOC nations.


72. A *product tanker* is a tank vessel designed to carry refined petroleum products such as jet fuel, diesel fuel, and gasoline.


79. In the United States, it is the U.S. Coast Guard that issues seagoing licenses and certifications. Licensing and certifications for deepsea commercial vessels require many years of sea time in lower positions and numerous exams for a seafarer to rise to the rank of captain or chief engineer.


86. Ibid., pp. ii–iii, vi.


88. Matthews and Holt, *So Many, So Much, So Far, So Fast*, p. 11.

89. Ibid., p. 12.

90. Geoffrey Till, “The Battle of the Atlantic as History,” chap. 34 in *The Battle of the Atlantic*...


92. Michael T. Poirier [Cdr, USN], “Results of the German and American Submarine Campaigns of World War II,” Chief of Naval Operations, Submarine Warfare Division, October 20, 1999, archive.li/.


95. 42 Cong. Rec., p. S3629 (daily ed. March 20, 1908). The senators were debating S.28, “Shipping Bill,” to amend the March 3, 1891, Act to Provide for Ocean Mail Service between the United States and Foreign Ports, and to Promote Commerce.