



A Strategic Concept for the United States Merchant Marine

MAY 2024

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Cover:

191028-N-LQ653-1959 PACIFIC OCEAN (Oct. 28, 2019) Henry J. Kaiser-class underway replenishment oiler USNS Yukon (T-AO-202, right, prepares to conduct a consolidated loading with commercial tanker MT Empire State. The evolution provided the Military Sealift Command (MSC) Pacific Commander the opportunity to exercise a training opportunity at sea with the two ships. (U.S. Navy photo by Mass Communication Specialist 1st Class Patrick W. Menah Jr./Released)

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EXECUTIVE SUMMARY

The US Merchant Marine (USMM) is an integral aspect of US national, military, and maritime power. This has been as true historically as it is today. At every turn in American history, the US Merchant Marine has been the critical undergirding factor in American maritime and broader power.

A conflict on the Eurasian landmass is probable in the coming years, increasing the strategic importance of the USMM. China, Russia, and Iran all probe for weak points in the US Eurasian defense perimeter. China is the greatest of the three adversaries, and the one that, if a war begins, is most likely to require the United States to implement a massive sealift effort given the distances involved.

Adversaries of the United States are searching for weak points in the American defense system, of which logistics is clearly one. China understands that its greatest advantage is geography. If it can destroy the US logistical system by either hitting ports and embarkation points or annihilating the US logistical and merchant fleets, then it can isolate high-tech American combat forces and destroy them in short order.

Logistics is therefore an integral aspect of deterrence. Absent the U.S.'s ability to sustain a long-term war, adversaries – in particular China – may opt to fight a major war even if its initial objectives are militarily denied. This is critical because American defense strategic debate contains within it the assumption that a long war favors the US. If instead a long war does not favor the U.S., then the US must consider its broader risk calculus and deterrence posture in light of drastically different adversary perceptions – perceptions of a weak US merchant marine, unable to supply US troops in a prolonged conflict.

The US Merchant Marine is overwhelmingly responsible for delivering American logistics. US Transportation Command (USTRANSCOM) has critical

air and ground elements, but nine-tenths of all DOD equipment moves by ship. American logistics is therefore almost entirely reducible to the US Merchant Marine with possible assistance from U.S. allies' merchant vessels.

US Merchant Mariners are the backbone of the crews on these ships. US Navy sailors and officers are only rarely placed upon these ships, and then only in specific liaison roles. The US logistics force faces both physical and human constraints. Both constraints must be addressed if the USMM is to provide US forces with the logistical support they need in a major Eurasian war.

Physically, the USMM is too small for the requirements of a major Eurasian war. The USMM should provide badly-needed support capacity for Military Sealift Command. However, the USMM's commercial fleet contains only some 158 commercially owned/operated, actively sailing, militarily useful ships. MSC's Ready Reserve Force Ships, meanwhile, will take months to activate, simply because they are too old and out of repair to be put into service within their legally-mandated timeframe. Over time, US merchant ships will need to resume civilian routes even in a major war, placing additional demands on the fleet. Moreover, the USMM has only a slim margin for error – even limited attrition can cause capacity to deteriorate rapidly.

There is no easy fix for the USMM's numerical issues. The US maritime industrial base has thoroughly withered after decades of neglect. This makes it nearly impossible to build out a fleet rapidly. Unless the US seeks to requisition ships in wartime and turn them into logistics vessels, a move with profound geopolitical and legal implications, it must contract with foreign yards for new ships or purchase them from the second-hand market.

More critically, the USMM has a personnel numbers crisis. The USMM is a fraction of its historical size, even when compared to its capabilities 20 years ago. It also has no obvious link to the other services despite its

nickname as the “Fourth Arm of National Defense.” For such a critical capacity, every requirement of the USMM – in particular the human requirement to operate and maintain it – remains entirely neglected.

It is doubtful that, given the scale of the sealift mobilization needed in a major war, the current USMM system could sustain a major logistical effort because of personnel shortages. There are simply not enough trained mariners, both Strategic Sealift Officers (SSOs) and civilian merchant sailors, to crew a major fleet beyond a brief surge. After several months, personnel attrition will set in and hollow out the merchant fleet, which will push the US logistics system to the point of collapse. It takes months to train a merchant sailor and years to make an SSO. The result, then, is that absent a major expansion years before a war, the US risks being caught badly flat-footed in a crisis and, after several months of war, being unable to reconstitute its positions.

The US Merchant Marine Academy (USMMA) is the primary source of militarily obligated mariners, but its infrastructure requires funds for full-scale modernization from Congress. The USMMA provides more than 80 percent of the SSOs that will command and crew the vessels that will move the troops, supplies, armaments, and everything else needed to fight a major war. The Academy’s infrastructure remains essentially unchanged since its founding 80 years ago. Furthermore, the Academy’s mission-critical at-sea training (Sea Year) must be protected from the cancellations and suspensions that have happened twice in the last six years.

Adversaries of the US recognize the relevance of their own merchant marine equivalents. Iran, Russia, and China have all employed their merchant marine fleets to strategic effect, whether to break Western sanctions, sustain expeditionary deployments, or otherwise disrupt the international supply chain system.

Rebuilding the US logistics system through the USMM requires a material and human component. In a material context, the US must both expand its ability to produce militarily useful commercial and non-combat ships and, of equal relevance, work with allies to expand its merchant fleet. In a human context, the US must engage in a rapid expansion of the USMM and direct funding to the institution that undergirds American merchant capabilities, the USMMA.

Summary of Recommendations

To rebuild the US’ logistics system and revitalize the US Merchant Marine, the US should:

Modernize the US Ready Reserve Force and increase its size by a third, and modernize the National Defense Reserve Fleet, over the next five years.

This can be done quickly through the second-hand ship market, where the US can buy up relatively modern ships for several million dollars each.

Expand the stipend model already in use for MARAD’s maritime Security Program to include another 40 ships, while considering a tax incentive to increase US maritime competitiveness. The MSP already included 60 ships, but Congress should increase the stipend it provides and extend it to another 40 ships to ensure a greater peacetime fleet – merchant traffic fluctuates internationally, but providing a stipend to cover the costs of US flagging and operation is a self-evidently valuable investment. Moreover, considering a tax incentive that, in certain circumstances, allowed for US-flagged ships to reduce fees could, if properly implemented, maintain US market share and thereby husband merchant capacity for strategic purposes.

Contract with friendly Indo-Pacific powers to create a sustainable medium-term logistical capacity. This requires agreements with major Japanese and South Korean shipbuilders to create a bridge between today

and a future revamped maritime industrial base. Japan is particularly attractive because of its merchant industry's ultra-modern LNG-fueled ships.

Initiate a long-term maritime industrial base expansion program. This will require at least 15 years, and likely longer, to execute considering the degree of atrophy within the US maritime industrial base. However, a long-term expansion of the US' maritime construction and sustainment capabilities would have major military and economic benefits.

Seek to maintain a manpower pool of around 15,000 trained licensed mariners, around 5,000 more than exist today. As it stands, the US has no plan to fill a gap of around 2,000 mariners – from the current number of around 10,000 across MSP, VISA, and the domestic fleet – in the event of wartime operations and the need for a major logistical commitment. This increase of 5,000 mariners in the fleet will cover the baseline gap comprehensively, while also enabling the merchant marine to absorb human attrition during a conflict.

Within two years, conduct a full mobilization of the RRF (Ready Reserve Force) at least twice. The RRF is far too brittle to be relied upon in wartime in its current state. Multiple large-scale mobilization exercises will identify the issues within the RRF system, improve crew responsiveness and proficiency, and give the Navy and military in general a better understanding of how long mobilization will take during wartime.

Adopt a badly needed recapitalization plan for the US Merchant Marine Academy. This plan would involve approximately \$800m to \$1b over the course of a decade. The USMMA is effectively the only institution that creates SSOs for the US military. USMMA graduates form almost the entirety of the US' strategic sealift officer capacity. It is therefore critical to ensure that the USMMA is properly funded and has state-of-the-art facilities. The plan must be initiated in the next 24 months to create an institution that, if the need arises, can train a significantly

greater number of obligated merchant mariners in a much shorter time frame during a crash mobilization effort.

Protect the Academy's mission-critical at-sea training. "Sea Year" is an integral part of USMMA education. Students spend approximately one year on various merchant vessels, immersed in hands-on training covering a wide-portfolio of technical disciplines that must be mastered. This year of technical training while at USMMA is the differentiating factor between USMMA and our civilian maritime schools as well as other federal service academies. Sea Year is the real-world training ground for future SSOs.

The Sea Year training period is so critical to developing the skills needed to operate these ships, a proficiency expected of these officers by the federal government, that Congress must ensure that Sea Year continues uninterrupted. Only a unanimous consensus of the Chairmen and Ranking members of the House and Senate Armed Services Committees should intervene in Sea Year's operation.

Revamp the USMMA curriculum and invest in new teaching talent. The US military, and in particular, the US Navy, are lacking manpower specializing in logistics. Expanding and modifying USMMA curricular requirements, with an attendant funding increase, would begin to remedy this issue. As noted above, modernization of the USMMA's antiquated infrastructure is essential.

Create an affiliated intellectual center that links the USMMA to the broader service academy system. The USMM must be treated as an integral part of US military power. This requires an academic link between the USMMA, the service academy dedicated to the USMM, and the rest of the US military and defense intellectual establishment. An in-house research organization can serve as this link, while also connecting to maritime industry concerns, and thereby allow the USMM to interface more effectively with the market.

INTRODUCTION

The US faces a renewed period of great power competition on the Eurasian landmass. Great power competition is likely to slip into great power war considering the realities of strategic friction between adversaries with military strength.

It is increasingly clear that the US military is unprepared for a major power war on the Eurasian landmass. US forces are not yet modernized and optimized for high-end future combat, with the unmanned systems, long-range strike weapons, and numerous smaller delivery platforms needed to compete in a contested environment. Nor do they have the command, control, communications, intelligence, surveillance, reconnaissance, and targeting capabilities to coordinate a force in a modern major power conflict.

Ironically, despite Russia's casualties in Ukraine, it is probable that the Russian Federation has more tangible combat experience than any military today aside from Ukraine's and in turn will adapt rapidly to the realities of modern high-end war once it is given a chance to rebuild after the current war ends. Moreover, the American industrial system is a shadow of its former self, incapable of producing within months or even years the sheer volume of materiel and platforms required for a high-end Eurasian war with another great power. The bottom-line is that the US is unprepared for the confrontations it faces.

What is less appreciated is the more specific and essential elements of American power that have atrophied over time. This study treats one specific aspect of this broader matrix of capabilities, the US' logistics force and the Merchant Marine.

It is necessary to consider specific elements of American power because deterrence and war planning do not occur in wholly abstract contexts, or with generalized assessments of adversary and allied capabilities. Rather, they respond to specific issues, strengths, and weaknesses as identified in assessments of a fluid military balance.

The US military's ability to project power is central to maintaining the military balance. US Transportation Command (USTRANSCOM) is the element of American

power responsible for logistics and sustainment. The overwhelming majority – nine-tenths to be precise – of American material is transported by TRANSCOM's sea element, Military Sealift Command (MSC) capabilities. MSC, meanwhile, is part of the Navy, but has a unique organizational structure. Beyond its core fleet of 117 ships, the majority of which conduct specialized missions beyond those of logistics and sustainment, MSC's supplemental charter fleet includes civilian-crewed private ships for specific sustainment purposes. There is no reason to expect MSC's hybrid model will be easily replicated during a large-scale conflict.

In this context, the US Merchant Marine's atrophy is a serious strategic vulnerability. The US Merchant Marine has a long history as the so-called fourth arm of national defense. It sustained the US throughout multiple great power wars on the Eurasian landmass. Today, however, it has shrunk to a fraction of its former size. It lacks an industrial construction base capable of ensuring it can scale up capabilities rapidly. And most critically, it lacks the trained mariners to crew a larger fleet.

USMM hollowness undermines the US' ability to sustain a protracted Eurasian war. It is also an obvious weak point upon which American adversaries can press. If the USMM and US logistics forces do not receive significant support in the short-term and consistent long-term financial assistance to buoy their ability to conduct high-end combat sustainment, America's adversaries will be tempted to accept escalation with the US, because the US cannot sustain high-intensity long-term military operations.

The lynchpin of US logistical strength is the US Merchant Marine's trained personnel, particularly the Strategic Sealift Officers that serve as naval reservists. The US must recognize that, to cultivate the human element of a long-term logistics and sustainment force, it is critical to fund the US Merchant Marine Academy, overhaul its curriculum, and ensure it is treated like a bona fide service academy to support the fourth arm of national defense.



1.0: THE US MERCHANT MARINE IN AMERICAN STRATEGIC HISTORY

The US Merchant Marine is intertwined with American strategic history. Indeed, absent the US Merchant Marine, America would never have risen to a position of international preeminence, nor would it now be locked in a struggle to sustain a liberal commercial system that rests upon the US-cultivated Eurasian security system.

However, the Merchant Marine is not traditionally recognized as an element of US national power, and more specifically, an element of US naval and maritime power.¹ This has created large and damaging oscillations in funding for the US Merchant Marine, and since the early 1950s, a lack of strategic focus on US Merchant Marine capacity that has hollowed out this critical capability to a dangerous point.

1.1: The Merchant Marine and American Strategic Culture

The Merchant Marine suffers from the same broader strategic neglect that also afflicts US maritime power. The issue stems from within US strategic culture. Understanding that culture explains why the Merchant Marine, Navy, and maritime strategic questions are so poorly appreciated in the US.

The US is a maritime power by virtue of geography.² The world-ocean separates it from the Eurasian landmass. In a more extreme version of England and Japan, the US is so thoroughly removed from Eurasia that its primary interest is the continuation of regular trade between Eurasia's subsections and with the Western Hemisphere.³ Moreover, there has never been, and will never be, a North American economy capable of

serving as a commercial partner alternative to Eurasia. Hence, Eurasia must be the US' long-term export and import partner.

The advent of nuclear weapons, long-range missiles, and other forms of strategic attack allow Eurasian adversaries to hit targets within the United States. But the US is at little to no risk of conquest by a Eurasian power.⁴ It is simply too vast to subjugate, unlike England or Japan.

However, this vastness cultivates a non-maritime political culture. The American Eastern Seaboard, and particularly the northeast – namely New England and New York – was historically commercial in orientation. Boston and New York City were the country's largest ports, and the leading families in 18th and early 19th century America derived their wealth from merchant commercial enterprises, much like their counterparts in the UK.⁵ Yet the American south has a completely distinct political culture, defined by European-style agrarian republicanism, one that relied on northern ports for commercial revenues, but that nevertheless eschewed the outward-facing culture of a maritime power.⁶ Meanwhile, as the US industrialized, a new class of manufacturing titans developed, and with them, the factory workers of industry.⁷ These captains of industry and the laborers that enabled their exploits were aware of the value of commercial pursuits – steel exports were an integral aspect of the revenues that Andrew Carnegie accrued, for example – but were of a different disposition than the commercial merchantmen they displaced by virtue of their manufacturing focus.

This explains the general lack of interest of the United States in both naval and maritime power. The US Constitution authorizes the maintenance of a Navy to protect global commerce, but until the 1900s the US never constructed a fleet capable of actually defending American shipping, preferring to leave that task to the UK under a pan-Eurasian Pax Britannica.⁸ The US Merchant

Marine, meanwhile, grew organically from New England's colonial private fleets.⁹ It served as the nucleus of the Continental Navy during the Revolutionary War, but after victory over Britain, the fleet melted away.

Throughout the 19th century, there was no concerted effort to support a robust Merchant Marine, even during the Civil War, when the Federal Navy expanded to its then-historical peak.¹⁰ The US missed the 19th century technological transition that modified the nature of modern shipping. While prior to this, specialist warships were not wholly different in design from merchantmen, by the 1870s there were substantial differences between merchant ships and combat ships.¹¹ When American naval power began to expand, the yards that the US sponsored were overwhelmingly military ones, meaning that the US never produced a massive fleet of merchant ships to meet commercial needs. By comparison, the UK, despite its struggles to systematize its merchant fleet as a source of naval surge manpower, actively cultivated the "Merchant Service" throughout the 18th and 19th centuries through quasi-public entities that prosecuted British imperial expansion in India and Africa.¹²

Moreover, although the US gained some maritime awareness during the mid-19th century, the Civil War essentially destroyed a nascent US merchant fleet. Confederate commerce raiders were extremely effective – the CSS Shenandoah, the most successful raider, captured or sank 38 Federal merchant ships, primarily whalers, which further undermined the American merchant fleet.¹³ Insurance costs to US shippers ballooned along with dependence on foreign-flagged vessels. When US strategists rediscovered the importance of naval power in the 1890s, the focus was tilted towards a powerful battle fleet designed to seek out and defeat its adversary in a Trafalgar-style fleet action. The American naval strategic framework retained a significant focus on merchant shipping and supply.¹⁴ But the US' most significant physical steps towards naval

power, its engagement in the War with Spain and the Great White Fleet's global circumnavigation, emphasized the battle fleet, rather than merchant capacity.¹⁵

1.2: The Merchant Marine and the 20th Century Contest for Eurasia

As the Great War inaugurated open military competition for Eurasian mastery, the US, despite its general disengagement from the Eurasian balance under the Wilson administration, prepared to participate in a more robust contest. The US Shipping Board (USSB), established by the 1916 Merchant Marine Act, was not sold as a pre-war measure. But its proximate cause, the fact that only one-tenth of American commerce was carried on US-flagged shipping, had obvious connections to the European cataclysm that began in the summer of 1914. The European powers rapidly armed for a war that had long-term implications for the United States. Moreover, even if the US avoided the war, the Europeans requisitioned their merchant fleets for strategic purposes, meaning the US risked paying outlandish prices for shipping imports. Hence, the USSB oversaw the moderate peacetime expansion of the US shipping industry.¹⁶

With the US entry into the Great War, the USSB was shifted to a war footing. The USSB was placed in charge of creating a merchant fleet capable of sustaining a major American expeditionary force on the European continent and, equally relevant, sustaining the US' new European allies as the German U-Boat campaign ravaged Atlantic sea lines of communication and supply. The USSB oversaw a massive expansion of merchant shipbuilding and the requisitioning of interned ships for the USMM. It also ensured that trained labor was available at reasonable cost to the US government by standardizing pay practices and working directly with relevant unions. Additionally, it engaged in a

colossal training program for US merchant mariners that produced nearly 12,000 licensed merchant marine officers in just over one year.¹⁷

The USSB became irrelevant in 1920 when global shipping prices collapsed, and was ultimately abolished in 1934.¹⁸ But the organization demonstrates that, in a period of national crisis, the US was capable of scaling up merchant capacity rapidly. The US, however, was remarkably fortunate. It could rely on the British merchant fleet to carry much of the goods and materiel the Allies required. Moreover, the American Expeditionary Force, despite its independent command structure, could deploy as a relatively junior member of a broader coalition, reducing the logistical needs imposed upon it.¹⁹

World War II, by contrast, presented a drastically different strategic problem. Although the US did not enter the conflict for two years, it faced a far more direct threat. Not only did Imperial Japan attack US territory in 1941. With the fall of France, Germany stood astride the entire European continent, with access to its war-making capacity and – barring an emotionally brutal but strategically prudent British attack on the post-Armistice French Navy that destroyed much of the combat power the Kriegsmarine could reap from it – control of additional European fleets. Had Germany subjugated the UK or forced it from the war, Germany could have waged a sustained merchant campaign against the US subsequently.²⁰

The Roosevelt administration, however, was strategically prudent. The 1936 Merchant Marine Act created the US Maritime Commission (MARCOM). Entrusted with creating an auxiliary wartime fleet, MARCOM was given expansive powers to expand and regulate ship construction and recruit new mariners.²¹ Unlike the 1916 Act and the USSB, MARCOM was an explicitly strategically-focused entity from its establishment. Indeed, MARCOM was tasked with creating a fleet competitive with other national merchant navies, a

wise choice given the American experience during the Great War, but also an obvious prerequisite for the expeditionary Eurasian strategy that the US military had already generated.

Over the next four years, MARCOM took two major steps. First, through its Long-Range Shipbuilding Program (LRSP), it designed a 500-ship merchant fleet. Once France fell in 1940, it became apparent that the US needed several thousand ships just to keep the UK resupplied, even if the US never entered the war. The 500-ship LRSP, however, laid the intellectual foundations for the Emergency Shipbuilding Program, the framework under which the US constructed some 6,000 ships, primarily transports but also amphibious support ships, tankers, escort carriers, and even several hundred small surface combatants. Second, MARCOM recognized almost immediately that the USMM did not have enough trained sailors to crew a large fleet. Hence, it established, in 1938, the US Merchant Marine Cadet Corps, which evolved by 1943 into the US Merchant Marine Academy.

By 1943, it was readily apparent to the Roosevelt administration that the US Merchant Marine was a critical strategic capacity. Without investments in every element of the Merchant Marine – the shipyards to produce transports and other support ships and the sailors to man those ships – the system would not have worked.

Roosevelt himself clearly understood this. Hence, his remarks upon the opening of the US Merchant Marine Academy in 1943 are instructive: the USMMA, in Roosevelt's view, was meant to be a service academy akin to West Point and Annapolis because the USMMA is a strategic capacity, a service with a mission of equivalent importance to a traditional combat service.²²

In the event, the US Merchant Marine was integral to Allied victory. Throughout the war, particularly during

the Battle of the Atlantic as German U-Boats again menaced American convoys to Europe, 9,521 US merchant mariners were killed during active service.²³ This was the highest proportion of casualties for any service during the World War, and demonstrates the overwhelming importance of the Merchant Marine as the logistical link between the US and Eurasia. Without them, the US would not have been able to supply an expeditionary ground army in Europe concurrently with an offensively-minded naval-amphibious force in Asia. Nor would the Soviets, staggering under the weight of the German onslaught, have been able to survive without crucial Arctic convoys in 1942 and 1943, during which American merchant mariners, alongside their British counterparts, transported critical wartime materiel to the USSR.²⁴

The defeat of Nazi Germany and Imperial Japan did not ultimately spell the end of the contest for Eurasian supremacy. The Soviet Union, in a dominant central Eurasian position, quickly moved to consolidate its position.²⁵ It faced a United States that, despite its inherent unwillingness to embrace long-term commitments on the Eurasian landmass, had essentially no other option. The Communist adventure in Korea, persuaded the US that a commitment to Eurasia must be military in nature, no matter how fervently the US wished it could avoid conventional commitments through ideological-economic containment or a purely nuclear threat of deterrence-by-punishment. The realities of strategic competition were inexorable.

The Korean War was the first American defense of the Eurasian rimland.²⁶ It was also a war fought with legacy capacity – apart from Soviet and American fighters, none of the capabilities were new. This was equally relevant for the USMM.

Almost immediately, the US faced a major supply crisis in Korea. There were major depots in Japan that American forces deployed to the peninsula could access. But as

the prospect of a broader conflict loomed, the USMM was again employed to sustain a large American force commitment. The Military Sea Transport Service (MSTS) – the antecedent to the modern Military Sealift Command (MSC) – was the primary managerial contact point for the USMM's logistical effort.²⁷

The establishment of MSTS was far more significant than a specific bureaucratic change in the US military's organizational system. Rather, it indicated a fundamental positioning of the US Merchant Marine's role in strategic defense. MSTS was institutionalized as a strategic capacity beyond the formal table of organization within the US Navy. It was obviously a naval capacity since the Navy would be tasked with providing any sort of escort for MSTS during a major conflict in which the adversary pressured American Sea Lines of Communication and Supply. Yet the officers and sailors that operated MSTS ships were not naval personnel, but rather Merchant Mariners. The USMM, therefore, transitioned from a crucial if informal element of the US defense system into a formal aspect of American military power.

The USMM initially met Korean sealift needs through chartered commercial and merchant vessels, along with legacy transports from the Second World War.²⁸ As the conflict expanded in materiel terms, and especially as it hardened into a line of contact, for which massive quantities of artillery ammunition were required, the USMM began to requisition ships under the National Shipping Authority. These were supplemented with National Defense Reserve Fleet transports and, particularly during the war's first months, around 50 Japanese transports formerly used in Imperial service.²⁹

The USMM's sealift contribution during the Korean War's first months was immense. Merchant mariners transported 312,000 tons of supplies to Korea, some five times more than expected in July and August. It also deployed three divisions to Korea, which formed the backbone of the Pusan Perimeter's defense. The

DPRK could not pressure American logistics given the US' absolute sea control. But sustaining American forces on a 6,000-mile supply line was a feat made possible only through the skill of the US Merchant Marine. By the 1953 Armistice, the USMM had transported 53 million tons of materiel, five million soldiers, and 22 million tons of oil.

USMM capacity was not only strategically critical, but also tactically relevant. China's intervention in late 1950 shifted the balance of power on the Korean Peninsula. US and allied units, strung out across Korea's mountainous north as they approached the Yalu in a bitterly cold winter, were simply unequipped to mount a cohesive defense against a Chinese offensive that maximized the PLA's experience in dispersion, concealment, and winter operations. US X Corps, battered from China's ambush at the Chosin Reservoir, withdrew to Hungnam, along with two ROK divisions and thousands of refugees.³⁰ In just over one week, the USMM evacuated every American and ROK soldier, along with 91,000 refugees, and almost every piece of military equipment in Hungnam.³¹ This logistical feat saved a significant proportion of ROK and US combat power, and enabled its rapid redeployment farther south on the peninsula, thereby setting the conditions for UN counter offensives.

It would have been impossible to execute such an operation, and sustain it throughout the war, absent a pool of well-trained, experienced manpower to operate USMM vessels.

The USMM played a similar role in the other major Eurasian rimland crisis during the Cold War, the Vietnam War.³² At any given time during the conflict, 3,000 USMM merchantmen and 75 ships were in Vietnamese ports. The 965 vessels and 14.7 million ton carrying capacity of the USMM in 1965 was not sufficient to embark and then sustain what became a 500,000-plus strong expeditionary force. The US Maritime Administration (MARAD) the part of the US Department

of Transportation responsible for the Merchant Marine, therefore activated 1,500 Liberty Ships from the National Defense Reserve Fleet (NDRF) over the course of the conflict.³³

US merchant mariners frequently saw combat. The 7,000-mile journey from California to Vietnam was a logistical feat but, once again, not under enemy pressure. However, the North Vietnamese and Viet Cong insurgents would frequently harass American merchantmen as they transited the Long Tau river to resupply positions in Saigon. Between 1969 and 1970, the Viet Cong mounted nearly 100 attacks on US supply ships on the Long Tau. Once withdrawal was decided upon, the USMM also took the lead in extricating US forces. And during the fall of Saigon in 1975, the USMM – rather than the US Navy – evacuated just under 180,000 Vietnamese refugees in two months.³⁴

The sheer volume of cargo the USMM transported remains staggering. US forces received 81 million tons of materiel and 97 million tons of fuel over 6,799 voyages, 64% of which were conducted by chartered commercial transports.³⁵

Moreover, the USMM enabled critical capability deployments to Vietnam. The US encountered a vicious brown-water naval fight, as US forces had to operate in the Mekong Delta and along Vietnam's coastline to hunt down dispersed Viet Cong guerrilla fighters. These operations, alongside the broader blockade of the Vietnamese coastline to interdict communist supply, required the deployment of US Coast Guard vessels – Coast Guardsmen had the experience to handle small craft that most Navy sailors lacked.³⁶ The USMM transported several dozen USCG cutters to Vietnam throughout the conflict to provide American forces with this critical niche capability.

The Gulf War was the most recent major sealift operation in US history because of the sheer volume of forces

deployed, far greater than what occurred in the Iraq and Afghanistan Wars. A million-man coalition, primarily consisting of US troops, was built up over several months in neighboring Saudi Arabia ultimately to eject Saddam Hussein's army from Kuwait. This massive force required an immense amount of materiel to sustain it, even though ground troops were engaged in major operations for only a week. Not only did armored formations need to be sustained – coalition forces also executed a month-long air-naval bombardment of Iraq that hollowed out the Iraqi military and required 88,500 tons of munitions.

In many respects, the Gulf War presaged the decline of US military primacy. It demonstrated the US' preferred strategic approach to any conflict: a massive buildup in a neighboring country, a preparatory air campaign to erode enemy capacity, and finally a lightning ground assault that overwhelmed resistance. US adversaries could defeat or deter the US by preventing it from building up near the conflict zone, by both disrupting the political elements of a US coalition and holding high-value assets at risk with long-range weapons.

From a logistical viewpoint, however, the Gulf War demonstrated the increasing hollowness of the US logistical system, and by extension, of the US Merchant Marine.

The US' prepositioning ships supported the initial wave of US forces that deployed to Saudi Arabia. But an effort as large as the Gulf War demanded legitimate sealift capacity. The US sought to activate its NDRF and RRF ships rapidly and turned to US-flagged merchant shipping. Yet it quickly became apparent that US means were insufficient to the task.³⁷ The RRF was chronically unready for rapid activation – of the 96 ships listed in the RRF when DESERT SHIELD began, only 44 were activated for the buildup. Meanwhile, the US ultimately chartered another 209 ships to supplement its 173 US-flagged merchant ships, RRF/NDRF ships, and other

transports. Nearly 10,000 Merchant Mariners were needed to crew this logistical force, which ultimately moved 1.3 million tons of equipment and 3.5 million tons of fuel.³⁸

The Gulf War demonstrated the US' adaptation to a sealift shortfall. However, the Gulf War solution of foreign-chartered ships is not tenable in the long-term. Indeed, the US benefited from three fundamental advantages in 1990-1991 that masked the seriousness of the sealift shortfall: Saudi ports were well-designed allowing for the rapid offload of materiel; US transports were not under any real threat of attack; and the US, as the leader of a multinational coalition of 35 states, could rely upon allies to make up additional capacity.

In subsequent contingencies, the US did turn to the USMM and MSC to sustain its force deployments. But either American deployments were too small to strain the force seriously, as in the Balkans in the 1990s, or US logistics was entirely insulated from any meaningful adversary pressure, as in the Iraq and Afghanistan Wars. Forty RRF ships were activated for Iraq in 2003, and

sustained US force during Operation IRAQI FREEDOM and Operation ENDURING FREEDOM.³⁹ Well over half the tonnage transported to Iraq was moved on USMM ships under the Maritime Security Program.⁴⁰ But in neither case did the USMM face any hostile pressure and, as both wars lengthened, the actual number of personnel deployed to the Middle East dwindled rapidly.

The US has relied on the USMM for logistical support in every major Eurasian conflict. It is the glue that keeps the US Navy and the US' air-land expeditionary forces in the fight. But since the 1970s, the US has not been able to rely upon the legacy capacity of the Second World War to meet its strategic sealift needs. The danger is that, as Eurasian competition intensifies, the US will be caught without a strategic sealift system fit for more than a few weeks of combat at most.



2.0: TODAY'S STRATEGIC NEED FOR THE USMM

The US Merchant Marine is under-resourced as an instrument of American strategic power because no individual or organization has explicated the link between the USMM and American strategy.

The US has entered a new period of strategic competition, one that is increasingly likely to result in great power war with a Eurasian hegemonic aspirant. The revisionist powers – Russia, China, and Iran – all agree on a fundamental strategic objective, the ejection of the US from Eurasia's security system and its refashioning in a manner more amenable to their interests.⁴¹

Russia seeks to crack NATO through its war in Ukraine, at minimum rebuilding a political-economic bloc for itself that it can use to challenge the West directly, and at best intensifying fissures between the US and Eastern and Western European NATO members.

Iran, through its nuclear aspirations, hopes to become

a bona fide regional power that can achieve hegemony over the Middle East, and use that strategic position along with leverage over global petrochemical flows to join the ranks of the great powers.⁴²

China, most dangerously, has as its explicit objective the destruction of the entire US Eurasian system, the removal of US power from East Asia, and in the medium-term, the refashioning of the Eurasian economic system in a manner far more conducive to its interests, that is, the interests of the Chinese Communist Party as led by Paramount Leader Xi Jinping.⁴³

The US has failed in its post-Cold War grand strategic objective. Another cold war has ignited from the embers of its predecessor. But this time the foes are two – soon to be, three – nuclear-armed states at the head of which is a populous imperial power unconstrained by ideologically self-induced impoverishment, unburdened by lack of warm water access, and unrestricted by feeble productivity. A coalition of Eurasian hegemonic

aspirants already exists and is already coordinating actively to undermine US interests and destroy the US' Eurasian position.

America's grand strategic objective ought to shift from disruption and deterrence to credible warfighting. This distinction is relevant because the general framing of US strategy, barring a brief period during the Cold War, has been one of deterrence. The US' military goal has been to deter specific actions, namely a Russian assault on NATO, an Iranian attack on the US and its allies, and a Chinese attack on Taiwan. US deterrence has partly succeeded, although America has never truly deterred Iran from Middle Eastern escalation.⁴⁴ However, the objective of deterrence is to prevent an attack on a security system writ large, and thus to develop a status quo between the US, its allies, and its rivals that, despite friction points, is sustainable in the long-term. The US is incapable of achieving this objective today because its adversaries exist in Eurasia's three sub-regions, all have expanded the potential for expanding military capabilities, and have a clear desire to modify the balance of forces in their favor.⁴⁵

Hence, the US' objective today is both deterrence and – for the first time since the Cold War – actual warfighting against a great power adversary. Deterring Chinese, Iranian, and Russian aggression requires, in a different manner for each power, the ability credibly to deliver combat power and deny the adversary the ability to meet specific territorial objectives.

This grand strategic goal, and by extension defense strategic goal, demands a military capable of fighting an expeditionary war on the Eurasian landmass. Specifically, the US must be able to deliver combat power to various parts of the Eurasian rimland. The revisionist powers are not solely interested in the heartland, the interior, but in the rimland, the specific chokepoints through which Eurasian trade flows.⁴⁶

China seeks dominance over the Asian sea lanes, namely, the Taiwan and Luzon Straits, and, through this, the Malacca and Lombok Straits.

Russia, through its conquest of Ukraine and absorption of Belarus into an autarkic bloc, seeks to overturn the US-backed European security system by prying Turkey away from the West, asserting Russian control over the Black Sea-Levantine Basin-Red Sea maritime space, and thereby gaining leverage over European-Asian trade.

Iran, with a nuclear arsenal, will become an assertive regional force that seeks control over the Suez-Indian Ocean maritime chokepoint and the Hormuz Strait, giving it influence over two of Eurasia's maritime chokepoints.

Defeating these revisionist powers requires that the US project expeditionary combat power to specific parts of the Eurasian rimland, particularly to defend US and allied sea lines of communication and trade routes.

This broader defense strategy creates a framework within which the US military services can articulate their role in America's security. They can advance what Samuel Huntington termed a "strategic concept," a conceptual linkage between the nation's defense strategy and the specific capabilities and strategy a service employs to fulfill the requirements of that defense strategy.⁴⁷

The Marine Corps, Air Force, and to a degree the Navy and Army have adopted approximations of strategic concepts: the USMC's FD2030, the Air Force's Agile Combat Employment, and the Navy's Distributed Maritime Operations are all examples. No service has articulated a Huntington-esque strategic concept in full, but their partial attempts are a welcome step towards one: they indicate serious military intellectual investment in the problems the US faces today.⁴⁸

However, the US Merchant Marine lacks a strategic concept. This is potentially disastrous because the US cannot fight an expeditionary war on the Eurasian landmass without a USMM right-sized for the task.

The US Merchant Marine is the backbone of US expeditionary power. In every major conflict on the Eurasian landmass, the USMM has sustained American naval, ground, and air forces, and frequently done so for US allies as well.

USTRANSCOM and MSC are completely incapable of deploying major forces without the highly trained merchant mariners that the USMM provides. The fact that the USMM lacks a strategic concept, therefore, is far more than a bureaucratic issue. It is one of fundamental military relevance to the American polity, and one that must be corrected rapidly in light of a deteriorating Eurasian strategic situation.

The US Navy's military task, its strategic concept, is twofold: maintain control of the critical chokepoints along the Eurasian rimland that ensure the continuity of sea lines of communication and supply, and bring the fight to the enemy, enabling American expeditionary deployment to Eurasian hotspots. Both tasks require a robust USMM. The USMM is needed to sustain the expeditionary deployments that the Navy facilitates, transporting men and materiel to Eurasia. It is needed to supply the Navy itself, given the scale of the air-sea war that will occur if China attacks the First Island Chain. And it is needed to transport goods to the United States, sustaining the American population during a period of great-power competition and the inevitable macroeconomic disruption that a major-power war would cause.

The US Merchant Marine comprises the sinews of American power, both military and economic.

The USMM has never had an articulated strategic concept because it is not considered a "Service" in the traditional sense. US MARAD has an administrator, but US merchant mariners are civilians, and USMM ships – whether designed explicitly for sustainment or contracted for specific missions – are civilian

ships. Hence, unlike even the Coast Guard, with its Commandant, there is no institutional chief who can advocate for greater strategic focus, funding, and planning for the USMM.

The consequences of this bureaucratic dysfunction were tolerable during the early-to-mid-Cold War, when the US had a Merchant Marine large enough to sustain virtually any commitment to the Eurasian landmass, and when American military professionals and policymakers still recognized the necessity of the USMM. Institutional inertia ensured that the USMM retained some of the funding, legal support, and political focus it required. That inertia also provided the USMM with a robust enough fleet to sustain major combat operations, a fleet held over from the Second World War.

However, the Cold War's institutional inertia is gone today. The USMM is in a woeful state. Some of its challenges, the material ones in particular, could be remedied rapidly if needed. The US, as will be described in the subsequent section, can put hulls in the water if it works properly with allies. But the more fundamental issues, those surrounding personnel and training, require a major and sustained funding injection to remedy. The USMM, as a legitimate instrument of American national power, took decades to cultivate in the first place, and will take decades more to repair fully given the degree of strategic neglect from the US military and political leadership.



3.0: USMM CAPABILITY GAPS

As a strategic asset, the US Merchant Marine cannot be separated from US national security, but it suffers from many deficiencies. In order to fix its many problems, we must first review the current structure of the USMM (ships, mariner training, etc.) and what will be needed in case of a major war.

3.1: The Likely Contours of a Eurasian War

The modern USMM is a shadow of its former self, incapable of executing the large-scale combat lift missions of the World Wars and Cold War. This actively erodes American deterrence. To grasp the problem, one must understand the degree to which the US' adversaries will target US logistics, and the vulnerability of the USMM to strategic collapse in a long war.

The People's Liberation Army (PLA) has constructed a strategic system designed for two purposes: to isolate the battlespace around Taiwan and then to deliver an immense amount of combat power against Taiwan to force the Taiwanese to break under a withering strategic onslaught.⁴⁹ Chinese force structure is bifurcated between the missiles and delivery mechanisms needed to hold US forces at risk within 1,000 kilometers of Taiwan and the air, naval, and ground forces to overwhelm any resistance that remains on Taiwan.

The central operational task of the PLA is to overwhelm the US cognitively.⁵⁰ The PLA seeks to cut the US' implements of offensive power, its aircraft carriers, submarines, and air bases off from the rest of the combat theater and from their own sustainment and supply links. This two-way disruption is a form of operational destabilization that reduces still-powerful US forces to less than the sum of their parts, and enables their piecemeal destruction at the hands of qualitatively inferior Chinese forces with a better grasp

of the battlespace and more effective command, control, communications, and logistics.

Naval combat is inherently offensive. Unlike on land, terrain does not constrain action, even if weather does and even if geography funnels power into smaller patches of water – there are no ridges to be taken or rivers to be crossed, or anchor points upon which a defensive line can be established. Moreover, naval combat is bound by platforms far more than ground combat. Since warships are, by nature, large and complex, and therefore carry a variety of weapons, destroying one or a handful of ships can have an outsized effect on a unit's remaining combat power. Hence the importance of "attacking effectively first."⁵¹

The PLA understands this. It also understands that the US' logistics system is exceptionally geographically concentrated and vulnerable to attack. The US has only a handful of major fleet bases, all of which are in range of Chinese missiles, and all of which can be bombarded with sufficient intensity to disrupt port operations and repair. Moreover, considering the brittle state of US logistics, and the paucity of Merchant Mariners or USMM ships, the US Navy could remain, on paper, a reasonably competent battle force but simply lack the fuel or ammunition to prosecute a high-intensity fight for more than a few weeks.⁵²

Conversely, even if China does not "attack effectively first," and even if the US and its allies hold the line in a Taiwan contingency for the first few weeks of the war, China retains the overwhelming advantage of geography.⁵³ China can mass forces far more effectively than the US and its allies simply because Taiwan is just off its coast. In turn, it can repair aircraft and warships, and likely rescue individuals, more effectively than the US and its allies because it will not be operating from far-flung ports and navigating the political difficulties of coalition warfare.

Just as China's missile arsenal provides it with the capability for a heavy initial punch, so does China's greater industrial and repair capacity provide it with the ability to sustain a conflict for at least several months.⁵⁴ Increasing Russian subordination to China, a result of the Ukraine War and Russia's consequent international isolation, provides China with a sustainable food and energy supply less vulnerable to interdiction because of the Sino-Russian land border.⁵⁵ The Chinese economy will sputter after several months of conflict and casualties, particularly if an American-led coalition strikes targets on the Chinese mainland. But these months will be critical and will be the period in which China can use its superior strategic geography, mass, and industrial capacity to overwhelm Taiwan while US forces, out of fuel, food, and ammunition, can do little to resist the PLA's advances.⁵⁶

China's industrial advantages in a multi-month war also point to an incentive to broaden the war as much as possible, thereby increasing US resource commitments and, ideally, overtaxing the US logistics system more rapidly. The dilemma of an overstretched logistical train suggests that any Taiwan contingency is likely to occur alongside a DPRK offensive that seeks strategic advantage when US forces are engaged in a struggle with the PRC.

A conflict over Taiwan will also likely involve Chinese pressure against the Philippines, one of the two pillars of US Indo-Pacific power alongside Japan, which would also be a Chinese target.⁵⁷ All these actions will prompt an American response, simply because of the treaty alliances between the US and each actor. This will stress the US defense industrial base and force the US Merchant Marine to operate at a breakneck pace, thereby eroding it more rapidly even without combat damage.⁵⁸

Additionally, Chinese submarines will expand their patrols beyond the First Island Chain, passing through the Bashi Channel and Luzon Strait⁵⁹ before Taiwan and the US can establish a robust anti-submarine cordon. These submarines will have multiple missions, including hunting down US Carrier Strike Groups and Surface Action Groups.⁶⁰ Some of these boats will be used to attack the US' logistics system, hitting tankers and purpose-built military logistics ships enroute to major US hubs in the Western Pacific. The margin for error is so slim that even the loss of a dozen ships would severely disrupt US combat logistics.⁶¹

If the PLA can cripple the US logistics system in its first strikes, rather than targeting US combat elements or even command and communications links, it can prevent the US from waging war for more than a few weeks. This would involve an ambitious series of strikes against the US homeland, targeting major ports, US reserve fleet depots, and, if they can be tracked and targeted by Chinese ships, USMM Military Sealift Command ships.⁶²

The extent and vibrancy of China's anti-access/area denial (A2/AD) preparations show that the Chinese have a clear picture of the strategic importance of the USMM and the US logistics system. American deterrence will be weakened if its logistics cannot cope with a major Indo-Pacific War. The more brittle the US logistics system is, the more likely China views aggression as a viable policy option, and the more strategically prudent it becomes for China to accept a longer war in which US forces are likely to become combat ineffective and operationally unsustainable more rapidly than their Chinese counterparts.⁶³

3.2: The USMM's Glaring Deficiencies

The current structure of the USMM is insufficient to meet the US' strategic needs, and creates a potential for hostile escalation to a major conflict. Both the materiel and the human elements of the USMM have been hollowed out by years of neglect. This section will explain the multiple interlocking issues within the USMM that undermine capacity and erode deterrence, with particular focus on the human element of the problem.

The human element is as crucial in the USMM as it is in the military more broadly. Merchant ships are complex machines. Their management and the security of their cargo between major ports is no easy task. Several years are needed to create a modern merchant mariner capable of operating a large merchant ship. Moreover, merchant ships are massive craft, routinely exceeding 30,000 Deadweight Tons, and often exceeding 50,000-to-60,000 DWT. Cargo, bulk, container, and tanker ships often approach or are larger than 100,000 DWT.⁶⁴ These ships are far larger, therefore, than the average warship, even if they are not packed with weapons and sensors.

The sheer size and complexity of these ships necessitates an effective training structure for merchant mariners. A competent deck officer, an Unlimited Tonnage Deck Officer, requires two to four years of full-time training to qualify for a position aboard a ship. A standard mariner still takes several months to qualify on a ship – today, most mariners qualify through a 24-month apprenticeship that includes a year at sea. These training requirements might be reduced but only marginally, at best.

Ships have traditionally required more manpower, but they were also relatively simple. Absent automated subsystems and complex modern radar and

communications equipment, an officer could qualify for ship duty in around a year. Indeed, the US conducted such a crash merchant marine officer expansion program during the years before the Second World War, prior to the USMMA's establishment. Training facilities produced several thousand trained officers and sailors each year. The maritime industry itself was large enough that many of these mariners had experience at sea. Once the Second World War began, the US supplemented new officer training with a major retraining effort.⁶⁵ Taking advantage of the pool of experienced manpower that convoying had created, the US created a four-month Maritime Service Officer's Course – a merchant equivalent of a compressed OCS program – that produced thousands of high-quality, experienced mariners throughout the Second World War. None of these options is available to the US today.⁶⁶ The Merchant Marine includes some 5,500 civilian sailors, while MSC nominally operates around 120 ships.⁶⁷ This is a far cry from even the 1970s, when 3,000 US merchantmen were in Vietnamese ports at any given time.⁶⁸

The US also faces a shortfall in ships for strategic sealift. The US domestic shipbuilding industry has collapsed since the early 1980s, when the Federal Government ended the subsidies that protected American shipbuilding from more competitive foreign yards. No US yard has constructed any large non-military ship for two decades.⁶⁹ Moreover, the government and private yards that build and sustain American warships are already grossly overstressed. The US submarine fleet is in repair arrears. American carriers require long-term long-lead contracts. And yards like Fincantieri Marinette Marine that turn around ships more rapidly lack the facilities to create large merchant ships.⁷⁰ A recapitalization of the American shipbuilding industry is certainly possible, but it will take too long to be relevant for an Indo-Pacific War within this decade.⁷¹

The US has maintained an American-flagged merchant fleet of just under 200 ships, while the US Navy's Military Sealift Command and National Defense Reserve Fleet include purpose-built and converted military logistics ships.⁷² These ships are manned by civilian merchant mariners, not US naval personnel. Per the most recent MARAD estimates, 158 USMM ships are designated as "militarily useful."¹

The US maintains its merchant fleet alongside a pool of merchant manpower through two mechanisms: Cargo Preference Regulations (CPR) and the Jones Act.⁷³ Cargo Preference Regulations dictate that any Defense Department or US Government-purchased materiel, equipment, or other items must be carried on US-flagged, US-crewed ships. There are other restrictions CPR demands, including for US Export-Import Bank cargo, agricultural exports, and other departmental restrictions, but the most relevant aspect of CPR applies to military and governmental equipment. Meanwhile, the Jones Act mandates that any goods shipped between American ports also be carried on US-flagged, US-crewed ships.⁷⁴

The Jones Act's regulations create a US-flagged domestic fleet, but domestic merchant ships are too small to serve as strategic sealift ships during wartime. It does, however, ensure that some baseline of trained manpower exists from which the US can draw during a larger contingency.

The CPR system generates two additional regulatory frameworks that, when combined with the Jones Act's manpower incentives, undergird the USMM today. First, the Voluntary Intermodal Sealift Agreement (VISA) program incentivizes internationally-qualified ships and crews to make themselves available

¹ https://www.maritime.dot.gov/sites/marad.dot.gov/files/oictures/Consolidated_Summary_20181109.pdf

for military purposes.⁷⁵ Under VISA, a ship gains preferential access to DOD cargo during peacetime in return for wartime service if needed. However, 80% of VISA ships are also enrolled in the Maritime Security Program (MSP), a function of the Department of Transportation's Maritime Administration that pays shipping companies for the use of their ships in an emergency.⁷⁶ Under the MSP, 60 ships receive a congressionally-authorized retainer stipend, and in return are made available during wartime or national emergency. Given the 60-ship MSP cap, only around 15 additional ships have enrolled in the VISA program.⁷⁷ This is just under half of the US-flagged international fleet, indicating the degree to which US commercial shipping is intertwined with the US logistics force.

The extent of mutual dependence between US military sealift requirements and the US commercial fleet is a matter of concern for four reasons.

First, the 5,000-5,500 trained mariner force in the US merchant fleet is extremely difficult to expand swiftly, and inevitable wartime attrition will be hard to replace. If around half of the US merchant fleet is at least partly dedicated to government contracts, the training pipeline incentives for merchant mariners constrict, leaving a stagnant pool of manpower that cannot be expanded rapidly for wartime needs.

Second, because around a third to half of these ships are already nominally available for government use, the US cannot greatly expand the size of its logistics force with civilian shipping. If every ship in the civilian merchant fleet were militarily useful, one could double or triple the US logistics force with merchant shipping alone. But 90% of the militarily useful shipping in the US-flagged merchant fleet is already enrolled in the MSP or VISA program.⁷⁸ Hence, there is very little latent capacity that can be identified within the active merchant fleet, as distinct from its mariners.

Third, civilian shipping will be needed during wartime, raising doubts as to the convertibility of nearly half of the US-flagged fleet to logistical purposes.⁷⁹ A major Eurasian war will generate extraordinary difficulty in chartering ships. This is partly because of market issues – a major war will trigger skyrocketing shipping insurance costs. And foreign-flagged, foreign-crewed, chartered ships may be a security risk given the opacity of the modern merchant commercial industry. During a lower-intensity Eurasian rimland contingency, or a very short war, re-tasking a large proportion of US-flagged shipping may be tolerable. But the broader shipping shortage a Eurasian war triggers will increase the demands on the US-flagged fleet to deliver basic goods to the American population. After several months of conflict, the US may need to choose between meeting its logistical requirements and sustaining the US population.

Fourth, while there are other mechanisms to grow the US logistics force, the finite pool of available mariners means that, even with more ships, there will not be enough trained personnel to operate them and sustain American sealift during a long-term war. The US' National Defense Reserve Fleet Ready Reserve Force (RRF) nominally consists of 41 roll-on/roll-off and other support ships that should be crewed by 10 mariners and remain capable of activation in days to weeks, depending on the status of each ship.⁸⁰ However, these will take some 1,500 mariners to operate when fully activated, which amounts to over a quarter of the US Merchant Marine's manpower.⁸¹ This personnel surge, even if it gets all ships into working order and deploys them for sustainment, on its face appears non-viable after several months, as operational attrition and civilian needs over-stress the USMM's limited pool of qualified mariners.⁸²



4.0: GROWING THE US MERCHANT MARINE AND THE US MERCHANT MARINE ACADEMY AS A STRATEGIC CAPACITY

Expanding USMM capacity requires growing the number of merchant fleet physical hulls as well as the pool of credentialed manpower to crew these vessels.

RE-CAPITALIZING THE US MERCHANT MARINE:

US allies still maintain substantial merchant ship production facilities, even if China is the world's largest shipbuilder. South Korea and Japan maintain productive shipbuilding industries.⁸³ Japan is investing in its long-term shipbuilding capacity in a bid to solidify its position as a top-tier secondary global shipbuilder behind China, and to compete more directly with South Korean firms.⁸⁴ In the medium term, it is cheaper to contract with Japanese and South Korean firms to expand a US merchant fleet than to build out American capacity independently. Japan is also investing in cutting-edge LNG-powered ships, which fits well with the US' emphasis on a green industrial policy and its wealth of LNG.⁸⁵

However, the COVID-19 pandemic's supply chain disruptions, and continuing difficulties in international commerce, have increased the cost of new ships and delayed construction timelines. The second-hand ship market presents a short-term capacity solution to the US. With enough dedicated funding, the US could purchase relatively modern cargo and tanker ships.

The Maritime Security Program currently spends \$5 million to \$6 million annually per ship for 60 ships to ensure those ships' availability for federal service in an emergency, a sum which is dependent upon annual budget requests, programmatic questions, and fleet size.⁸⁶ The MSP's objective is to provide a functional operating subsidy. Running an American-flagged ship is far more expensive than a foreign-flagged one. American regulations are better, training is higher-quality, and merchant mariners are more skilled than the vast majority of their foreign

counterparts. Yet these factors, along with their increased pay scales, mean that US-flagged ships are simply more costly. Doubling the MSP's annual funding to \$600 million would be a politically difficult task. Yet it would increase the number of ships in the MSP program by a meaningful amount – perhaps up to 120, but more likely up to 100, if MSP grants per ship were increased to make them more competitive in a volatile international cargo market. There is simply no substitute for funding.

This does not solve the underlying issue of personnel, however. Adding ships to the merchant fleet, and by extension to the US logistics force, generates new demands for licensed officers and unlicensed crew.

INCREASING THE SUPPLY OF US MARINERS:

Licensed officers are generally produced by the federal government's USMMA as well as by civilian maritime programs within six state university systems (aka "State Maritime Academies" or "SMAs"). USMMA's mission is to produce service-obligated, experienced, fully-trained licensed mariners (aka Strategic Sealift Officers, or SSOs) to serve the nation in peacetime and wartime. Over 80% of service obligated SSOs are graduates of the USMMA.⁸⁷ In contrast, the SMAs exist to provide their tuition-paying civilian student customers with the prerequisites necessary to allow them to take the merchant marine license exam and, if they choose to do so, to work on board ships. New York Maritime reported in 2016 that only 40% of its licensed graduates sailed after graduating. In that same year, an average of fewer than 6 students at each SMA qualified to be SSOs, while at USMMA all 225 graduates are qualified to be SSOs and all will sail in the merchant marine if assigned by the federal government.^{88 89 90}

Without question, the USMMA is the personnel backbone of MSC's and USTRANSCOM's logistical sealift capacity.

RECAPITALIZE USMMA: Despite the above, USMMA has been on the losing end of both annual operating expenses and capital investment for decades. Congress

has not appropriated, nor has MARAD sought, serious investment in physical plant modernization. As the other Federal Service Academies have seen gleaming buildings and training facilities built over the decades, USMMA midshipmen have seen only "Band-Aid" fixes as they continue to train and learn in facilities unchanged for generations. Congress and MARAD have been equally negligent on operating expenses that crimp hiring, recruitment, and training.

Compare this with the lavish treatment afforded the state maritime programs, institutions that exist to serve a civilian population, not the United States Government. The Department of Transportation, through MARAD, provides the SMAs with significant financial support, and most recently is building five training ships for the SMAs. The National Security Multi-Mission Vessel (NSMV) program features a total per-school budget allocation of around \$400 million.⁹¹ By contrast, Congress has provided just enough capital investment for the USMMA to make only the most basic repairs and upgrades.⁹²

Put simply, MARAD could fund the USMMA for a full four years with the cash it has spent procuring just one new ship for the SMAs, schools which produce, again, on average, just six SSOs per year. Over a 30-year life expectancy for each NSMV, MARAD is paying almost \$2.0 million per SMA SSO. This relative cost increases if the additional financial assistance MARAD provides the SMAs is considered. By contrast, MARAD pays around \$311k per qualifying SSO from the USMMA. This gross cost disparity demonstrates the irrationality of the dearth of spending by MARAD on USMMA.

The USMMA, meanwhile, remains in a state of disrepair. The Academy's latest round of refurbishments in the 2010s improved dormitory conditions for Midshipmen – prior to this, Midshipmen at the USMMA lived in six-decade old dormitories with no air conditioning and poor insulation, an adverse situation for the sweltering heat of the Kings Point, New York summer and bitter cold of its winter.⁹³

The USMMA's training simulators are also out of date, and the curriculum suffers as a result. Most egregiously, one of the USMMA's major lecture buildings had no working toilet facilities.

Any remotely similar conditions at another Service Academy would be a national scandal.

ENSURE 100% AVAILABILITY OF USMMA SEA YEAR:

The issue is not that the USMMA needs its own training ships. Training ships fit the curriculum used by SMAs to ensure their tuition paying student customers get the time at sea required by regulations to take the license exam. Training ships are floating classrooms, with little opportunity for hands-on training. However, this model works well for the state programs. USMMA's national security mission requires that its graduates are fully trained in a one-on-one working environment on board the ships on which they will be serving upon graduation.

USMMA emphasizes a far greater set of hands-on skills that are of integral utility to the operation of the pool of military-useful commercial ships. USMMA midshipmen become competent in all aspects of shipboard operations, across multiple highly technical disciplines, by spending a year at sea on board working commercial vessels, working side by side with the ship's crew.

This immersive training program is called "Sea Year," the defining aspect of the USMMA curriculum, and part of the Academy's curriculum since 1942.⁹⁴ Split across the second and third years of undergraduate education, the USMMA's Sea Year places midshipmen on a number of US merchant ships, providing them active experience with the US merchant fleet that they will one day operate in support of combat.

The Sea Year is split into two components. During the sophomore year, midshipmen spend about 100 days at sea. During the junior year, they spend about 220 days at sea. Midshipmen are paid during their Sea Year, and while

they complete a variety of academic assignments, most important is the hands-on experience acquired. Because there is no further specialized training after graduation and before being assigned to a vessel – all of these skills must be developed during Sea Year.

The Sea Year itself is a model of practical maritime education, one in which hands-on exposure and operational experience are a priority. Considering the scale and complexity of the tasks they must conduct as SSOs, the Sea Year provides USMMA midshipmen with vital concrete operational exposure.

The USMMA's Sea Year has no analogue in any other service academy. Even the US Naval Academy, which provides its midshipmen with multiple exposure periods to operational military matters, does not deploy its midshipmen on an active ship for such an extended, continuous time period. It is this Sea Year experience that truly creates USMMA graduate SSOs and ensures that the USMMA remains the repository for the US military's sealift logistical capabilities.

There are two problems facing the Sea Year system which must be resolved.

First, the number of commercial ships participating in the Sea Year has dropped to less than half the number which were training midshipmen five years ago. Ideally, there should be a pair of USMMA midshipmen on each commercial vessel. But recent events involving alleged harassment of midshipmen at sea, and the negative publicity which resulted, have left the shipping companies unwilling to expose themselves to this risk, forcing the Academy to wedge excess numbers of midshipmen on ships that do participate. This reduces the hands-on training needed, leading to a lack of preparedness upon graduation.

The second issue is one of Sea Year cancellations by MARAD. MARAD has canceled Sea Year twice over the

past eight years because of incidents of alleged sexual misconduct, primarily against female midshipmen. These blanket cancellations, while well-meaning, are an abdication of responsibility MARAD has in training USMMA midshipmen to the standard needed. It is worth noting that prior to the most recent cancelation of Sea Year, a group of senior female midshipmen wrote to MARAD explicitly stating the value of Sea Year training and requesting that a cancellation not be implemented. MARAD chose to cancel it anyway.

It is the USMMA's job to vet, monitor, and safeguard its students from any sexual harassment or assault (SASH) while at sea, potentially by improving vetting practice, integrating greater monitoring aboard ships, and creating greater penalties for any forms of misconduct that MARAD will robustly enforce. It is, however, a deep disservice to the USMMA's midshipmen, who will one day likely crew and command American transport ships during combat, risking their lives in service of their country, to pass off the responsibility at hand by canceling Sea Year.

CONGRESSIONAL APPROPRIATION:

A robust congressional appropriation is required to modernize the Academy's campus to set the stage for another 80 years of training, but time is not on our side. It is critical to begin this recapitalization within the next 24 months, if not sooner, because of the serious shortage of mariners the US will encounter during a major conflict. In World War 2, training time for USMMA graduates was compressed to two years, and over a thousand midshipmen graduated per year from a campus which is essentially the same size. With the right funding, USMMA can easily increase capacity to meet the increased need of the next conflict, similar to what occurred in World War 2.

RE-ENTRY OF FORMER MARINERS INTO THE

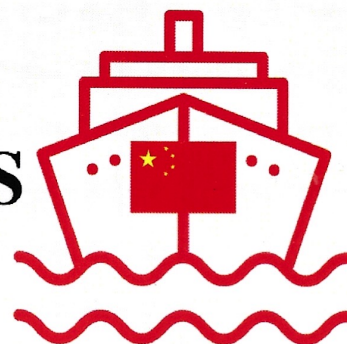
MARITIME WORKFORCE: There are, of course, a variety of older merchant mariners and retired SSOs whose licenses are no longer valid. During a major crisis, these former mariners could be encouraged to refresh their licenses and rejoin the Merchant Marine. Advances in ship technology mean that re-qualifying these mariners will take far more time than just a few hours in a simulator and a refresher test for regulatory purposes. There should be incentives to keep qualified SSOs and mariners in the fleet and have older mariners renew their qualifications as a stop-gap while upgrading capacity at the Academy.

Finally, the USMMA is not integrated with the intellectual network of the other Service Academies. This is a glaring omission. Other Federal Service Academy (e.g., West Point) students are exposed to a vibrant academic culture that includes the intellectual aspects of combat and strategy with their hands-on practical training. This serves multiple purposes: it cultivates new junior officers' intellects making them better leaders and soldiers; it makes the military a more strategically robust institution; and perhaps most critically, it attracts high-quality academics who can enrich the intellectual growth of their students.

The USMMA's curriculum, by contrast, is narrow and restricted. This is in part of necessity: the task of a Merchant Mariner is specific, and the operation of a large merchant ship is extraordinarily difficult and complex even absent the stresses of combat. At least one year of sailing experience is the minimum that should be expected of Midshipmen. Yet a lack of academy funding and poor facilities artificially undermine the curriculum by hamstringing the USMMA's ability to attract high-quality academic talent that could lead major wargames, contribute to the intellectual and strategic development of the USMM, and otherwise link the institution with its sister Service Academies.

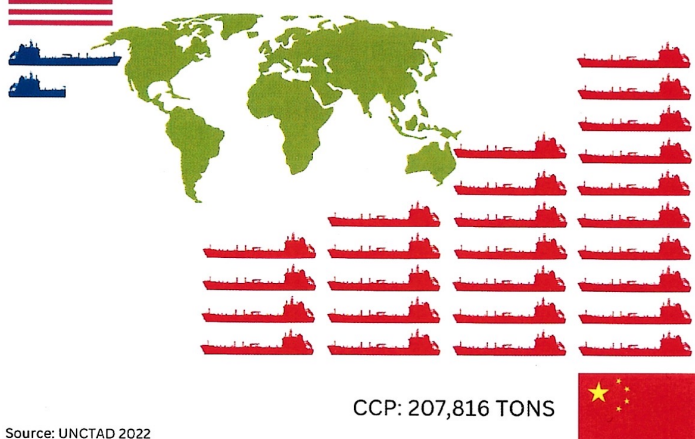


UNITED STATES MERCHANT FLEET VS CCP



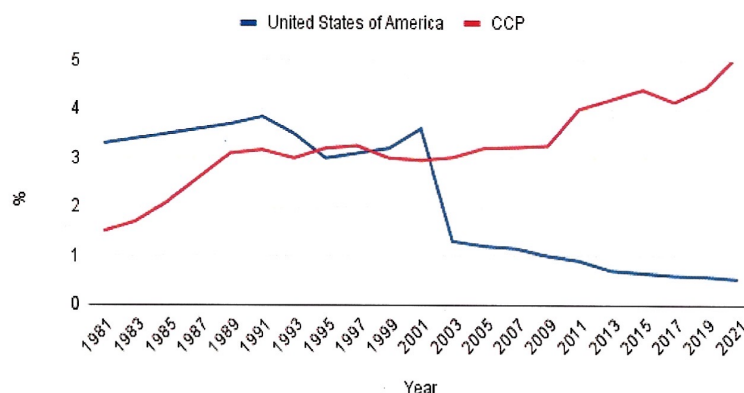
USA: 12,526 TONS

*Merchant fleet by flag of registration.
Measured in dead weight tons in thousands.



Source: UNCTAD 2022

Percentage of the World's Fleet



A DECLINING PRESENCE

On the international stage, merchant shipping presence is a projection of power. The growing divide between the United States' and the CCP's fleet in an industry that is only expected to grow is detrimental not just to the domestic economy but also to the national security, and international influence of the United States.

CCP VS. US SHIPS BY VESSEL TYPE

1684



BULK



4

355



CONTAINER



58

1133



OIL TANKER



70

1164



GEN CARGO



99

5.0: ADVERSARY MERCHANT CAPACITY AND STRATEGY

USMM sealift capabilities are clearly insufficient for sustaining the US in major combat operations and meeting American economic needs in times of crisis. In particular, the US does not have the trained manpower to crew merchant vessels at scale even if they were procured.

America's adversaries recognize the US' logistical weaknesses. Not only is each major power threat – China, Russia, and Iran – building its own sealift capacity. They are also capable of targeting the USMM, and thereby disrupting the already brittle logistical “tail” of US naval and expeditionary air-ground forces.

5.1: Chinese Merchant Forces, the Invasion of Taiwan, and Broader Chinese Strategy

China has the world's second-largest flagged merchant fleet behind Greece. If one combines this proportion with the Hong Kong-flagged fleet, the percentage still increases to just barely second.⁹⁵ Moreover, China is the world's largest shipbuilding nation by gross tonnage, and its second-largest by hulls. It has invested in its merchant fleet as a strategic capacity.⁹⁶

The Chinese equivalent of the merchant marine serves three purposes: additional sealift in a Taiwan contingency, long-term control over international supply chains, and the maintenance of a robust maritime-industrial base.

China's merchant fleet would provide crucial sealift during a Taiwan contingency. China's greatest weakness remains its militarily-optimized airlift and sealift capacities, whether those are amphibious assault ships like the US' big-deck LHDs and LHAs or heavy lift aircraft and helicopters. The PLA can likely create a lodgment on Taiwan.⁹⁷ But if the PLA cannot sustain that lodgment, it will be cut off in short order, and tens of thousands of PLA elite units – Marines,

airborne troops, and Special Operations Forces – will be captured or killed, severely degrading long-term PLA force quality.

However, sufficient civilian-standard shipping can fill the gap of logistics and sustainment.⁹⁸ PLA doctrine expects this to occur, which explains the frequency of Chinese exercises that include civilian ships. China seems to prioritize its very large roll-on-roll-off (RO/RO) ferries, which are multiple times the size of their Western equivalents, and despite their lack of armament, are ideal for delivering large volumes of men and materiel into a defended lodgment. The situation becomes even more favorable to Beijing if China can capture a major port like Taichung or Tainan, replaying the Allied playbook during the World War II Normandy invasion and driving towards major ports almost immediately after creating a beachhead.⁹⁹ China's dual-use RO/RO fleet can deliver around three divisions' worth of men and materiel to a lodgment with each wave, and over 10 days, can put 300,000 men onto Taiwan, a force larger than any that Russia has deployed within Ukraine at any time during its entire war.¹⁰⁰ Clearly, the PLA understands the role of civilian logistical capacity in a major conflict.

Alongside providing additional sustainment, Chinese-built and Chinese-flagged shipping allows the PRC to manipulate international supply chains.¹⁰¹ Throughout the COVID-19 pandemic, Beijing subtly rerouted Chinese-owned shipping that was deemed preferential to the Chinese regime, thereby ensuring the PRC's ability to survive its self-imposed major COVID-19 lockdowns and other restrictions. Regardless, the massive global presence of the Chinese merchant fleet gives China an important advantage over global commercial flows. The degree to which China's merchant capacity has penetrated almost every international market has facilitated the growth of Chinese port terminal control technology. Developed by Chinese state-backed and CCP-affiliated companies, these port control technologies can feed

information back to Chinese servers, thereby refining the CCP's long-term forecasting of macroeconomic dynamics and identifying far more precisely than the Western powers precisely how supply chains are structured.¹⁰²

Moreover, the sheer size of the Chinese merchant fleet necessitates a massive maritime industrial base, which in turn creates latent dual-use construction and repair capacity for the PLA Navy. All Chinese shipyards are dual-use.¹⁰³ Much of the time, the same dry-dock facilities may alternate between producing warships and civilian merchant shipping. Alongside a comprehensive program of state subsidies, the constant production of civilian shipping allows China's major shipyards to maintain capacity, invest in productivity improvements, and ensure that skilled workers are kept on payroll.¹⁰⁴

This maritime industrial capacity may prove critical in a major Indo-Pacific War. Even if China takes Taiwan, the economic effects of a conflict, along with the material damage such a conflict would cause, could trigger a major economic contraction in China and across the world. However, additional construction capacity can help the PLA Navy rebuild its forces far more rapidly than the US, Japan, Australia, and other allies can repair their own combat damage. This creates the opportunity for several sequential Indo-Pacific wars, which stem from China's strategic understanding of its merchant seapower.

If China can achieve its regional strategic objectives and monopolize the First Island Chain, in turn gaining dominance over the majority of littoral Asia, it can be expected to use its merchant fleet to dominate Eurasian commerce. The construction of a major shipping force implies this long-term vision alongside the short-term benefits of a merchant marine to China as outlined above. The Chinese Communist Party has a keen grasp over the role that *maritime power*, as opposed to simply naval power, plays in international political rivalry.

5.2: The Russian and Iranian Merchant Fleets and Sanctions-Busting

Neither Russia nor Iran is considering waging an expeditionary war against the United States or its allies. Both restrict their major military deployments to their regions. However, the hybrid war both are waging against the West rests on a maritime logistical component that is undergirded by their respective merchant marines.

Russia uses its merchant fleet primarily to evade sanctions, and secondarily for operational sustainment.

The Soviet Union had a merchant fleet for each of its major ports, with every individual ship under direct state ownership.¹⁰⁵ Soviet merchant shipping was a strategic tool throughout the Cold War, allowing the USSR to sustain expeditionary forces and proxies in Africa and Latin America, serving an integral role during the Cuban Missile Crisis, and enabling surveillance on Western military installations.

The collapse of the Soviet Union led to the parceling out of the Soviet merchant fleet into separate merchant stock companies, each of which was acquired by one of Russia's 1990s oligarchs.¹⁰⁶ The Saint Petersburg shipping company that was created after the USSR dissolved, the Baltic Fleet, helped assist Vladimir Putin's career as a young former KGB officer in the early 1990s.

As a land power, Russia has generally avoided cultivating significant merchant capacity, even if institutional factors during the USSR meant that there was reasonable heft behind the demands for a Soviet merchant navy. Prior to 24 February 2022, Russia employed its nominally private, often oligarchical/state affiliated merchant ships for strategic transport of illicit goods. It also used its small but capable purpose-built sealift fleet for expeditionary sustainment in Syria. This proved insufficient to support an amphibious operation in Ukraine: Russia's merchant and military

logistics fleets have had only a limited direct role in the Ukraine War.¹⁰⁷

However, the Russian merchant fleet is integral to sanctions evasion. Since 24 February 2022, Russia's exports have been under an increasingly tight sanctions regime. Overland exports to Asia have helped make up the gap caused by a severe European supply cut. But the most reasonable way to carry goods remains to transport them by ship, and the cut-rate prices at which Russia provides oil and gas to China in particular, but also to India and other Asian buyers, still strains the Russian economy.¹⁰⁸ By interfacing with the global dark tanker fleet – a fleet of older ships with poor ownership registries that often sail without transponders to complicate tracking – Russia has increased its ability to evade sanctions.¹⁰⁹ It offloads goods and energy products to the dark network, and thereby pumps its exports back into the broader international economy. Russian merchant capacity has been a critical lifeline for the Kremlin under Western sanctions stress.¹¹⁰

The overwhelming purpose of the Iranian merchant fleet is to evade sanctions, both for the Iranian regime's own financial sustainment and solvency and to ensure its critical ally Russia is militarily supported. Historically speaking, Iranian merchant activity has been essential to the country's economy, both before and after the discovery of oil in Persia. Since 1979, the Iranian regime has used its tanker and cargo fleet to export its oil despite Western sanctions and has played a major role in cultivating the dark tanker fleet that Russia and Venezuela now employ.¹¹¹

For a power of relatively limited strength, Iran clearly understands the role that a merchant fleet can play in an international military-strategic campaign. The Iranian tanker fleet has for years sustained Hezbollah in Lebanon, after the mid-2000s Hamas in Gaza, and the Houthi rebels in Yemen.¹¹² Now that Iran has a major partnership with Russia in Ukraine, it also sustains the Russian war effort by supplying Moscow with massive quantities of ammunition, loitering munitions, and drones. In the future, one can expect Iranian cruise and ballistic missiles to be found in Russian hands.¹¹³

The US' two adversaries with largely limited maritime powers are also, it is clear, keenly aware of the role that maritime power and a robust merchant force can play in their grand strategies.



6.0: RECOMMENDATIONS

These specific actions are needed to revitalize the US Merchant Marine and help war planners prepare for a possible conflict with China.

6.1: Recapitalize the US RRF

The RRF is notionally rapidly deployable, and elements of the NDRF theoretically can be activated within three months at most. The reality is far different. Even putting aside the mariner shortages that would complicate just an RRF surge, let alone a partial or broader NDRF activation, the ships themselves are extremely old. Even the RRF's RO/RO ships are over 40-50 years old. The result is that, upon activation, a number of RRF and NDRF ships will simply not be seaworthy as propulsion mechanisms and basic systems break down. Additionally, several ships may need mariners with experience on much older hulls, further extending activation timelines.

The US can relatively rapidly modernize first the RRF, and then over time the NDRF, while increasing the former's size by a third in the next five years. The second-hand ship market provides a number of options for strategically critical ships that could be US-flagged, overhauled, and then put into the RRF. Ideally, by FY2030, the RRF will be fully recapitalized and around 60-to-70 ships in size, with older ships being transferred in turn to the NDRF, allowing the NDRF's oldest ships to be phased out. This initial effort would be expensive, between \$200 and \$350 million in total depending upon precise ship prices and the number of ships purchased. But again, if combined with the proposed expansion in the MSP's stipend, the US could spend around \$3.4 billion over five years and dramatically expand the capacity and capability of its merchant fleet and sustainment forces at under a fifth of a percent of the overall defense budget. Nickels and dimes, in this context quite literally, can go a very long way.

6.2: Expand the Stipend Model for MARAD's MSP to include 100 Ships

MARAD's maritime security program already includes 60 ships for a total cost of around \$300 million per year. Congress should consider expanding the program to 100 ships, with a larger stipend per ship. A \$600 million program would increase per-ship funding to around \$6 million.

An expanded MSP seems like a large amount of cash, but in reality, it is a miniscule sum relative to almost any other national security-related expenditure. American merchant ships, meanwhile, are thoroughly uncompetitive compared to their foreign-flagged counterparts. American mariners are better-trained and have much higher safety and compensation standards than alternative flagged mariners. Yet a combination of labor force constraints and more competitive pay scales under other national flags, particularly those with far fewer regulations over the nationality of ships' crew, make it difficult for American ships to compete with foreign-flagged counterparts. A larger MSP stipend would increase the competitiveness of American-flagged ships, thereby ensuring the US retains at least a toehold in the international shipping market and, by extension, a readily-available supply of merchant ships for strategic crises.

Moreover, a larger per-ship stipend is critical to ensuring a larger US-flagged international fleet has some access to global cargo. The COVID-19 Pandemic's supply chain effects continue to reverberate. Sino-American economic friction complicates major imports and exports. As the US, Europe, India, and other major powers consider more insular trade policies in light of the risks of accelerating geopolitical volatility, cargo contracts will become even more competitive. A larger per-ship stipend can help ensure that US-flagged ships are competitive enough for international contracts.

Additionally, the US should consider a variety of other funding support mechanisms, in particular tax credits for goods imported on US-flagged ships. This would incentivize major American big-box retailers to rely on the US-flagged fleet, creating a positive feedback loop that reinforces a small but strategically crucial market presence.

Moreover, expanding the MSP should prioritize cargo capacity over vessel numbers and emphasize RO/RO vessels.

The Department of Defense's Mobility Capabilities and Requirements Study (MCRS) 2018 estimates a requirement of 15.5 million square feet of DOD-controlled organic sealift assets. The Afloat Prepositioning Fleet provides 4.7 million square feet of cargo capacity. The Surge sealift fleet provides 4.5 million square feet of cargo capacity. The Ready Reserve adds 6.1 million square feet and the Maritime Security Program (MSP) is 3 million square feet. Finally, the VISA program provides 1.3 million square feet.

As it stands, there are 18 RO/RO vessels in the MSP. Doubling capacity would provide an immediate boost to strategic sealift by putting more crucial ships in the fleet. Moreover, another 15 Container RO/ROs under the MSP with a cargo square footage of 220,000 square feet and 3,000 TEUs would afford the USMM key bridge capacity to amplify any above-identified shortfalls. All of this is viable – if Congress allocates more funding to MSP and engages in a reassessment of the way it structures CPR.

6.3: Contract for a Larger Fleet in the Medium Term

Second-hand ships will help increase the fleet in the coming five years. However, the US should begin the process of better integrating its merchant fleet with those of its allies by engaging in several long-term contracts with friendly merchant yards, in particular Korean and Japanese yards.

Both South Korea and Japan have world-leading merchant shipbuilding industries with proven rapid construction experience. Contracts with yards in both allied states would allow the US to build in future capacity to its merchant fleet. Top-line modern bulk carriers will be more expensive than second-hand ships by at least one-third. But a long-term contract line for several dozen ships from Japanese and Korean firms would build in capacity for a future merchant fleet. As these ships reach the USMM, the US can place its initially purchased second-hand ships in the Ready Reserve Force. Hence, over the next 10 years, the US can begin to build up legitimate Merchant Marine surge capacity, both in terms of trained mariners and in actual hulls. Japanese ships are especially attractive because major maritime construction companies are looking towards LNG-fueled ships, which would give the US, with its extensive LNG capacity, an excellent sustainable capability.

6.4: Rebuild the US Maritime Industrial Base

The most politically difficult effort will be to expand the US maritime industrial base. This should be done in concert with US Navy funding, since the Navy has an equally severe problem with industrial capacity for both construction and repair. The Navy and MARAD should engage in several jointly-funded shipyard expansion programs, contracting with private yards to accelerate immediate production and repair, along with providing grants to new yards to accelerate their creation. The objective should be to create a robust dual-use maritime industrial base that can increase the US merchant fleet and navy in peacetime and, in wartime, be converted to combat production and repair. This expansion will take time, at least a decade and a half.

6.5: Establish USMM Minimum Personnel Numbers

As it stands, the USMM has around a 2,000-man shortfall when it comes to trained unlicensed mariners if it were to need to mobilize fully during wartime.¹¹⁴ As it stands, MARAD has no plan to address this shortage apart from hope, a completely unacceptable approach to a crucial strategic capacity.

Combined with the likelihood of significant combat attrition, both to ships and to mariners, it is useful to create a larger margin of safety for the USMM's personnel, increasing it by around 5,000 unlimited tonnage officers from 10,000 to 15,000.

The U.S. domestic fleet employs 3,380 unlimited credentialed U.S. mariners. The Maritime Security Program employs 2,386 unlimited credentialed mariners. The VISA program employs 1,724 unlimited

credentialed mariners. Military Sealift Command (MSC) employs 5,576 unlimited credentialed mariners. The RRF employs 626 unlimited credentialed mariners. The U.S. Navy Strategic Sealift Officer (SSO) program contains 2,253 Navy reserve commissioned officers with unlimited credentialed merchant mariner officer endorsements.

Given the above, MARAD estimates the available number of actively sailing and available unlimited credential mariners to crew the surge sealift fleet at 11,768. MARAD defines active sailing as those that have sailed within the past 18 months.

MARAD estimates that the initial surge sealift fleet and commercial fleet require 11,678 unlimited credentialed mariners. The estimated requirement is for 13,607 unlimited credentialed mariners to meet sustainment sealift capability and maintain the commercial fleet, assuming all able and capable mariners are willing to sail. The U.S. appears to require 1,839 unlimited credentialed merchant mariners, with no existing plan to fill the missing capacity.

Adding another 5,000 qualified mariners to the fleet requires an expansion of the MSP and VISA programs along with – per our recommendations on the USMMA – a larger class size capacity for the Academy.

6.6: Increase RRF Mobilization Exercises

The RRF's historical test mobilizations have not demonstrated the fleet's ability to expand rapidly. It is a brittle, uneven force that requires significant fine-tuning before a major conflict. Hence, the RRF should be subjected to multiple large-scale mobilizations over the coming five years, with a major mobilization during the next two years. Mobilized RRF ships should also be integrated into major fleet exercises to ensure that all sailors, mariners, and commanders have a realistic understanding of the scale and scope of mobilization and logistics during wartime.

6.7: Modernize the US Merchant Marine Academy's Infrastructure

The US Merchant Marine Academy should be recapitalized. The ideal plan would involve around \$800 million to \$1 billion spent on facilities improvements over the next 10 years. The structure and strategy for this recapitalization plan already exist, having been developed by the Maritime Security Infrastructure Council: although it is not wholly public yet, it has been circulated with multiple legislators. The below sharpens the emphasis of this study.

The USMMA needs additional capacity for a future conflict. The USMMA is the only institution with the historical and practical knowledge and the cultural commitment to create a strong, effective merchant marine and logistics force for the US military. The fact that the USMMA inculcates a culture of service into its graduates is crucial for building the esprit de corps required for a robust, dedicated manpower pool of merchant sailors who can brave the dangers of wartime. The USMMA, given the concentration of

maritime talent that graduates from it and its extensive alumni network, is perfectly situated to ensure that new mariners can enter the fleet.

However, the vast majority of USMMA investments must go directly to facilities overhaul. The dormitories are in disrepair, the classrooms are unfit for the stifling heat of the Kings Point summers and bitter cold of the Kings Point winters, and critical academic buildings do not have working toilet facilities. This is completely unacceptable. The United States will be unable to attract new merchant talent if it does not overhaul the USMMA enough to make it a legitimately appealing institution.

If the US Naval Academy were a run-down, poorly-kept institution with no dynamism, investment, or energy, it would be clear that the US cared little for its naval combat power. The fact that the USMMA is in such a state of disrepair implies the degree to which the US does not recognize the role of the Merchant Marine in its national survival. Psychologically and practically, a massive recapitalization effort is a strategic necessity.

The new facilities, meanwhile, should be built to accommodate class sizes to the legislative limit of the USMMA. The USMMA should be capable of producing around 400 to 600 fully qualified merchant mariners each year. A much larger annual intake will create a greater pool of merchant talent from which the US can draw during wartime. Larger facilities, meanwhile, will allow the USMMA to expand intake during a crash mobilization or while conflict is already underway, putting mariners in the fleet on an accelerated training timeline.

Part of this recapitalization effort must include multiple new simulators. Simulators will assist current and future USMMA peacetime classes. In the event of a crash mobilization, serve as facilities to bring new recruits up to speed in a situation where time is essential,

and every ounce of merchant manpower and every available hull will be needed to sustain a logistical effort alongside the US economy.

6.8: Protect USMMA's Mission-Critical Training (Sea Year)

The USMMA's Sea Year is an integral aspect of the USMMA curriculum, and central to ensuring that the US' future Merchant Mariners have the competence and experience to step into front-line roles operating American logistics vessels immediately in wartime. The Sea Year must therefore be suspended only as a last resort option.

There are two policy implications from this reality.

First, the seniority it takes to suspend Sea Year should be increased. One option is to have the suspension process run directly to the Secretary of Transportation in consultation with national security officials in other departments and members of Congress with jurisdictional oversight. An alternative option would make the suspension process even more bureaucratically complex, thereby creating greater oversight and demanding that the US actually reflect thoroughly on such a drastic step. Congress could legislate that the Chair and Ranking Members of the House and Senate Armed Services Committees consent to DOT's suspension of Sea Year. The point, again, is to shift the public and legislative understanding of sea year from a specific technical aspect of merchant mariner training that has limited strategic relevance to an undeniably critical capacity for long-term national defense and deterrence.

Second, and more critically, the USMMA, through MARAD and DOT, should overhaul the way in which Sea Year is implemented, by partnering only with specific trusted maritime providers. It is the responsibility of the Cabinet level official who ultimately oversees the

USMMA, the Secretary of Transportation, to ensure that the USMMA has the funding it needs to vet and screen potential Sea Year partners, to provide major financial incentives and penalties for any sort of misconduct, and to work closely with the Coast Guard to prosecute any cases of sexual misconduct, harassment, or assault. The men and women of the USMMA will ultimately risk their lives for the United States.

In the event of a Eurasian rimland great power war, many will fall in the line of duty as their World War predecessors did, ensuring through their sacrifice the essential sustainment of American military capabilities. A properly funded USMMA that receives legitimate strategic attention must also keep its cadets safe during training from any sort of sexual misconduct.

6.9: Enhance the USMMA Educational Budget

All service academies make curricular trade-offs to ensure their cadets or midshipmen are prepared for the task ahead. Combat is a difficult business, as is combat logistics, let alone the simple operation of a complex, massive modern merchant tanker or cargo ship. Moreover, the very complexity of maritime logistics and transport necessitates a focused curriculum that creates responsible, skilled mariners to ensure proper ship operations.

However, the USMMA does differ from the other service academies, insofar as they are designed to imitate traditional academic institutions far more explicitly. The major options at the USMMA are all restricted to merchant issues. This need not be changed. But the other service academies maintain an academic staff that is far more diverse in academic tasks than the USMMA. They support these staff with a variety of research centers intended to attract traditional academic

talent, staff that would compete for tenure and adjunct positions at traditional top-tier research institutions and small colleges. There is, moreover, a gap between the on-average high-quality students and the USMMA's staff, with the exception of a handful of USMMA professors.

The solution is to increase the USMMA's personnel funding to attract top-tier teaching talent. This need not involve a tremendous increase but should generally entail USMMA teaching slots paying marginally higher than their civilian university counterparts. This change should be instituted across all departments, but particularly in departments that teach social sciences, humanities, and economics, the lifeblood of modern intellectual strategic thought.

This would create two benefits.

First, it would attract a greater pool of even more talented students, much as the other Service Academies do, which in turn filters out into broader society and raises the public's understanding of the Merchant Marine and American logistical capacity.

Second, it encourages young strategists, maritime historians, and those interested in questions of maritime policy and American strategy and defense to place the USMMA and Merchant Marine at the center of their work. Both these steps will improve the US strategic community's appreciation for the USMMA and Merchant Marine, which in turn will accelerate public support and funding for the critical steps needed to retain American maritime power.

6.10: Create a Merchant Marine-focused Research Center

The traditional military service academies, and the American military educational system more broadly, are packed with intellectual research centers that act as institutional think-tanks. The Modern War Institute has served as a proving ground for young land power theorists. The US Navy's professional educational institutions, including the Naval War College and Naval Postgraduate School, provide the Navy with an intellectual backbone to explore dozens of strategic and operational questions, ranging from the work done at the China Maritime Studies Institute to the Newport Papers' in-depth research monographs on naval history. The Air Force Academy's Institute for Future Conflict and Institute for National Security Studies does the same for airmen. Moreover, throughout their careers, the US military explicitly affords its soldiers, sailors, airmen, marines, and space force members educational opportunities to improve their intellectual understanding of the craft of combat.

The USMMA is not simply producing combat officers but civilian and military logisticians and sustainment specialists as well. However, no other service academy will create a center that explicitly investigates logistics and merchant questions that are critical to a maritime nation.

This must be remedied. Congress, through MARAD, should establish a think-tank affiliated with the USMMA, provisionally entitled the United States Maritime Institute, to conduct in-depth research on maritime questions from the viewpoint of the Merchant Marine. This institute would serve as a contact point with similar organizations at other service academies. It would also enable serious wargaming of maritime logistical issues, which would greatly improve American strategic and operational planning and inform naval force design.

There have been calls for a formal Center of Excellence dedicated to US maritime capabilities that would put the US at the forefront of maritime research. The AAF's 2018 White Paper on the concept is an excellent starting point – its recommendations should have been implemented in FY2019, a full four years ago. Yet the paper does not go far enough. Our proposal goes beyond a COE's potential to encourage technical and operational maritime research. It instead would serve as a full-fledged think-tank to interface with the vibrant academic community around the USMM, that is, with the broader US defense intellectual system.

CONCLUSION: STRATEGIC RISK AND THE MERCHANT MARINE

The US military's logistical system is exceptionally vulnerable because of its hollowed out merchant marine. The above comprises an initial set of steps to revitalize US sealift – both in a civilian and a military context – that will improve deterrence and undergird American capacity to fight a Eurasian rimland war. However, if the US continues to neglect the Merchant Marine, sealift, and logistics, the risks will only compound over time.

The Ukraine War has demonstrated the critical role of range and deep strike in modern combat. Logistical sites are central to military effectiveness. They are also exceptionally vulnerable to major strikes. Fuel and ammunition, if they can be identified, can also be hit, causing secondary explosions far more damaging than the initial munition. Beyond the physical damage of a strike, the bombardment of logistics sites is exceptionally disruptive to broader campaign planning, since the continuous attack on rear areas necessitates that resources are distributed increasingly rearward to defend logistical locations, which in turn weakens combat zone positions.

The reality of a brittle merchant marine is that the US will invite a major anti-logistical campaign during a great power war designed to disrupt its supply lines. The longer and more intense this campaign, meanwhile, the higher the likelihood that the US military will be incapable of deploying at range, that is, incapable of fighting within the Philippine Sea, let alone near or within the First Island Chain, even in limited numbers. The farther the US pulls back into the Pacific, the easier its logistical problem becomes. But this dictates an American defense perimeter that struggles to sustain even Guam, and likely transforms Hawaii once again into a front-line military installation.

This strategic transformation of the American international position would have deleterious effects on the American way of life. The US, after a major war in which it loses several thousand men and expensive ships, and experiences immense economic pressure as global supply chains unravel, would see its Indo-Pacific allies one-by-one accepting Chinese dominance. Even if combined into a coherent coalition, Japan, the Philippines, South Korea, Australia, and potentially Vietnam could not resist Chinese expansionism if Taiwan were in Beijing's hands. Taiwan dominates the First Island Chain. It is the largest of the islands in the chain in that area and it is surrounded by deepwater channels, allowing it to be transformed into a major offensive military base within a relatively short amount of time, perhaps only weeks if the PLA can capture Taiwanese air bases, ports, and airports largely intact. Japan, Korea, and the Philippines will fall in line or face a long-term blockade and strategic strike campaign, while Australia will be increasingly cut off from the US and need to seek a separate peace.

The unraveling of the American strategic position in Eurasia can be stopped only by fighting forward, holding the strategic geography that the US and its allies have accrued over decades of diplomacy and nearly a century of conflict. This demands a US Merchant Marine fit for purpose. If this is not created, the US will need to be content with a political economy far more restricted than its current model, and by extension, a society that is poorer, more limited, and more fractious – a society unlikely to be able to maintain the benefits of the Republic for which it is created.

GLOSSARY

CPR	Cargo Preference Regulations, dictating that any US military or government supplies must be carried on US-flagged, US-crewed ships.	NDRF	National Defense Reserve Fleet, a fleet of logistics ships kept in reserve and maintained by MARAD for activation depending upon national requirements.
Jones Act	The Federal Law that requires traffic between US ports to be carried upon US-flagged, US-crewed ships.	RO/RO	Roll-on/Roll-off, a type of ship designed to transport and receive equipment directly from shore.
LRSP	Long-Range Shipbuilding Plan, MARCOM's first major strategic framework, ultimately scrapped in favor of a much larger shipbuilding expansion.	RRF	Ready Reserve Force, the portion of the NDRF that can be activated in five to ten days.
MARAD	The US Maritime Administration, the agency of the Department of the Treasury that regulates US maritime activity and maintains the US merchant fleet.	SMA	State Maritime Academy, the six maritime training institutions that are not federal service academies, akin to State Military Colleges.
MARCOM	The US Maritime Commission, established in 1936 to expand US maritime capacity as the international situation deteriorated, ultimately designed and produced the logistics ships for a Eurasian war.	SSO	Strategic Sealift Officer, merchant marine officers who are naval reservists and who will serve on US logistical ships during wartime.
MSC	Military Sealift Command, the US Navy's logistical element and naval component command of USTRANSCOM.	USMM	US Merchant Marine, the civilian mariners and vessels that comprise the US-flagged fleet.
MSP	Maritime Security Program, the MARAD program under which 60 US merchant ships receive a Congressionally-authorized stipend in return for a service obligation.	USMMA	US Merchant Marine Academy, the federal service academy for the USMM.
MSTS	Military Sealift Transportation Service, the predecessor to MSC.	USSB	The US Shipping Board, an emergency initiative begun in 1916 to expand US maritime capacity on the eve of its entry into World War I.
		USTRANSCOM	The Functional Combatant Command responsible for US logistics.
		VISA	Voluntary Intermodal Sealift Agreement program, a MARAD program under which a private US merchant ship gains preferential access to US military transport contracts in return for wartime obligations.

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