Rewriting the Future of America’s Maritime Industry to Compete with China

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Cover: The tankers Stena Immaculate and Stena Imperative, which have been reflagged as US registered vessels with US crews. (Courtesy of Crowley Maritime)
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Mr. Roberts first became involved in transportation regulatory issues in 1979 when he was assigned to the Transportation Section of the Justice Department’s Antitrust Division. He has remained involved in transportation legal and policy issues for most of his career as a lawyer and lobbyist in Washington, DC, and as an executive with a leading American shipping company (Crowley Maritime Corp.), serving from 2008 as general counsel and as a member of the company’s senior leadership. Roberts’s responsibilities included liaising with the Pentagon, Coast Guard, Maritime Administration (MARAD), and other government agencies on maritime security matters. He also served as president of the American Maritime Partnership (AMP), a leading maritime trade organization, for two years through the end of 2021.

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For decades, companies outside the United States have dominated the international commercial shipping and shipbuilding industries. At various times since World War II, Japan, Korea, and certain European countries have been able to leverage their export-driven manufacturing economies and government support to become world leaders in commercial shipbuilding and major players in international shipping. The People’s Republic of China (PRC) has taken that strategy to a new level and now produces more than half the large commercial ships delivered annually, controls scores of seaports in dozens of foreign countries, and owns almost one-fifth of the global commercial fleet.

American commercial shipbuilders and US flag shipping companies have long faced fierce headwinds in international markets and have seen support from the US government dwindle. The US reset its maritime policies in the 1990s when America was the sole superpower and the security benefits of a robust commercial maritime industry were in doubt. By the end of 2022, Americans owned only 3 percent of the 55,000 ships in the global commercial fleet, including just 178 large US flag cargo ships, 85 of which are committed to international trade (see tables 1 and 2 below for a breakdown of US and global commercial fleets).

The emergence of the PRC as a challenger to America’s global leadership has forced sweeping changes in US policy and spending priorities to boost America’s economic and military security. This report recommends that the US reform its policies governing America’s commercial maritime industries because shipping and shipbuilding are core components of na-
These industries remain especially crucial in the twenty-first century, as international trade is more important to a healthy American economy today than ever before. Yet Americans have almost no control over the maritime logistics systems that feed the US economy. The pandemic-induced supply chain crisis showed how much damage can be done when those systems break down.

From a military standpoint, just as the war in Ukraine has demonstrated the continued importance of land-based logistics, meeting extraordinary maritime logistics challenges would be a key to prevailing in a Western Pacific confrontation. The Pentagon has recognized that, in such a conflict, the American fleet of cargo ships should increase to more than twice its current size (to about 200 ships) just to meet the US military’s fuel resupply needs. A baseline fleet of 250 ships is a conservative but more realistic estimate when policymakers consider attrition, uncertainty, and other factors, such as the needs of allied and civilian populations. A larger American commercial fleet would also help deter conflict by expanding the American presence throughout the Western Pacific; providing a response option to quarantine, blockade, and gray-zone tactics by the PRC; and reducing the risk to our peacetime maritime supply chains.

Figure 1. Revised Baseline US Flag Sealift Fleet

This shortage of sealift capacity is a major gap in America’s ability to deter PRC aggression, and the US government has no clear concept of how to fill it. As the Pentagon has recognized, we cannot rely on foreign ships to meet this need, so American-controlled and -crewed ships are essential. Developing (or significantly expanding) a fleet of US Navy cargo ships would be an extremely expensive and inefficient use of taxpayer resources. The best solution by far is to grow the US flag commercial fleet operating in international trade to 250 vessels crewed and controlled by American citizens. These vessels cover most of their costs through revenues from private-sector customers and are therefore orders of magnitude less expensive than organic Navy vessels. They operate daily (not just during exercises) and for generations have proven their value in planning and executing maritime logistics operations in partnership with the Pentagon.

A separate but related gap in deterrence concerns the US shipbuilding industrial base. Improving America’s ability to sustain US forces in a protracted conflict would significantly contribute to deterring PRC aggression. America’s shipbuilding industry currently consists of major defense contractors that build the best combatant ships in the world and a significant number of commercial shipyards that build a wide variety of ships for use in domestic trade. However, decades of right-sizing in pursuit of efficiencies have left these shipbuilders and their suppliers unable to surge production to support wartime demands. Cre-
Figure 2. Notional Implementation Schedule—Fleet Expansion

<table>
<thead>
<tr>
<th>SHIP TYPES</th>
<th>2023 1ST REG. / 2ND REG.</th>
<th>2024 1ST REG. / 2ND REG.</th>
<th>2025 1ST REG. / 2ND REG.</th>
<th>2026 1ST REG. / 2ND REG.</th>
<th>2027 1ST REG. / 2ND REG.</th>
<th>2028 1ST REG. / 2ND REG.</th>
<th>2029 1ST REG. / 2ND REG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tankers</td>
<td>20 / 0</td>
<td>+ 10 / + 25</td>
<td>+ 15 / + 25</td>
<td>+ 5 / + 5</td>
<td>+ 5 / + 10</td>
<td>+ 5 / + 10</td>
<td></td>
</tr>
<tr>
<td>Ro-ro</td>
<td>21 / 0</td>
<td>+ 0 / + 5</td>
<td>+ 5 / + 5</td>
<td>+ 5 / + 5</td>
<td>+ 5 / + 10</td>
<td>+ 5 / + 10</td>
<td></td>
</tr>
<tr>
<td>Containers</td>
<td>39 / 0</td>
<td>+ 5 / + 10</td>
<td>+ 5 / + 10</td>
<td>+ 10 / + 15</td>
<td>+ 10 / + 15</td>
<td>+ 10 / + 10</td>
<td></td>
</tr>
<tr>
<td>Gen Cargo</td>
<td>10 / 0</td>
<td>+ 0 / + 3</td>
<td>+ 0 / + 3</td>
<td>+ 2 / + 5</td>
<td>+ 3 / + 5</td>
<td>+ 5 / + 10</td>
<td></td>
</tr>
<tr>
<td>Dry Bulk</td>
<td>4 / 0</td>
<td>+ 2 / + 2</td>
<td>+ 0 / + 2</td>
<td>+ 3 / + 10</td>
<td>+ 2 / + 5</td>
<td>+ 2 / + 5</td>
<td></td>
</tr>
<tr>
<td>LNG / Cryo</td>
<td>0 / 0</td>
<td>+ 3 / + 3</td>
<td>+ 3 / + 3</td>
<td>+ 5 / + 5</td>
<td>+ 2 / + 8</td>
<td>+ 0 / + 5</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0 / 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>95 / 0</td>
<td>105 / 0</td>
<td>135 / 50</td>
<td>165 / 100</td>
<td>195 / 150</td>
<td>225 / 200</td>
<td>250 / 250</td>
</tr>
</tbody>
</table>

Source: Author.
Note: Possible fleet expansion scenario assuming legislation is approved in 2024 with implementation beginning in 2025.
ating spare idle capacity would be costly and is unlikely to enable rapid mobilization. Instead, as the report discusses below, America should expand and diversify its shipbuilding industrial base through a program designed to enable series production of technologically advanced vessels for dual use in international commercial markets and as standby support for use in a military confrontation. This would better position the industry to scale up ship production quickly in the event of conflict.

This report focuses on policy changes that would fill the gaps in our sealift capacity and shipbuilding industrial base in the short to mid-term. There is no magic wand—it is dangerous to think we could achieve these goals by deregulating the US industry or attacking foreign government subsidies. Instead, existing programs that support a US flag fleet in international trade provide an excellent template in that they contract out an essential national security function (providing standby sealift capacity) to the private sector, which can perform it effectively and at a much lower cost to taxpayers than the government could do itself. This report’s basic approach is thus to reform and expand those programs to meet the new threats. This will not only fill the gap in standby sealift capacity but also help deter conflict in other ways, including by reducing risk to our peacetime maritime supply chains.

Policies to achieve these objectives should first address a key threshold issue, which is manpower—having enough highly trained mariners and shipbuilders to meet current and future needs. The American maritime industry is facing the same kinds of challenges that many other employers face in a technologically evolving economy with historically low unemployment. Maritime industry groups and government agencies are proactively working to develop and implement solutions. Those efforts need to be a top priority. Adopting the 250-ship program proposed in this report will help in this regard by giving recruits confidence that a career in the maritime industry can provide long-term employment and growth opportunities.

Congress would need to pass legislation (see chapter V of this report) to consolidate and update the existing programs and grow the fleet from 85 to 250 US flag ships. The updates include reforms that would address the economic viability of the program, mandate innovative procurement procedures that would base participation in the program on providing the best value to the government in a variety of areas, and phase in a requirement that American shipbuilders will eventually build all vessels for the 250-ship US flag fleet. The updates also propose legislation creating a new, limited second US ship registry that would require US citizen control, crewing from US or allied nations, and other standards to be set in the legislation. Ships in the second registry would not close the military sealift gap...
(since US crews would not be mandatory). However, at minimal cost to taxpayers, they would contribute to US national and economic security in other ways, such as improving supply chain security and deterring gray-zone tactics.

Assuming approval of appropriate legislation in 2024 and implementation of the program beginning in 2025, by the end of this decade, a 250-ship US flag fleet would close the sealift gap; an additional fleet of 250 American second-registry ships would further support US economic and gray-zone security; and US commercial shipbuilders would be producing about 15 technologically advanced, dual-use commercial ships per year.

The cost to taxpayers of implementing this program depends on several factors, including the extent to which Congress adopts other reforms that would incentivize the use of American ships and the effect of competitive procurement procedures. However, even if taxpayers directly fund all the incremental cost of a fivefold expansion of the American international fleet and the construction of 10 to 15 of those ships per year in US shipyards, the new programs when fully implemented would cost between $2 billion and $3 billion more than the current programs. Various “Ship American” mandates or incentives could dramatically reduce that cost. Yet if the options are either to (1) ignore or paper over the current maritime deterrent gaps, (2) have the Navy fill those gaps at an extraordinary cost, or (3) implement a program like the one outlined here—one that leverages enhanced American commercial capacities not only to fill the sealift and shipbuilding gaps but also to support American military and economic security in other ways, and at a fraction of the cost of having the government do it—the choice is clear.

Finally, the report includes a brief discussion of long-term changes that would put the commercial maritime industry in general on a healthier trajectory. These include fundamental reforms of the regulatory system that governs the international shipping industry and possible structural changes to enhance and elevate US government oversight and management of the American commercial maritime industry.

Enacting and implementing the recommendations in this report would reverse decades of policy choices that in hindsight were badly misguided and left us vulnerable. Such changes would set the stage for the resurgence of an American maritime industry that can regain its role as an important instrument of national power and help deter military and economic aggression by our adversaries.

It is scarcely possible to overstate the need for urgent action in this domain (as in many others). As a senior colleague from Hudson Institute explains, “A united and vigilant America can still deter our adversaries from pressing their challenge to a point of no return. New wars that would dwarf the Ukraine conflict, engage Americans in direct combat, and potentially engulf the entire planet in the most destructive conflict ever waged are not, yet, inevitable.”

2
I. INTRODUCTION

No one can doubt that China is a serious geopolitical rival waging an active and aggressive campaign to dislodge America as the global leader and replace it as the architect of a new world order. Analysts have compared that campaign to the ancient Chinese game of Go, in which players seek to gain advantages over their opponents in multiple domains. China’s impressive growth in various military domains has prompted America and its allies to increase investment in military resources. Similarly, these countries are taking serious actions to counter China’s increasing dominance of certain economic sectors. America and its allies have beefed up export controls, tightened restrictions on Chinese foreign direct investment, sought to diversify sourcing for key components away from China, and begun providing government support to re-shore certain critical industries, including microchip manufacturing and rare earth refining, to America.

This report focuses on the commercial maritime sector and specifically on how China’s massive commercial shipping and shipbuilding industries give it enormous advantages over America in both the military and economic domains. China developed those industries intentionally, leveraging the inherent advantages of a low-wage, export-driven economy with extraordinary support from the Chinese government. America’s high-wage, post-industrial, consumer-led economy has left it unable to compete internationally in heavy industries like shipping and shipbuilding. The US has gradually withdrawn most government policies supporting its commercial shipping and shipbuilding industries, leaving American companies at a severe disadvantage in international markets. Implicit in those policy decisions are assumptions that more robust American participation in international shipping and commercial shipbuilding would no longer be necessary. In the Pax Americana post-war era, and especially since the fall of the Soviet Union, this seemed like a reasonable bet.
Key assumptions driving those decisions are no longer true. Pax Americana has ended, as China is a formidable power pursuing a military and economic strategy that it has specifically and explicitly designed to displace America as the global leader. Its commercial maritime industries provide key capabilities and assets that support its pursuits, assets that are mostly absent from America’s toolkit. China’s shipyards deliver more large commercial ships in a few days than America’s shipyards deliver in a year.4 China controls almost 10,000 large commercial ships, including more than 6,200 vessels registered in China or Hong Kong (see table 1).5 The US-owned commercial fleet totals 1,763 ships, including only 85 large cargo ships registered in the US and operated in international trade (see table 2).6 Under its Belt and Road Initiative, China has spent more than $1 trillion on hundreds of foreign infrastructure projects to extend its global presence,7 including more than one hundred billion in maritime support linking them together.8 These resources have helped China build up its navy at an astonishing pace; produce the world’s largest coast guard and maritime militia to carry out gray-zone tactics; and gain substantial and increasing influence over the maritime logistics supply chains that move trillions of dollars in global commerce.

It is not enough just to say that America did not contemplate these dramatic developments when it set its maritime policies. We should also assess the risks to American security interests that China’s maritime buildup poses and evaluate options to mitigate those risks. This may include policy changes that would help America’s commercial maritime industries contribute more effectively to the competition with China. Several congressionally mandated studies are underway to assess these issues, and other research organizations have begun exploring the problem.9 The undertaking is challenging given the miles we have traveled down this path, and proposed solutions need to be realistic and forward-focused rather than attempts to undo the past.

Several important considerations frame this analysis. The first concerns how America responds in general to the challenges China presents. After many decades of America-financed economic stability and growth, one reaction (often visible in popular media) to China’s impressive growth and audacious challenge to the America-led global order is simple outrage—outrage that America’s mostly benevolent policies toward the developing world in general, and toward China in particular, would lead the main beneficiary of those policies to turn on us and contest America’s continued leadership. When outrage drives American policy, its ultimate objective will be the defeat of China by whatever means necessary. American outrage, matched against a Chinese leadership driven by resentment that America would

Table 1. Selected Data regarding Global Commercial Fleets

<table>
<thead>
<tr>
<th></th>
<th>TOTAL VESSELS</th>
<th>RANK</th>
<th>NATIONAL FLAG</th>
<th>FOREIGN FLAG</th>
<th>RANK BY CAPACITY (DWT)</th>
<th>RANK BY FLEET VALUE</th>
<th>MAIN VESSEL TYPE (BY VALUE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China and Hong Kong</td>
<td>9,829</td>
<td>1</td>
<td>6,218</td>
<td>3,547</td>
<td>1</td>
<td>1</td>
<td>Container (34%); Dry Bulk (33%); Tankers (10%); Offshore (16%)</td>
</tr>
<tr>
<td>US**</td>
<td>1,783</td>
<td>10</td>
<td>774</td>
<td>1,001</td>
<td>11</td>
<td>4</td>
<td>Ferries and Cruise Ships (65%)</td>
</tr>
<tr>
<td>World</td>
<td>55,037</td>
<td>25,345</td>
<td>28,509</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figures may not add up due to unknown country of registry for some vessels. See source notes for table 2.5.
**See table 2 below for further information on US fleet.

even question China’s ascent as its well-earned destiny, is a recipe for confrontation with potentially catastrophic outcomes.

The opposite American reaction would be resignation. China’s impressive growth in virtually all domains of competition reflects a highly motivated and more disciplined culture (albeit disciplined by an authoritarian regime) that America let slip away in innumerable ways because we had no competitive force to keep us on our toes. We got lazy and are caught in Thucydides’s trap, in which an emerging power threatens to displace an existing great power in decline, which usually leads to war.10 A resigned American policy accepts the inevitability of US decline and stumbles toward surrender on the same paths that brought us to this place.

The belief underlying this work is that America’s best response is neither outrage nor resignation but to step up to the chal-

### Table 2. Selected Data regarding US Flag Commercial Fleet—Number of Vessels

<table>
<thead>
<tr>
<th></th>
<th>MSP**</th>
<th>NON-MSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Vessels (From Table 1)</td>
<td>1,783</td>
<td></td>
</tr>
<tr>
<td>US Flag</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>774</td>
<td>60</td>
</tr>
<tr>
<td>Non-cargo vessels*</td>
<td>596</td>
<td></td>
</tr>
<tr>
<td>Cargo Vessels</td>
<td>178</td>
<td></td>
</tr>
<tr>
<td>Domestic Trade</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Tanker</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Containership</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>General Cargo</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Ro-Ro</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>International Trade</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Tanker</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Containership</td>
<td>39</td>
<td>33</td>
</tr>
<tr>
<td>General Cargo</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Ro-Ro/Vehicle Carrier</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Dry Bulk</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

*Includes passenger vessels, offshore workboats, large tug/tow boats, research/specialty vessels not considered militarily useful.

**Vessels in international trade enrolled in the Maritime Security Program.

***From Table 1. Foreign flag vessels cannot operate in domestic trades and are not considered militarily useful. Detailed fleet information is not available.

lenge and compete in every domain that matters—government, military, economic, and cultural. What it means to compete depends on the context, but in part it means to take the necessary steps to deny China the ability to dominate America in any important domain. It is not enough to pursue military superiority alone. We should also drive toward a more effective government, a more diversified and sustainable economy smartly engaged in global trade, and a culture that reflects higher values. Continuous progress in all these domains is essential for America to continue making the case that it is not just who leads the global order, but how they do so. Despite mistakes that human leadership will always make, the American century has seen the greatest economic and social progress in human history. In no way does the authoritarian leadership of the Chinese Communist Party (CCP) offer a better world vision.

The second consideration concerns the extent and manner in which America’s trade and economic policies adjust to the challenge of China. America’s leadership in fostering economic globalism has produced an historic level of economic integration and growth. It has lifted billions out of poverty, and the scope of economic interdependence has arguably preserved global peace more effectively than any set of government promises could. Very large constituencies within almost every nation have vested interests in not letting their political leadership shoot their customers in other nations. Yet in our pursuit of globalist ideals, we have ignored the blind spots, relying on faith that market forces will always preserve American security interests. The same kind of faith led us to plow ahead in opening our markets wide to China on the belief that prosperity would lead them toward becoming a liberal democracy. In both areas, we misplaced our faith, and we find ourselves scrambling to figure out how to manage after one of our best economic partners has turned into our geopolitical adversary. The belief here is that although there are very ominous signs on the horizon, we should play the game out to its conclusion: give economic integration the chance to keep its winning streak going and help deter a global conflagration that could cost more lives than were lost at any time in history.

While economic decoupling is not the correct path, we also need to fix the vulnerabilities in our military and economic security that grew up in our blind spots. Almost by definition, this will require smart industrial policy—government support for important American industries that advance our military and economic security interests but that have been left behind in our pursuit of globalist ideals. There may not be many such industries, but for reasons discussed below, shipping and shipbuilding are surely among them. And although revising those policies may involve government supports that suboptimize overall macroeconomic performance, most people, having endured the uncertainty and economic losses that the pandemic-related supply chain crisis caused, would accept a few basis points in lower GDP growth in exchange for a more secure and resilient economy. That is especially so if the threats come from possible intentional acts by an adversary and are not just the apparent byproduct of a once-in-a-century event.

A third framing consideration concerns the urgency of acting given that the nature and timing of potential Chinese aggression will be unpredictable. We should absolutely take Chinese President Xi Jinping at his word when he says that China will seek to replace America as the global leader and that attempted “reunification” of Taiwan under the PRC will be the first step. How and when China will act is the great unknown. For a variety of reasons, a sudden, violent PRC attempt to invade Taiwan seems less likely than a more patient strategy using propaganda, economic pressure, gray-zone tactics, quarantine, or a blockade. Yet extensive and credible evidence suggests that China has taken most of the steps necessary to prepare for an all-out attack on Taiwan within the next one to four years.

For American policymakers, this indicates the need to act with a high degree of urgency. We need to assess the risks to American military and economic security from America’s and China’s positioning in various sectors as well as the options available to degrade China’s ability to exploit its advantages and improve America’s positioning. We have started to do
this by taking action in high-tech areas, particularly microchip manufacturing, where there is a broad consensus on the need to stay ahead of China from a technological standpoint and to produce a reasonable share of the brains of all the machines that control our lives.

The subject of this work, commercial shipping and shipbuilding, thus requires urgent attention even though this sector is largely out of sight and out of mind to most Americans. The reality, however, is that these industries affect everyone. From a military standpoint, Russia’s invasion of Ukraine has provided vivid confirmation of the continued importance of logistics to battlefield success. Maritime logistics would be key during a conflict with China, with the battle zone consisting of islands thousands of miles away. America and its allies need to have the ships, mariners, and shipbuilders to meet the challenge, particularly in the case of a prolonged conflict that affects regional allies. The Pentagon could not succeed in such a war without support from the commercial maritime industry.

From an economic standpoint, ships move about 90 percent of global merchandise trade—11 billion tons of freight carried 60 trillion ton-miles in 2021. Basic commodities, manufactured products, and intermediate goods in highly interconnected global supply chains affect almost every product American consumers buy. Ships provide the physical link for merchandise between nations and economies in the same way that airplanes do for passengers and undersea cables and satellites do for information. And while American companies hold leading market positions in international aviation and cable and satellite communications, the vast differences between America’s and China’s commercial fleets and shipbuilding capacity reflect divergent economic positioning and policy choices. These asymmetries raise serious questions related to America’s ability not only to deter military aggression but also to secure maritime logistics supply chains that are critical to American economic security.

In this paper, chapter II briefly summarizes the basic business and regulatory frameworks of the commercial shipping and shipbuilding industries, which help explain why there are vast asymmetries between US and Chinese capabilities in this sector. Chapter III next reviews the maritime policies of America and China, including data on what those policies have produced. Chapter IV then assesses the risks to American military and economic security resulting from China’s ascent as a global maritime powerhouse and discusses the ways in which America is mitigating or can mitigate those risks. While no single answer addresses all risks (as with any complex problem set), an essential question is whether and how America should update its maritime policies to produce an industry that can better mitigate the security threats of today and tomorrow.

Chapter V outlines key elements of a proposed new maritime policy. It is both revolutionary and mundane. It builds on existing programs that have produced an American industry that, while not adequate to the current challenges, is substantial and has served America well. It would expand and reform those programs to produce an American international fleet that is roughly three times its current size, meeting the realistic military security needs of today and tomorrow. The new policy would also authorize a limited second American ship registry as a force multiplier supporting American economic and gray-zone security interests. Further, it would establish a consistent demand signal for the construction of modern, technologically advanced commercial vessels that would enable American shipbuilders to make the investments necessary to enhance efficiencies, bring down costs, and better contribute to America’s technological and industrial base. It would leverage innovative acquisition processes to draw the best ideas and proposals from the private sector to meet well-defined government objectives and to ensure that taxpayers receive the best value for their investment in America’s maritime security. And it would provide immediate enhancements to American security that would help deter near-term threats and grow over time as the program matures.
Shipping and shipbuilding are closely related industries that share certain general characteristics. Both are maritime businesses that have significant skilled and semi-skilled labor inputs. Countries have viewed both as relatively lower on the value-added chain while new sectors and opportunities emerge in constantly evolving and growing economies. Many strategists nevertheless recognize the continuing importance of shipping and shipbuilding to a country’s military and economic security interests.16

Aside from these similarities, the two industries are very different from a business and regulatory perspective. Cargo shipping is a transportation service business dependent on demand among those needing to move freight from point A to point B. Key considerations from the shipping customers’ perspective include cost, efficiency, and reliability. Ocean and inland shipping are almost always discrete segments of larger transportation and logistics supply chains. Customers are generally indifferent to the mode of transportation—truck, rail, pipeline, and waterborne transport are often interchangeable—and overall cost, efficiency, and reliability of the transportation supply chain can have a major impact on product sourcing decisions.

Ships are mobile assets that regulators consider the sovereign territory of the jurisdiction in which their owners register them.
This drives certain key requirements, including immigration (nationality of the crews), labor protections, and taxes. Ships operating in international trade (including US import-export trade) are essentially free agents. Owners can register them in almost any jurisdiction worldwide, including registries that have no meaningful connection either to the named jurisdiction or to the trade routes the ships serve. In contrast, owners must usually register ships that operate in a country’s domestic trade in that country and obey its laws, including laws regulating immigration, labor standards, safety, health, taxes, and other matters. America’s domestic shipping laws (referred to as the Jones Act) confirm this basic regulatory construct, similar to the regulations governing domestic trucking, rail, pipeline, and air transportation services.

In contrast, shipbuilding is a heavy manufacturing industry that creates long-lived capital assets. Although the materials and components necessary to build ships may come from many places, fabrication of the hull and superstructure and final assembly take place in a specific location that is subject to all regulatory requirements of that location. While an owner could in theory take a ship that was built in Mississippi and register it in Liberia (and thereby avoid US labor, tax, and regulatory costs in operating the ship), the Mississippi shipyard will always be fully subject to American norms and regulatory requirements. Technology can help shipyards in America and other countries mitigate some cost and regulatory challenges provided that they have a sufficient order book to make the necessary investments.

International commercial markets for shipping and shipbuilding are wide open. Nations do not issue licenses to allow ships to carry cargo in their import-export trade. With few exceptions, any ship can do it regardless of where the ship was built or which jurisdiction’s flag it flies. As a result, capital naturally flows to businesses that have the lowest cost, tax, and regulatory burdens and the highest amounts of government support. Ships built or registered in the United States and most other advanced economies have comparatively high cost, tax, and regulatory burdens and receive limited government support. American ships competing in international markets against ships built and registered in countries with much lower cost, tax, and regulatory burdens, and with higher government support, have faced decisive competitive disadvantages. Hence, American commercial shipping and shipbuilding industries would not exist at all today were it not for laws that support a critical mass of US flag ships in international trade and that reserve substantial US domestic markets to American ships.
III. AMERICAN AND CHINESE MARITIME POLICIES

Concepts of Sea Power

Discussions of maritime policy often begin by summarizing the views of Alfred Thayer Mahan, an American naval officer, historian, and strategist whose works on sea power in the late nineteenth and early twentieth centuries influenced world leaders for decades. He argued that sufficient and well-configured naval power to defend national interests at sea was an essential component of a nation’s freedom and prosperity: “Control of the sea, by maritime commerce and naval supremacy, means predominant world influence.” Mahan stressed that significant participation in commercial shipping was critical to a nation’s success. As one analyst put it, Mahan taught that

sea power meant first and foremost having a strong commercial shipping industry with friendly overseas seaports and foreign trade agreements. It was a central thesis of his argument that a producing nation, such as the United States, needed a strong merchant marine to maintain prosperity and that the need for a strong Navy, unless a nation was bent on aggression, was based on the need to protect a nation’s commercial shipping interests. He emphasized that the objective of naval strategy in peace and war is to increase the sea power—which includes the commercial shipping industry—of a nation.

In Mahan’s time, sea transportation was almost the only way peoples and nations interacted with one another unless they

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Photo: MV Isa Bella. (Courtesy of TOTE)
shared a common border. Control of the seas—or not being at the mercy of a potential adversary’s control of the seas—would naturally be a top priority of any nation that aspired to international power, and centuries of naval history supported prioritizing sea power.

But the world has changed a great deal since the late nineteenth century. Air transportation didn’t exist then, and only a handful of communications cables traversed the oceans. As these other modes of interaction grew in importance, America’s interest in and support for commercial sea power faded. This downward trajectory temporarily reversed during World War I and especially World War II, when the US Navy and merchant marine were key contributors to defeating foreign aggression. But although the Navy and Coast Guard continue to receive substantial support, by the late twentieth century American awareness of and support for its international commercial maritime industry was in steep decline.

As America has increasingly treated international commercial shipping and shipbuilding on a commoditized basis in which the lowest cost generally wins the business, other means of international communication and commerce—aviation, undersea cables, and satellite communications—do not operate under purely market principles, and the government manages them more closely to promote national security. After the Chicago Convention of 1944, international aviation has operated under treaties that grant rights to the national flag carriers of the parties to those agreements. This system meant that American air carriers flying aircraft registered in the United States and fully subject to all American laws would be able to compete in international air transportation markets even though their costs may be higher than the international mean.

The regulatory system governing undersea cables (which carry more than 99 percent of intercontinental communications traffic) focuses directly on maintaining America’s military and economic security interests. The Federal Communications Commission has the legal authority to issue, withhold, or revoke licenses to land or operate commercial undersea telecommunication cables in the United States. According to federal law, the FCC must consult with the State Department and other relevant agencies regarding intercontinental cable licenses, and any license applicant with more than 10 percent non-US-citizen ownership receives a more intensive review. The FCC denied a recent application involving one of China’s telecom providers on national security and foreign ownership grounds.

Bolstering the security of undersea cables is also important. The US financial sector relies on subsea cables to support $10 trillion in daily transactions. Military strategists have written at length on the damage that China might wreak if it chose to sever Taiwan’s subsea cables—which transmit more than 99 percent of the island’s data. Indeed, Taiwan suffered major hits to connectivity in February 2023 due to alleged accidents involving Chinese ships disrupting its cable connections. Moreover, harassment by the Chinese Maritime Militia and targeted regulation significantly slowed repair efforts.

Thus, when it comes to two of the three means by which peoples and nations that are oceans apart interact with each other—air transportation and cable communications—the applicable regulatory system supports American ownership, control, and participation in the business. By most measures, American air carriers and cable providers are among the global leaders in those industries. And the US dedicates extensive resources to ensuring the safety and security of those modes.

While commercial ships no longer carry passengers or information around the world as they did in Mahan’s day, it does not follow that those ships have become irrelevant to America’s military and economic security. At any given time, commercial ships in international trade carry cargo—basic commodities, finished products, and intermediate goods—worth hundreds of billions of dollars along complex supply chains.
linking every corner of the world. The pandemic-induced supply chain crisis provided a glimpse at how critical maritime supply chains are to a healthy economy. It also showed how much damage would result if a state intentionally manipulated supply chains to hurt a disfavored country or business, or if war shut down the network entirely. As chapter IV discusses, the almost complete lack of American participation in providing international shipping services puts America's economy at the mercy of foreign (including Chinese) shipping and maritime logistics firms.

A second reason America's long-term retreat from commercial maritime industries raises serious security concerns is sealift—the ability (or inability) to resupply American and allied troops and populations during a military confrontation. The failure to sustain a more significant presence in international shipping markets to support America's peacetime trade has produced glaring deficiencies in its ability to provide sealift services in the event of a military contingency. As the report discusses below, although American policy grudgingly conceded that preserving American sealift capacity was an essential security need, it did so on such an extremely narrow basis that today we have only a third of the minimum number of commercial vessels and civilian mariners we realistically need to support the Pentagon's mobility requirements should a military confrontation take place in the Western Pacific.

Finally, America's failure to develop a strategy to retain a more substantial commercial shipbuilding industry has left its shipbuilding and repair industrial base on an unfavorable trajectory. Except for mostly smaller shipyards devoted to providing vessels for domestic commercial markets, American shipbuilding has focused primarily on serving government customers. Highly sophisticated American companies build the most advanced warships in the world. But economic, regulatory, and policy constraints have pressed them to find efficiencies in part through consolidation, and they are not well positioned to scale up capacity if necessary. American security interests would clearly benefit from expanding its base of shipyards that serve commercial as well as government customers.

While commercial sea power may occupy a smaller portion of America's security strategy today than it did in Mahan's era, the US overcorrected in ignoring so much of Mahan's guidance when it comes to commercial shipping and shipbuilding. The contrast with China in this regard is striking. America's Navy patrols the ocean commons and defends freedom of navigation in part to keep the international shipping system functioning free of interference by national or private actors. Yet the ships and companies that constitute that system are almost entirely foreign and increasingly Chinese. This is not to suggest that America should retreat from its role in securing the global commons but that it should take the steps necessary to restore greater American participation in the international shipping system so that in an era of extreme economic globalization and major power competition, America has the maritime resources and reach it needs to defend its security interests.

American Maritime Policies Today
Background

**Industrial Policy in the Maritime Sector.** Because American shipping and shipbuilding industries face substantial cost and government-driven disadvantages in international markets, the realistic starting place for determining American maritime policy begins with a straightforward binary choice—either we abandon America's commercial maritime industry entirely (as we have with other heavy industries in a post-industrial consumer-led economy) or we support it, understanding that we will have to pay public costs to offset those disadvantages.

Critics of US maritime policies who reject this choice are often trapped by faulty assumptions that distract from the hard choices that would lead to meaningful change. On one side is the claim that US labor costs are exorbitant, and that America's maritime industry is over-taxed and over-regulated. The argument goes that the country could become competitive in international mar-
kets merely by managing labor costs better and reducing the tax and regulatory burdens on US flag vessels and US shipbuilding. On the other side of the same coin is the notion that America’s maritime industries could become internationally competitive by eliminating non-market advantages (direct and indirect subsidies) given by foreign governments to their shipyards and carriers.

Neither view is grounded in economic or political reality. Like most other industries that have significant labor inputs, the cost of building in US shipyards or operating US flag ships is higher than the cost of building in foreign shipyards or operating open registry ships. This reflects higher American living standards and greater political support in America for workplaces that are safe and socially and environmentally responsible. If American shipbuilders or shipping companies paid exorbitant labor compensation, they would not be facing the serious recruitment and workforce development challenges that plague the maritime industry (and many other employers). Further, regulators should always closely scrutinize tax and regulatory burdens to ensure reasonableness and purpose-driven, efficient administration, and there are certainly examples in which poor US tax and regulatory policies have done great damage to the maritime industry. But there is little evidence today that regulatory or tax improvements would make a decisive difference in US maritime competitiveness in international markets.

For similar reasons, foreign market costs—such as for labor or compliance with less demanding safety, environmental, social, and other regulations—would still provide foreign producers (particularly in China) with significant advantages over America and other advanced economies trying to compete in these markets. Other producers (e.g., Japan and South Korea) may today have similar market costs as America, but they have achieved enormous economies of scale and scope (giving them a decisive competitive advantage) by virtue of the market advantages or non-market concessions that they received years or decades ago—even if those advantages have narrowed and those countries have reduced or abandoned those subsidies since then.

In short, America cannot deregulate its way to international competitiveness in commercial shipping and shipbuilding, nor can it pretend that getting rid of foreign subsidies will help much, at least in the short to mid-term. For the foreseeable future, smart industrial policy is an essential element of an effective strategy to establish a more robust American commercial maritime industry to compete with China. However, given the extraordinarily dynamic changes in marine technology, a smart reindustrialization policy (especially if coupled with reforms in international maritime regulatory systems) could result in a more globally competitive American maritime industry over the long term.

Security Environment Underlying Current Policies. The historical and contemporary reasons for investing public support in America’s maritime industries rest on the security benefits those industries provide. Perceptions of the severity of military and economic security risks drive policy decisions and government spending priorities. From the end of the Cold War in 1991 to the terrorist attacks of September 11, 2001, those risks were extremely low—so low that government leaders seriously questioned whether there was any need at all to retain an America-controlled commercial maritime industry. The policies in question covered all segments of the industry, briefly including America’s domestic shipping industry.

Policymakers’ decisions during that decade affected nearly every aspect of the maritime industry. Efforts to reform and re-instate government support for commercial shipbuilding in the United States failed, and Congress decided to preserve the domestic-build requirement in lieu of relying on international anti-subsidy rules. Support for US flag international shipping barely survived, with the 47 US flag ships that the 1996 Maritime Security Act covered (which the next chapter discusses) accounting for less than 0.2 percent of the global fleet at that time. Policy changes in 1990s also deregulated the container shipping industry and reduced constraints on financing ships for use in domestic markets. The largest American shipping companies were sold to foreign competitors that had more
comprehensive national maritime industries and more accom-
modating tax and regulatory environments. All of these deci-
sions were made after the end of the Cold War, during the peak of American hegemony when maritime security was essentially a hypothetical concern unlikely ever to become real.

Congress made no fundamental changes in American mari-
time policy in the years following the September 11 attacks. The threat of terrorism highlighted the importance of home-
land security, prompted massive spending to mitigate those risks, and reinforced longstanding policies that preserve American control over US domestic fleets. While American commercial ships were important contributors to the efficient prosecution of wars in the Persian Gulf and Afghanistan, America’s adversaries never seriously threatened American preeminence in air and sea power, nor in our ability to keep our troops supplied. The US flag fleet proved its value through those conflicts, meeting the military’s needs with extraordinary efficiency. But those conflicts did not reveal a compelling need to invest in a significantly more robust American commercial maritime industry.

Current Policies Governing International Shipping Services

Once the dust cleared from the 1990s reexamination of US maritime policies, the key maritime policies that survived fo-
cused on maintaining our domestic maritime industries as well as preserving a critical mass of US flag vessels and mariners operating in international trade. The Maritime Security Program (MSP) and its newer sister programs provide stipends for own-
ers of ships that the Maritime Administration (MARAD) accepts into the program to offset the higher costs of operating under the US flag. Ships in the MSP are eligible to carry government “preference” cargo, and the business model depends on MSP vessels generating revenue from handling a mix of cargo from commercial and government customers supplemented by the stipends. In exchange for those benefits (stipends and prefer-
ence cargo), the owners must register those ships under the US flag, crew them with American mariners, and agree to partici-
pate in planning and providing sealift support for the US military when it calls on them.

Congress recently enacted two MSP sister programs that arose out of security concerns specifically related to China. As noted above, strategists recognized that the hundreds of undersea telecommunications cables that carry more than 99 percent of international communications and data transmis-
sions (including $10 trillion in daily financial transactions) are vulnerable to sabotage, including during maintenance and repair operations. Congress therefore approved legislation that provided cost-offset stipends to operate two US flag cable-laying ships, reducing reliance on foreign ships to perform those services.

On a larger scale, US military planners recognized roughly five years ago that they would need assured access to enormous amounts of fuel in a Western Pacific conflict. Studies consid-
ered a variety of options for obtaining access to the fuel and determined that a core part of the strategy would require a fleet of 80 to 100 or more US flag tankers. This is against an existing US flag tanker fleet of just nine vessels operating in interna-
tional trade. As a down payment to meet that need, Congress approved the Tanker Security Program (TSP) in 2021, which provides support for 10 US flag tankers at a $6 million annual stipend per ship. Congress has already authorized an additional 10 tankers for the TSP program and has asked for studies to assess the speed at which the Department of Defense (DoD) can scale up the US flag tanker fleet to fully meet the need for additional tankers.

A “Ship American” requirement, commonly known as “cargo preference,” is the other program that aims to support the US flag fleet in international markets. It requires all defense cargo and 50 percent of most other cargo shipped in international trade by or under contract with the US government to move on US flag ships. It offsets the higher costs of operating US flag
ships by providing better capacity utilization and/or higher-rated freight shipped by government customers or contractors.

These programs together provide a diverse fleet of commercial vessels based primarily on the needs of government customers, including the contingent sealift needs of the Pentagon: roll-on/roll-off vessels (ro-ros), container ships, tankers, dry bulk, and general cargo ships. The total US flag fleet of cargo vessels, as of April 2023, stood at 178 vessels of 1,000 gross tons or more. Most of those vessels (93) were built in the US and operate primarily in US domestic trades. Of the 85 US flag cargo ships deployed exclusively in international trade, MARAD has enrolled 60 in the MSP and given them stipends, while 25 depend primarily on shipments of government preference cargo to be economically viable.

For a variety of reasons, no American shipping companies that operate either US flag ships, foreign flag ships, or both have a substantial share of the international shipping market. Many foreign governments have for decades provided substantial support to all aspects of their maritime industries, including vessel ownership. However, the US withdrew most support for its maritime industrial cluster in the second half of the last century. In fact, at a critical juncture from 1986 to 2004, US tax laws severely disadvantaged American ship owners operating foreign ships. These laws helped lead to the sale of top American shipping companies Sea-Land Service and American President Lines to foreign strategic buyers (Denmark’s A.P. Moller-Maersk and Singapore’s Neptune Orient Line, which CMA/CGM later acquired).

American companies in the ocean shipping business today fall into one of three groups. The first consists of legacy competitors and new entrants that focus largely on domestic trade, although several also offer services in niche international markets using US flag and foreign flag ships. These companies have strong entrepreneurial cultures, and most are enrolled in sealift readiness agreements and have become increasingly active in supporting the Pentagon in its missions.

A second group comprises small US companies or US subsidiaries of large foreign shipping companies that own vessels enrolled in the MSP and TSP or that move government preference cargo. They participate in sealift planning and operations that are based (for US subsidiaries of foreign carriers) on special security agreements with the Pentagon that aim to insulate the US subsidiary from foreign control with respect to the deployment of their US flag vessels. These companies provide the Pentagon with broad global visibility and potential access to the larger fleets and resources that their parent companies control.

The third group of US owners are investors (including private equity) that have expertise in some aspects of the shipping market and make short- or long-term investments in foreign flag ships as an asset class. Many of them are not active in the commercial management or operations of the vessels they own. The vessels are not considered militarily useful, and MARAD does not include them in its sealift readiness programs.

In summary, Americans own about 1,800 large commercial ships out of a global fleet of some 55,000. About 1,000 of these American-owned ships fly foreign flags and are not involved in supporting US maritime security. Only 774 ships of all types fly the US flag, most operating in US domestic trade and only 85 in international trade. Of the 60 ships in the MSP, US subsidiaries of major foreign shipping lines own 45. These are the American commercial vessels and companies that are currently available to support our military and economic security in an extremely globalist world in which America finds itself in serious competition with a maritime powerhouse (see table 2).

Domestic Commercial Shipping and Shipbuilding

The bedrock of American maritime policy today and throughout most of American history is the set of laws governing our domestic shipping industry. These laws require cargo and passengers in American domestic maritime commerce to move on ships that Americans build, own, and crew.
The laws confirm basic tenets of American sovereignty over transportation services that operate within the US domestic economy, whether by truck, train, air, pipeline, or ship. They ensure that American maritime companies and workers compete on a level playing field against each other and against other modes of transportation involved in domestic commerce. They also support American military security by preserving a critical mass of Americans who know how to build and operate ships; homeland security by minimizing the presence of foreign ships and mariners on our inland and coastal waterways; and economic security by preventing foreign interests from exerting control over our domestic maritime supply chains.

Most of the vessels registered under the US flag, many of the Americans who are licensed mariners, most of the American companies involved in shipping, and all the vessels that American workers produce in US commercial shipyards are devoted to serving the needs of customers in US domestic trade. The industry is large and diverse, and it includes tens of thousands of tugs, towboats, and barges moving liquid and dry bulk commodities and other merchandise on our inland waterways and around our coasts; scores of tankers moving crude oil and refined products to and from refineries and customers in several states; dozens of sophisticated offshore vessels designed for the development of oil and gas, offshore wind, and other ocean resources; scores of large passenger ferries and research vessels; container ships and ro-ros serving consumer markets in Alaska, Guam, Hawaii, and Puerto Rico; and many other vessels operating in niche markets where maritime transportation competes effectively with other modes of transportation or sourcing options.

Shipbuilding and repair activities for the commercial sector in the US generated almost $6 billion in revenue in 2019, accounting for 21.3 percent of total industry revenue (including work for government accounts). As previously noted, because of the substantial market and non-market disadvantages that American shipyards face, all commercial ship construction and most commercial ship repair activities involved vessels deployed in US domestic trade.

While maintaining US flag ships in international markets requires a significant public investment to offset the cost disadvantages that owners face in those markets, the same is not true with respect to vessels operating in US domestic trade because all such vessels (like trucks and railroads) compete under the same American rules and norms. Competitive forces within those markets, fully subject to antitrust enforcement, keep costs and pricing in line. Hence, the benefits of having an American shipping and shipbuilding industry serving domestic markets come at virtually no cost to taxpayers.

China’s Maritime Policies

Background

China’s advantages in commercial maritime markets are the polar opposite of the observations made above concerning the substantial market and non-market disadvantages that American shipping and shipbuilding industries face in international markets. Although China’s economy continues to evolve, its relatively low labor costs coupled with an export-led economy and massive government support for its commercial maritime industry give Chinese shipbuilders and ocean carriers tremendous advantages in open international markets. China imports raw commodities in astonishing volumes—for example, 73 percent of all iron ore imports worldwide go to China. It imports more coal, sand, oil, and natural gas than any other country. These imports (as well as domestically produced commodities) are critical in enabling China to meet the needs of its massive domestic population as well as in supporting its continued role as the world’s leading exporter of finished and intermediate goods. China needs a reliable ocean transportation system to bring in raw commodities and to carry value-added products out to export markets worldwide. Much like Japan and South Korea in past decades, this trading and production pattern put China in a position to profit by developing what has become by
far the world’s largest cluster of commercial maritime industries. Despite the continued evolution of China’s economy, there is every reason to believe this pattern will persist for the foreseeable future.

Chinese shipping and shipbuilding businesses thus have market advantages that would be very challenging for maritime companies from America and other advanced economies to overcome. In addition, the PRC has poured enormous sums of government support into its commercial maritime industries, which analysts conservatively estimated at $132 billion between 2010 and 2018, or about $15 billion annually, consisting primarily of financing by state-owned banks. The benefits of government-backed financing include support for projects that might not otherwise be bankable, lower interest costs, and a strategic buffer against the effects of volatile markets. Analysts have identified many other forms of Chinese government support for its maritime industries, including direct and indirect subsidies, formal and informal barriers to foreign competitors, and forced transfer and theft of technology.

This non-market support for China’s shipping and shipbuilding industries reflects the explicit and unreserved support of CCP leadership. Shipbuilding was one of the first industries the CCP liberalized in the early 1980s under Deng Xiaoping, and they later identified it as a “strategic industry” to receive “special oversight and support” in 2006. In one of his first addresses to the Politburo in 2013, President Xi Jinping instructed his subordinates on the importance of a strong maritime industry: “Historical experience tells us that orienting to the ocean will lead to prosperity, while abandoning the ocean will lead to decline. A strong country is a strong maritime power, and a weak country is a weak maritime power.”

He further elaborated on why a strong maritime industry is important: “The implementation of this major deployment is of great and far-reaching significance for promoting sustained and healthy economic development, safeguarding national sovereignty, security, and development interests, and realizing the goal of establishing a well-off society in an all-round way and thus achieving the great rejuvenation of the Chinese nation.”

He noted that China’s maritime achievements to that date “have laid a solid foundation for our construction of a maritime superpower” and concluded by confirming that “building a maritime superpower is an important part of the cause of socialism with Chinese characteristics.”

In short, China’s consistent approach to building up its maritime industry over the past four decades takes a page directly out of the playbook Alfred Thayer Mahan wrote more than a century earlier. It has been extraordinarily effective.

**China’s Maritime Industry Today**

Layering unprecedented levels of government support onto an industry that already enjoys massive market advantages has had the predictable effect of producing astonishing growth, and the data bear this out. Starting from a base of no international ship sales in the early 1980s, Chinese shipyards last year secured 54 percent of worldwide orders for new large commercial ships. This includes 80 percent of the market for vehicle carriers (PCTC/PCC), 67 percent of dry bulk carriers, 58 percent of container ships, and 44 percent of tankers. It now holds more than half of the pending global order book, creating a significant backlog with deliveries stretching to 2026. China’s dry dock capacity increased more than tenfold between 2000 and 2012, to more than 130 docks (versus fewer than 80 for second-place Japan). It now owns about 180 out of 300 facilities worldwide that are actively building large commercial ships. China’s market shares for the production of key shipping equipment stand at more than 95 percent of shipping containers and more than 70 percent of container gantry cranes, levels that could be deemed monopolistic under standard antitrust laws. It has built more than 200 dredgers and has the largest dredging fleet in the world, including the world’s most powerful.
Also relevant are the massive investments China has made to obtain complete or partial control over nearly 100 ports in more than 50 countries around the world.\textsuperscript{73} As figure 4 illustrates, Chinese state-owned enterprises and Chinese private companies hold complete or partial control over marine terminals in 23 of the top 25 container ports globally.\textsuperscript{74} The top 25 container ports accounted for 62 percent of global container throughput (422 million of 686 million units) in 2022, while the two ports within the top 25 that have no Chinese ownership (Dubai and Tanjung Pelepas) account for 24.5 million units, less than 6 percent of global throughput. Ports in China accounted for seven of the top 10 container ports, and China has ownership interests in marine terminals in the other three (Singapore, Busan, and Rotterdam).

China also has control through ownership, registry, finance, and other means of at least 18 percent of the large commercial ships operating internationally.\textsuperscript{75} A unique characteristic of China’s commercial fleet is that about 62 percent of Chinese-owned vessels are registered in China (versus foreign flag registration), compared to the rest of the top ten vessel-owning countries, for which only 27 percent of their fleets are national flag vessels of those countries.\textsuperscript{76} This means most Chinese-owned vessels are subject to the direct operational control of Chinese nationals.

Few would question today that China has become a maritime superpower in line with President Xi’s vision and that this strengthens its military and economic security. Key Chinese
shipyards build military vessels for the People’s Liberation Army Navy (PLAN) alongside container ships and other ship types destined for commercial customers. State-owned shipping company COSCO not only handles much of China’s import-export trade but is also involved in planning and meeting the maritime logistics needs of China’s military organizations. Analysts have paid serious attention to China’s ability to leverage its complete or partial control over nearly 100 commercial marine terminals outside of China for global military operations. And the Pentagon has expressed specific concerns that the Chinese government could leverage the container gantry cranes produced in China (comprising 80 percent of the cranes at US ports) to surveil and potentially disrupt port operations.

Given its stated ambition to become the global leader, it is not remarkable that China would choose to build up its maritime industries or that it would leverage those industries to enhance its global reach and military capabilities. This aligns precisely with the “military-civil fusion” strategy China developed and refined over the past two decades. America itself pursued similar mercantilist strategies in the Mahan era, which helped give it the industrial capacity to set the agenda for the global economy for the next century and win two world wars. It largely abandoned those strategies, however, and the question now is whether the absence of robust American participation in international shipping and shipbuilding—along with the increasing dominance of those industries by America’s geopolitical rival—creates serious security concerns that the US should address.
One may question whether the growth of China’s maritime industries merits a reevaluation of US maritime policy. While the asymmetries between US and Chinese shipping and shipbuilding industries are staggering, many other industries face similar challenges. Why should we be concerned about China’s dominance of shipbuilding, gantry crane, container construction, and related businesses? China’s ownership interests in scores of marine terminals around the world may raise serious military concerns, but do they also put our commercial supply chains at risk? Does the number of Chinese-owned or -controlled commercial vessels trading internationally raise serious supply chain or other security concerns? How does China’s dominance in these areas threaten our military and economic security interests? Does the almost complete absence of American participation in these areas threaten our military and economic interests? Can changes in America’s commercial maritime policies help mitigate any of these risks? This chapter addresses these and related questions.

Shipbuilding Industrial Base
China’s extraordinary growth and dominance of shipbuilding provide the classic industrial base success story. This growth has lifted millions of workers out of poverty and into the Chinese middle class. It has spurred capital investment not only in shipbuilding infrastructure but also in key related industries, including steel, heavy equipment manufacturing, and technology. Although substantial Chinese government support helped enable the success of its shipbuilding industry, much...
of the revenue that covers the industry’s capital and operating expenses today comes from commercial customers, not from government support. Yet government customers of China’s shipbuilding industry (the PLAN, China Coast Guard, and foreign governments)—as well as customers of other related industries—all benefit from the efficiencies that the massive scale and scope of China’s shipbuilding industry generate. In real terms, China has leveraged its industrial policy investment in shipbuilding to generate huge benefits to its military security and economic success.

Where does that leave America as a geopolitical rival? Does China’s dominance of commercial ship construction impact America’s military or economic security interests in a serious and negative way? That China has “only” half of the global commercial shipbuilding market may provide some comfort that whatever happens, America can still produce the military combatant vessels it needs and can rely on allies to help cover other needs. If a more serious confrontation develops, America can (theoretically, if it has enough time) scale up its existing military and commercial shipbuilding industry in a targeted way to meet whatever challenges we may face at that time.

As a practical matter, this is the policy in effect today. It seemed to make sense in the context of a geopolitical framework that America dominated and in which commercial maritime capabilities were of doubtful military and economic importance. The US maintains a strong (although increasingly expensive) military shipbuilding capacity and supplements it with a relatively small commercial shipbuilding capacity as an insurance policy in case the need to scale it up arises. Although this shipbuilding industrial base is funded predominantly by government work with only modest revenues from commercial customers, that is where the invisible hand of the international market has led us.

With the benefit of hindsight, we can say this was a naïve policy framework that assumed too much. America today has a very challenging geopolitical rival with overwhelming competitive advantages in the maritime sector. The potential battleground consists predominantly of islands 7,000 miles away from the continental US. Because America is unlikely to achieve air and sea dominance, combatant and supply vessels would be lost, potentially in significant numbers. The ability to supplement and replace those vessels on a timely basis could be a significant factor, particularly in a prolonged conflict. While we may hope to rely on regional allies, particularly South Korea and Japan, to actively support America’s needs in this sector, there is no assurance that they could or would do so.

At a more basic level, the maritime nature of any potential war in the Western Pacific elevates the importance of building a more robust Navy to deter such an event. Although American defense contractors still build the most advanced combatants in the world, the comparative trajectory of America’s and China’s naval capabilities is deeply unfavorable to the US. America will spend more than $300 billion this decade on Navy ship construction to maintain a fleet of just under 300 combatants. Over that same period, China will increase its fleet from 360 to 425 combatants.

Having a more robust American commercial shipbuilding industry can help ameliorate this trend. First, better positioning the commercial shipbuilding industry today can provide the Navy with access to comparatively inexpensive vessels so that it could quickly replace them (or expand the fleet) if it needed surge capacity in different Western Pacific combat scenarios. Further, revenue coming from China’s commercial shipbuilding industry carries a significant share of the financial load for the facilities, personnel, overhead, and other costs for shipbuilding capacity that has built the Chinese Navy (PLAN), Coast Guard, and Maritime Militia. In real terms, tens of billions of private-sector dollars that Chinese commercial shipyards earn each year supplement spending by the Chinese government on its navy. On the US side, almost all revenue that supports US Navy and Coast Guard shipbuilding comes from government accounts.
Revenue from US commercial shipbuilding (for vessels operating in US domestic trade) averages a very small fraction of the amounts that China’s commercial shipyards earn.86

China’s massive commercial shipbuilding industry clearly helps it build its naval combatants and auxiliaries more efficiently, at much lower costs, in greater numbers, and with lethality that is increasingly competitive with the US.87 America needs to begin reversing the trend lines and moderate the risks from China’s growth in naval shipbuilding. Increased and improved spending on Navy combatants is not the only answer, in part because taxpayers cover 100 percent of the cost. Expanding America’s shipbuilding industrial base by growing its commercial order book is surely another part of the answer since the benefits of doing so are substantial and since private-sector funds would pay for a large share of the costs.

The key policy today that supports commercial shipbuilding in the US is the requirement that ships eligible to serve domestic shipping markets be constructed in American shipyards. That policy provides work to scores of shipyards around the country and supports thousands of skilled workers. Most of these shipyards build small- to mid-sized vessels, but some also build tankers, container ships, and other large vessels. The domestic industry sustains a nucleus of commercial shipbuilding in this country that, given the China threat, has become increasingly valuable to our national security. We can supplement it with a well-designed program that enables efficient, series US production of technologically advanced versions of targeted vessel types for commercial international trade.

Chapter V includes a proposal to achieve this goal—the government would phase in a requirement that US flag commercial vessels necessary for national security (in a New MSP program) would be built in the United States. The program would leverage the procurement process to elicit innovative proposals for autonomous-ready ships that would operate with normal crewing in peacetime but could operate on an uncrewed basis in the event of conflict. Those ships would also include leading-edge technology for environmental performance. They would provide a consistent demand signal, enabling American shipbuilders to invest more in robotics and other advanced technologies that could eventually make US yards internationally competitive for certain vessel types.

To be successful, such a program needs to first prioritize commercial viability, meaning that it should produce vessels that customers in commercial shipping markets would find attractive from a price and quality standpoint. Such vessels also need to support national security objectives, such as by meeting various sealift needs outlined below. The key, however, is to leverage modest amounts of US government support to generate reliable, repeat commercial business for US shipyards to build targeted ship types. This will expand and diversify our shipbuilding industrial base and facilitate improved efficiency. The public benefit of making such investments would come in two forms—an expanded industrial base that could build government and commercial ships at lower costs, and commercial assets in the form of ships that can meet military needs in the case of conflict—with a substantial share of the revenues coming from commercial operations thus reducing the burden on taxpayers.

In summary, industrial capacity earned in key commercial markets still matters in supporting our defense industrial base. If America does nothing to change the trajectory of its shipbuilding industrial base, the gap with China will only widen. While America cannot replicate at scale what China has accomplished in building up its shipbuilding industrial base through commercial orders, America can relearn and apply smart industrial policies that will help change the trajectory of its shipbuilding industry.

**International Shipping Services**

The relative size of America’s commercial shipbuilding industry raises security concerns that are straightforward compared to those arising from America’s small participation in—and China’s
increasing influence over—the international shipping industry. It is easy to define the market for commercial ship construction, and China has a 50 percent share of it, which provides China with tremendous industrial base advantages over America in advancing its national security. America can and should do more in a targeted way to build up its commercial shipbuilding industry to gain synergies and increase control over its own national security.

In contrast, the almost complete absence of American shipping from international trade raises a more complex set of military and economic security concerns. Lacking a more robust fleet of American commercial ships trading internationally lowers assurance of our ability to support American and allied needs in different conflict scenarios. It diminishes our ability to meet basic sealift needs in the case of a shooting war, protect the integrity of our maritime supply chains in peacetime, and deter aggressive Chinese tactics in the gray zone between war and peace. The section below discusses each of these concerns separately.

Sealift

As discussed above, in the 1990s the United States reset the programs that were supposed to generate enough US flag capacity to cover the potential need for sealift in a military activation. America was the sole global superpower and dominated the sea, air, and space domains. Planning for sealift focused on how to provide it dependably and at the lowest cost to the government. There was no serious concern about the loss of American ships or about a lack of American involvement in peacetime commercial global supply chains that could threaten America’s economic security. The overwhelming consideration was efficiency, and one of the industry’s main talking points was to demonstrate that the Pentagon could save money by contracting out the function to commercial carriers instead of using Navy vessels. Thus, in addition to providing an insurance policy (in case of an activation), maintaining a small fleet of US flag vessels facilitated partnerships between the Pentagon and commercial enterprises that could provide innovative and cost-effective logistics services during and between conflicts. While there was a financial incentive to size the US flag fleet as small as possible, the performance of these programs during the conflicts of the past two decades demonstrated that they were excellent investments.

Following that same mindset, recent additions to the US flag international fleet for undersea cable security (CSP) and tanker sealift (TSP) seek to solve new, specific security concerns that analysts can articulate and measure. In particular, the Pentagon has recognized that, just to carry fuel in a Western Pacific conflict, the total US flag international fleet would need to more than double in size. Thus, in addition to the current fleet of 39 containerships, 23 ro-ros, 10 general cargo, nine tankers, and four dry bulk ships, it would need about 100 additional tankers (review figure 1 on page 7). Further, significant changes in sourcing and military tactics will almost certainly drive a need for a significantly higher number of US flag ships to meet military mobility requirements in a Western Pacific contingency. And, most importantly, these vessels would likely operate in contested waters, where US dominance of the air and seas would not be assured. There would be attrition. The US would need to replace lost vessels.

Taking into account all these factors, Rear Admiral Mark Buzby (US Navy, ret.) recently stated that, to meet the more realistic sealift challenges that a Western Pacific conflict poses, the US flag international commercial fleet would need to roughly triple in size, to 250 ships. Within the past ten years, Admiral Buzby has been the commander of the Military Sealift Command and administrator of MARAD, the two organizations that have primary responsibility for providing sealift services to the US military.

This figure of 250 ships reflects a reasonable and expert interpretation of the Pentagon’s analysis and is roughly the number of ships the US military needs today just to meet its own mobility...
requirements in a Western Pacific conflict. Considering all the unknown factors involved in such a conflict that are outside American control, this may be a conservative estimate of the real need. Chapter V of this paper thus outlines an aggressive strategy to produce an American fleet of that size by year-end 2026, consisting of 165 US flag ships and 100 American second-registry ships, with flexibility to determine the optimal fleet composition. The full complement of 250 US flag ships plus 250 American second-registry ships would be reached by year-end 2029.

There is also an urgent need, however, to revisit the basic principles that the DoD uses to determine the size and composition of the US flag international commercial fleet. The root concern is that the metrics analysts have used for decades only cover the lift necessary to meet projected US military mobility requirements. For decades, Pentagon planners (who must work within the legislated size of the US flag fleet) have carefully assessed the square footage of ro-ro space necessary to move DoD equipment, tanker capacity to provide fuel for the Pentagon’s use, container ship capacity to meet general resupply needs, etc., in connection with defined contingencies. They based their decisions on confidence in the planning scenarios then in place, and while the original planners developed those scenarios in good faith, they had to work within the statutory limit on the number of authorized US flag vessels. They also inevitably based the scenarios on wartime assumptions that could turn out to be wrong or that simply evolve as global threats change. Until recently, planners built no margin of error into their assumptions, and when calculating the fleet’s size, they made no allowance for attrition due to enemy action. While the 250-ship fleet that this report recommends corrects for those errors, that is a fleet that America does not have today, when it needs it to help deter Chinese aggression, and it is a fleet it can only hope to get within three or more years—if Congress acts.

Perhaps more importantly, there is no recognition in current planning principles of the need to provide maritime logistics support for allied troops and for American and allied civilian populations—crucial functions that were historically among the most important contributions by the US merchant marine and that could be critical in deterring or responding to a military confrontation in the Western Pacific. In this regard, recent reports raise concerns that Taiwan’s heavy dependence on imported waterborne shipments of petroleum and natural gas creates an extreme vulnerability to PRC tactics that would focus on preempting or interdicting those shipments. Among the options available to counter such tactics is for Taiwan to shift its crude oil and liquefied natural gas (LNG) sourcing to North America and to transport it on US flag ships, which are entitled to the protection of the US Navy. This is one specific example (out of many potential scenarios) of how a larger fleet of American commercial ships would provide America with valuable tools to deter conflict. And we cannot wait until the specific need confronts us—it will take years to build back the US flag fleet, and by that time it could be too late.

Policymakers should note two additional gaps in the current planning principles: First, the principles give no consideration to economic security. As discussed below, the almost complete absence of American participation in the maritime logistics supply chains moving US imports and exports creates serious vulnerabilities to America’s economic interests. A more robust American-controlled commercial fleet of US flag ships would help mitigate those risks. Secondly, there is a range of additional benefits to a large US flag fleet that analysts cannot easily quantify but that are nevertheless very real and important to effective deterrence. These are covered below, and they include reducing the concentration risk to US military supply lines in a preemptive strike and demonstrating a form of freedom of navigation with multiple American ships sailing daily throughout the region. The 1990s-era laws that set the size of the US flag fleet based solely on the Pentagon’s notional mobility needs simply ignore these other important benefits of maintaining an American fleet.

To help fill these very large gaps in the US flag fleet (even accounting for the 250-ship US flag fleet that this report propos-
es), the proposal below includes a controlled mechanism for doubling that fleet to a total of 500 ships by the end of the decade. It does so through the use of a second US ship registry, which Congress would create by statute and for which it would develop precise standards through the legislative process. In general, second-registry ships would by statute be entitled to US Navy protection. They would include high-quality American operating requirements but would permit the employment of qualified mariners from allied countries for all or a portion of the crew complement. This would enable operating costs in the second registry to remain at or near the international mean and would thus minimize the cost to US taxpayers.

The second-registry fleet would not be a substitute for the primary US flag fleet, which loyal American citizens would crew and which is essential to meeting core military sealift functions. The legislative process would thus have to address several considerations concerning the use of second-registry ships, some of which chapter V discusses. The ultimate overall objective is to produce a fleet of 250 US flag ships with American citizens as crew that would close the sealift deterrence gap, and to supplement that fleet with an equal number of American ships that would help address peacetime and gray-zone security concerns. A total fleet of 500 American ships operating in international trade—a fivefold increase in today’s fleet—would provide an important tool for protecting American security interests and is much more commensurate with the risks we face today.

Supply Chain Security

As became clear during the post-pandemic supply chain crisis, America’s economic health is extremely dependent on a well-functioning international maritime logistics system to move US imports and exports to market. It is a complex system involving the production, transportation, and distribution of goods across countries, continents, and oceans. About 90 percent of global merchandise trade moves by water. Commercial and operational control over ships, ports, and other key features of the maritime logistics systems handling international trade is thus an important responsibility. It is also a potential source of coercive economic power to the extent it enables a country to impose sanctions that go beyond its own bilateral trading relationships.

China has substantial and growing power over international maritime logistics systems, power that could enhance its ability to wage economic warfare against the US by manipulating or shutting down the maritime logistics supply chains that physically handle the commodities, finished products, and intermediate goods that Americans have come to rely on. Beijing derives that power from most segments of the maritime supply chain. It has direct control over the goods traded bilaterally between the US and China, and it could embargo the sale or purchase of those goods, just as any other nation could. However, China would also have the practical ability to disrupt US import-export trade far beyond the US-China bilateral trade. It could suspend transportation of third-country exports to (and imports from) the US that are caught in transit at ports it controls in China or elsewhere, or on Chinese-controlled ships. More than 80 percent of North American containerized imports on the main East-West routes originate in East Asia, including third-country cargo that transits ports in China. China’s historically large investments via the Belt and Road Initiative in ports and other infrastructure in more than 50 foreign countries may enable Beijing to control ship access and cargo handling in those ports. And as noted above, China controls at least 18 percent of the commercial ships operating internationally—with Chinese nationals controlling many of those ships throughout the chain of command, from Beijing to the corporate headquarters to the ship’s bridge.

Because of its reach into maritime supply chains, China has actual physical control over goods or constructive power to disrupt trade well beyond its bilateral markets. It is a physical corollary to the US banking system’s control over the international payments system. Such power could prove effective in the context of a shooting war, in which a directive from Beijing might instruct ship-
ping companies, vessels, and marine terminals that it controls worldwide to immediately suspend all trade and transportation involving Taiwan and the United States. Instead of blocking and freezing the financial assets (as occurs when economic sanctions target the payments system), the order would be to detain and hold whatever designated physical assets are within the grasp of those subject to the order. It could disrupt tens of billions of dollars’ worth of goods in transit. Again, as we learned during the supply chain crisis, this would include finished and intermediate goods—critical components (microchips and other parts) of products that are finished outside China that in total may be worth hundreds of billions of dollars. China’s action could eventually provoke economic and social chaos throughout the US and much of the world, including China, as its effects cascade throughout the economy. China might also time and calibrate the aggression to maximize the impact on the West, minimize collateral damage to China, and entice cooperation from American allies.

China could also leverage its maritime control in much more discrete ways, targeting the supply chains of governments, companies, or individuals wherever they are located for criticizing the CCP or for promoting ideas that the CCP deems inconsistent with its objectives or otherwise views with enmity. The sanctions could be subtle (e.g., enhanced inspections) or more coercive and be open or covertly disruptive.

To be effective, China would need access to basic information about the target shipments, identifying the cargo, shipper, and consignee as well as real-time information on location (vessel and marine terminal). For commodities moving on liquid or dry bulk vessels, the ocean carrier or vessel owner would generally have access to that information. Hence, China could disrupt bulk shipments moving on Chinese-controlled vessels or through Chinese-controlled ports even if those shipments did not include China as an origin or destination.

Access to such information would likely be more challenging to obtain for shipments of containerized cargo, which likely would be the most valuable for targeting US interests. Again, China would have the necessary information for shipments that move under bills of lading that its carriers issue, either on vessels they control or on those that alliance partners control. This by itself could extend economic aggression far beyond the US-China bilateral trade. For container shipments that involve no Chinese exporter or carrier but that move on Chinese vessels or through Chinese marine terminals, China’s access to necessary targeting information is uncertain. However, in addition to vast amounts of public data concerning trade and transportation, China has potential access to non-public information through various sources. This includes the Chinese-controlled maritime logistics information platform (LOGINK), which is the subject of a September 2022 alert from the US-China Economic and Security Commission; manufacturing and installation of security inspection equipment in various marine terminals by Chinese state-owned Nuctech; and the construction and monitoring of most of the ship-to-shore container gantry cranes used in ports worldwide, including in the US. Other potential sources of information are through China’s construction of nearly all steel shipping containers in use globally, ownership of the only major blockchain-supported operating system under development for the global shipping system, and other sources. Beijing could leverage artificial intelligence to harvest and assimilate from public and non-public sources the information it would need to target specific shipments within maritime logistics supply chains.

To deter supply chain manipulation or warfare, America depends on the mutual harm to both China and America that would result if China were to attempt to weaponize the maritime supply chain, as well as on America’s superior position in other economic and military domains. America also depends on the goodwill of shipping and logistics companies based in allied nations to mitigate or prevent targeted or catastrophic damage to its economy. Indeed, American allies in Europe and the Western Pacific (Japan, South Korea, and Taiwan) are home to companies that control the majority of the global container shipping
market. Many of these companies also have significant investments in port facilities around the world. Thus, while a move by China to weaponize its supply chain resources could inflict great damage on American interests, America could somewhat contain the damage if its allies were to stay onside. Such a move by China could in fact backfire and end up isolating it by destroying the trust it needs to succeed in international business.

The fact remains, however, that America today has almost no participation in the maritime supply chains carrying US import-export cargoes that are vital to America’s economic health and security. Few would question the vulnerabilities this creates but for the American advantages in other areas and the likely support of allies that the report noted above. And China is working to diminish its exposure in the areas where America has such advantages. An example is Xi Jinping’s effort to displace the US dollar as the global reserve currency. Xi has also reportedly made the ability to de-risk China’s economic exposure to the US an explicit factor in evaluating the performance of his subordinates. And he recently instructed his leaders to be prepared for “extreme destruction” in case there is any doubt as to the seriousness of his intent. Thus, in the context of supply chain manipulation or warfare, while America need not compete by seeking to match China port-for-port and ship-for-ship, doing nothing is not an option either. America should take realistic steps to control more of its own destiny through targeted support of its own maritime industries. As the prior chapter discussed, expanding the US flag fleet from 85 ships today to 250 and then 500 would be a positive step forward.

Deterrent Value of American-Controlled US Flag Shipping

As discussed above, based on 1990s-era policy decisions, the US government has defined as narrowly as possible the benefits of having US flag ships, considering only the direct mobility benefits that the Pentagon receives versus the benefits that the country at large receives. Washington has viewed the issue like an engineering problem with risks that it can precisely measure and address with minimal but arguably adequate solutions in the numbers and types of US flag ships that it would support. Especially in an extremely low-threat environment, the policy instinct is to avoid criticism for having too much fat in the system rather than for being underprepared for an eventuality that is unlikely to ever materialize.

This mindset has left America with a radically understated need for US flag shipping as geopolitical threats have shifted from hypothetical to real, maritime battlefield risks have grown much more deadly, more complex warfighting strategies and tactics have evolved, and the sealift needs of key partners have been taken into account. But this mindset has arguably caused even more harm, well beyond the impact that producing an undersized sealift fleet has had on our military readiness. It has also obscured a more expansive view of the value of US flag shipping in deterring potential aggression by China, adversely affecting both the military and the economic security of America.

To illustrate, consider a hypothetical world in which American citizens own, control, and operate several hundred American container ships, ro-ros, liquid and dry bulk carriers, general cargo, and specialty ships to generate profitable operations in international commercial shipping markets. US policies would ensure that within that fleet are adequate numbers and capacities of different ship types to meet realistic military sealift needs. Otherwise, standard rights and obligations of US flag service would apply. US flag ships would be eligible to carry government cargo, could be taken up from trade to meet a serious military need, and would be prohibited from obeying foreign government directives contrary to US security interests. These policies would not adversely affect the commercial viability of those vessels, or the US government would provide compensation to the extent that specific directives imposed additional costs.

Having such a fleet would mean that on any given day, dozens of American ships would be sailing throughout the Western Pa-
Pacific and Indian Ocean and transiting the Taiwan Straits, South China Sea, Straits of Malacca, and elsewhere. Just as scores of Chinese ships call at Seattle, Los Angeles–Long Beach, Houston, New York, and other major American ports, American ships would call at dozens of key international seaports in China (e.g., Ningbo, Shanghai, Guangzhou, Qingdao, Hong Kong), Taiwan, and throughout the region. American commercial ships would also call at dozens of Chinese-owned and -operated ports outside China.

Compared to the fleet of 85 large US flag cargo ships currently in international trade, an American fleet of several hundred ships would dramatically enhance US security in numerous ways. Dozens of American ships would daily demonstrate freedom of navigation in Western Pacific waters where they are rarely seen today. At a minimum, this would complicate potentially coercive actions by China. In case of an extended low-grade conflict involving enhanced gray-zone, quarantine, or blockade tactics, maritime logistics services to US and allied installations and populations throughout the region could be much more reliably sustained. As American territory, the US flag ships would receive US Navy protection and essentially be untouchable wherever they lawfully operate, far less susceptible than foreign ships to harassment or intimidation by hostile actors. Thousands of American mariners would gain the visibility and hands-on experience of operating in scores of foreign ports, information and experience that could be extremely valuable to American military and commercial security interests.

Further, the US military could disperse peacetime cargo shipments over hundreds of ships instead of concentrating them in just a few dozen vessels. This would greatly complicate any effort to target US supply lines in the early stages of a military confrontation. And American ships would indeed carry a “substantial” share of US import-export trade, which would diminish the harm that any attempted supply chain manipulation or warfare by China could cause and would enhance America’s ability to respond in kind by giving it physical control over a significant share of China’s goods in transit. In some respects, the security benefits of having a more robust American commercial fleet mirror the security concerns that stem from the more robust fleet China has developed (along with its shipbuilding, port operations, and other commercial maritime industries).

Setting aside the question of cost, few would disagree that a more robust fleet of US flag ships in international trade would enhance American security interests. It would restore key tools that are largely missing from America’s arsenal today, tools that China has developed to a historic level. However the US may use those tools, whatever the security enhancements they can provide, America’s lack of them creates vulnerability, while developing them would help preserve the peace by deterring military aggression and reducing risk in our maritime logistics supply chains. The questions thus are whether there is a viable approach to growing America’s commercial maritime industries and how to structure and pay for a program that will be most effective and cost-efficient. The following chapter explores one set of options.
V. RECOMMENDED CHANGES TO AMERICAN MARITIME POLICIES

Vision
America’s challenge in competing with China in the maritime domain is not that the United States doesn’t have a commercial maritime industry—fortunately, it does. We are not starting from scratch. The challenge lies in the scope and scale of the industry, the large gaps between America’s commercial maritime capabilities and those of China, and the serious military and economic security concerns they imply. Given that America’s industry reflects policy choices made in a geopolitical context that today differs radically, it is essential that we not blindly continue down the same path without pausing to assess whether we need to make significant policy changes.

Stated differently, spending on security today needs to address the real security threats of today and tomorrow, not the perceived threats of 30 years ago. The threat of China has prompted major shifts in Pentagon spending and new investments in key industries that broadly affect the American economy. This should include America’s shipping and shipbuilding industries, important components of America’s military and economic security infrastructure. America should compete in this domain also and not rely solely on the capabilities of allies nor on American economic or military power in other domains. It should neither overreact nor underreact to the new risks but establish realistic policies to enable American shipping and shipbuilding companies to regain greater significance in global markets and to become more effective tools for improving the resilience of our supply chains and for projecting American power and deterrence.

Photo: MV George III. (Courtesy of Pasha Hawaii)
The broad objective thus should be growth in America’s commercial maritime industries. What motivates entrepreneurs is the prospect of growth, and American maritime entrepreneurs are no different from entrepreneurs in other sectors and countries. They respond energetically to growth opportunities and would certainly do so if the US reconfigured policies to encourage more growth in the maritime sector.

Policymakers need to design changes to encourage growth through advances in technology, helping America catch the next wave of technologies that will drive ship construction and operations in the years ahead. Key applications for technology should focus on two areas: the human element and environmental performance. Current shipbuilding powers increasingly rely on robotics and other advances in construction processes that bring labor and other market costs down to levels that, given the same or better technology, the US could eventually match for certain vessel types. Just as smart industrial policy has enabled the survival and renewal of certain American industries (such as automobile manufacturing), the objective should be to obtain a similar outcome for American shipbuilding.

Similarly, more autonomous vessel operations are necessary for improving bridge management and other safety considerations, helping address mariner shortages, and improving survivability in the context of military sealift operations. For all these reasons, America should be at the cutting edge of developing autonomous vessel operation technologies for commercial vessels to jump-start the deployment of autonomous-ready ships (capable of fully uncrewed operations in emergency conditions) and for standard commercial operations, providing the immediate benefits of better safety and improved crew living standards.

Maritime environmental performance primarily concerns propulsion—finding and deploying technologies that reduce and eventually eliminate the carbon footprint of shipping. The list of potential breakthrough technologies is long and includes alternative fuels (e.g., hydrogen, ammonia, methanol), ship carbon capture and storage, nuclear propulsion, and wind-assisted propulsion. While American companies are involved in most of these areas, most do so in partnership with foreign companies that are, or have connections to, much larger shipping or shipbuilding companies. Those are the companies that have the customer base and competitive motivation as well as the resources necessary to push technology forward.

As Commerce Secretary Gina Raimondo recently said concerning the microchip industry, “We sacrificed our manufacturing capacity and workforce in the mistaken belief that we could somehow maintain our technological leadership without them.” We could make precisely the same comments about the American shipping and shipbuilding industries. A targeted program to expand commercial shipbuilding in the US needs to include a heavy emphasis on developing and deploying advanced technologies.

**A New American Maritime Policy**

**Summary**

Below are the key elements of proposed policy changes that are designed to restore significantly greater American participation in international shipping and shipbuilding markets and that correspond to a reasonable assessment of the new threat environment America faces. The basic intent is to expand the US flag fleet to provide greater deterrence and resilience to meet these threats, and to leverage the fleet expansion to provide a consistent demand signal to support the expansion and modernization of US commercial shipbuilding. This summary also includes suggestions for addressing certain important details of the new policies. The new policies build on and reform existing US programs, emphasizing technology and innovative procurement practices to achieve prompt and long-lasting growth in this vital sector.

The key elements of the program are as follows:

- **Expand and reform existing US flag programs (a New MSP).** Replace existing programs that support US flag ships
in international trade with a single new program that aims to eventually triple—to 250 ships—the international US flag fleet. Important details (procurement strategy, rollout schedule, business model, funding) are discussed below.

- **Phase in a requirement that ships in the New MSP be built in US shipyards.** This would create a consistent demand signal for the construction of 10 to 15 commercial ships per year (in addition to ships required for domestic trade) in American shipyards for the indefinite future. Key details below include the procurement strategy and technology requirements as well as how to address a mismatch in pacing rollout of the fleet expansion (including reflagging existing vessels) and rollout of the US build requirements.

- **Develop and implement a limited, top-quality second American ship registry.** Encourage American companies participating in the New MSP to register a like number of ships (250) in a newly developed American ship registry. The new registry would have the highest regulatory standards, generally matching those of the primary US flag registry, except that it would permit non-US citizen crews from allied countries. The creation of a second registry would require legislation, and certain details are covered below. Between the expanded fleet in the New MSP and the fleet that the second US ship registry authorizes, the total number of American ships sailing in international trade would grow from 85 at the beginning of 2023 to 500 within the first few years of implementing the new program.

- **Preserve and strengthen policies that support America’s domestic commercial shipping and shipbuilding industry.** This segment of the industry is experiencing substantial growth and innovation as market demand for alternative energy sources drives billions of dollars in maritime investments. While the policy objective driving these investments is environmental and is not directly related to national security concerns, implementing the policies supports US security interests by (among other things) providing a market basis for America’s shipping and shipbuilding industries to grow. Consistent application of the existing laws remains extremely important to provide the confidence entrepreneurs and financiers need to continue making such investments. The US should also close loopholes allowing foreign ships into America’s domestic markets.111

- **Update US government oversight of maritime programs and evaluate possible changes to the international maritime regulatory system.** Consider elevating and shifting government oversight and funding for the New MSP and other maritime programs to a new structure. Further, undertake a special study to assess possible changes in the regulatory system governing international shipping to improve transparency and integrity.

**Discussion**

**Fleet size.** The number of US flag ships that this report recommends for the New MSP simply corresponds to the number of vessels and mariners that analysts have identified as realistically necessary to meet basic military mobility sealift requirements in a Western Pacific confrontation with China. That fleet would also, however, contribute to supply chain security and other military and economic security benefits that are noted above. Hence, although the Pentagon’s assessment of its mobility requirements is certainly relevant to the sizing and composition of the fleet, we should not continue making the same mistake and base the fleet solely on that assessment. Some would argue that the fleet should be much larger—a reasonable position if costs were not a factor. We can reasonably say, however, that a 250-ship fleet (based on the Pentagon’s mobility requirements discussed above) is the minimum that America needs to meet our military and economic security requirements, and then we can resolve that as long as America remains a global superpower, it will always support a fleet of at least that size.

**Pacing.** Implementing the New MSP will require a ramp-up period and then steady-state operations. The speed at which
America could implement the fleet expansion program depends primarily on how quickly it can develop and deploy qualified American crews. From a technical standpoint, nothing would prevent the transfer and reflagging of suitable foreign vessels currently operating in international trade to the US registry. However, the US maritime industry (like many other industries) is confronting serious workforce development challenges—mariner shortages—even with existing growth in domestic trade. Add incremental growth of about 160 more ships under the New MSP, and the mariner shortage will become that much more acute, at least in the short term. Over the longer term, the consistent demand signal from the New MSP should aid in mariner recruitment and eventually stabilize the mariner base.

Several initiatives have been proposed or are underway to address manpower shortages in this critical industry. They properly focus on public awareness—communicating with potential recruits not only the availability of excellent career opportunities but also the higher value of serving America in this way. The proposed initiatives seek to clear away the delays in the licensing and credentialing processes that come from decades of under-investment and to update training protocols to leverage remote learning (including during downtimes on board the vessels) and make them more efficient. Further, improvements in living conditions on board US flag ships and in US shipyards are essential aspects of the recruiting and retention process. Fortunately, with a workforce of more than 167 million Americans, recruiting the necessary numbers of mariners and shipyard workers is certainly achievable given proper industry focus and government support.

In addition to supporting efforts to improve industry recruitment, training, and retention, the recommendation here is to set an aggressive but realistic schedule with hard annual deadlines for growing the fleet. If the industry cannot meet the deadline for a given year through the recruitment of qualified American citizen mariners, special immigration status would be available for qualified and carefully vetted foreign mariners to fill out the unfilled billets. This would not only help accelerate fleet expansion but could also enable the development of a more robust merchant marine reserve.

The speed at which ship manufacturers and owners could introduce US-built vessels into the program depends on a variety of factors, including whether existing newer vessels would be eligible (and under what conditions), current and projected shipyard availability, and a longer-term overall pacing schedule. Further, the lag time between contract award and implementation will be much longer for ship construction than for reflagging. The goal is to provide a predictable, long-term demand signal for US shipyards to deliver 10 to 15 new ships each year. This new source of work will require planning and investment by those shipbuilders interested in participating in the program. At some point within the first few years, however, MARAD should expect enough US shipbuilders to be able to ramp up operations to meet the requirements.

While fleet expansion can and should ramp up to full capacity on an accelerated schedule, the schedule for introducing US-built ships into the program should remain at a steady state (10 to 15 ships annually) once it reaches that level (see figure 3 on page 10). Over time, MARAD should replace foreign reflagged vessels it admitted into the program during its early years with US-built vessels.

**Procurement strategy.** The program would require annual competitive bidding for the first few years until it achieves steady-state capacity. It could use separate bid pools for reflagged and US-built vessels. Companies and vessels in current programs would receive preference to participate in the new program, presuming favorable technical and reasonable pricing proposals. It should award contracts for fixed terms and periodically rebid those contracts.

In general, the procuring agency would issue bid requests for program slots (and stipends and other benefits of pro-
gram participation), setting clear criteria for bidding teams to meet, then base a contract award on the bids offering the best value to the government. Those criteria could include the following:

- **Vessel type.** In addition to the legacy fleet, early procurements would likely favor tankers given the Pentagon’s clear need, although policymakers should also value the benefits of having a diversified US flag fleet.

- **Commercial viability.** Bidders will obtain most of their revenues through competitive international commercial markets, with the government funding only incremental costs and incentives based on each bidder’s assessments.

- **Global reach.** The program should give preference to American companies that can demonstrate strong contractual or other relationships with shipping companies based in allied nations, both to support commercial viability and to potentially expand support for protecting American military and economic security interests.

- **Technology.** As noted, bid criteria should emphasize the use of technology in vessel construction, operations, and security. The goal is for the US flag to generally be recognized as the most environmentally advanced and crew-friendly registry in the world.

**Business model and pricing.** Current programs rely on three sources of revenue to establish economic viability for program participants: government stipends in amounts that are fixed by statute, government preference cargo, and international commercial cargo. In general, the stipend amounts aim to offset a portion of the incremental cost difference between operating a vessel under a US flag and operating a vessel under a flag of convenience (FOC). The participants’ ability to cover the remaining portion and to eventually make an economically viable profit is based on revenues from both government preference cargo and international commercial markets. Because the New MSP will dramatically expand the size of the fleet that is eligible to carry preference cargo, competition among those vessels and participants will likely disperse the cargo over a much larger base and drive down freight rates (and improve service), with the result that vessels under the New MSP will earn significantly less revenue from preference cargo than do vessels under the current MSP. Hence, depending on other incentives discussed below, the amount of the stipend may become a more significant factor in incentivizing participation in the New MSP.

The recommendation here is not to fix the amount of the stipend by statute but instead make it part of the competitive bidding process. The goals are to gain the benefits of competition in the bidding process and to recognize that different vessel types will have different incremental US flag costs to cover. Pricing (the amount of the stipend) would not be decisive in determining a contract award. As noted, the program would structure procurement with awards based on the best value to the government considering all relevant factors and not necessarily on the lowest price.

**Funding.** The elements of the new program that would entail additional taxpayer support are primarily the operating costs for a threefold expansion of the existing US flag international fleet, the capital costs of phasing in a requirement that those ships be built in the US, and a much smaller amount to cover the incremental costs for US second-registry ships. Lower costs for shipping US government preference cargoes would partially offset those costs. As noted, administering the program through a competitive bidding process will ensure that the government receives competitive pricing and innovative proposals. Even if government stipends directly fund the entire cost of the program, given the alternatives for addressing the security concerns that this report discusses, and given that the new program would be based on a more realistic assessment of today’s geopolitical challenges, policymakers should view the costs of the new program as reasonable and modest.
Moreover, policymakers could also consider several alternative sources of funding for the program (or incentives for participation). For example, some have proposed extending cargo preference to certain North Atlantic Treaty Organization countries’ government shipments as a means for those countries to meet a portion of their funding commitments. Other proposals would impose a requirement that certain commercial customers use US flag tankers for import-export shipments or offer a tax credit to all US importers and exporters for cargo that they transport on American ships. Customers may also benefit from using low- or zero-emissions American ships in determining their “Scope 3” emissions footprint. Modest government support of a “Ship American” public relations campaign could encourage support by cargo interests that would improve capacity utilization even if there is no effect on freight rates. There are benefits and challenges to each of these and other funding approaches, all of which policymakers should explore.

This report also recommends that the government continue channeling funding directly to the program (through the Department of Transportation or, as discussed below, the Department of Homeland Security), but not make it subject to annual appropriations. This approach recognizes the broader importance of the commercial maritime industry to American security interests and would provide the certainty that is necessary to make the required investments. The Pentagon would remain fully involved in all aspects of the implementation and operation of the program in collaboration with other departments. The procuring agency would conduct program reviews on a five-year basis.

**US Second Registry.** The security value of a potential US second registry fleet focuses on the peacetime and gray-zone domains—helping secure maritime logistics supply chains by putting a larger share of commercial cargo in transit under the control of American companies and by creating a significantly larger number of American commercial ships that routinely operate in Western Pacific ports and trade. The second US registry would not be a substitute for US flag first-registry ships when it comes to key military sealift needs. Foreign mariners could crew second-registry ships, and one of the fundamental reasons to support US flag shipping is the expectation that loyal American crews would be likely to accept greater risks than foreign crews in resupplying American troops during a conflict. For that reason, only first-registry US flag ships would carry US government cargo (practicing in peacetime what we may expect in war); only companies that participate in the first-registry US flag fleet program could enroll ships in the second registry, ensuring US citizen control of ships in both registries; and the new program would cap the number of second-registry ships at 250, the minimum number of first-registry US flag ships it specifies.

At the same time, it should be obvious (and for reasons discussed above) that having significantly more commercial shipping capacity under US citizen control, even if some of the crews are not American citizens, would strengthen American security interests in the domains beyond core sealift functions. Hence, adding a limited and controlled fleet of second US registry ships would be an important force multiplier and come at a minimal cost to taxpayers. There would also be flexibility in crafting the legislation that would create a second registry to define key requirements for vessel ownership, crew qualifications and rights, vessel classification and performance factors (including environmental performance), and other relevant considerations. The ultimate objective is to ensure that ships flying the US flag in international trade, whether first or second registry, meet the highest standards for vessel performance, labor management, and environmental stewardship.

**Long-Term Structural Changes**

As noted, the purpose of the short- and mid-term changes in policy that this report recommends is to accelerate increased US participation in international commercial shipping and shipbuilding markets to help deter current and foreseeable geopolitical risks. Policymakers would make these changes against the backdrop of an unchanged international shipping regulatory system, though it is a system that merits reexam...
Innovation. The open registry or FOC system governing international shipping takes the inherent cost, tax, and regulatory advantages that different nations have one over another to an entirely different level than traditional trade theory would envision. Certain core requirements affecting cost, transparency, and other issues in the international shipping industry are not meaningfully tethered to any political input, whether by the home jurisdiction of the vessel’s owners (assuming that can be determined) or by the jurisdiction in which the owners register it. The result is a shipping industry characterized by a culture of evasion, heavily populated by companies and vessels that are essentially stateless. Although most shipowners choose for a variety of reasons to operate in a fully responsible manner, many others do not, sometimes with catastrophic results. This problem raises many potential concerns, including questions about the FOC system’s effect on the viability of companies and vessels registered in the United States and other advanced economies that treat shipping as an important industry that should meet reasonable regulatory standards.

The current system exists for many reasons that may be historically valid but have become obsolete in a globally integrated, information-driven society. Reforming the international shipping regulatory system would not affect responsible shipowners, but it could set a floor on maritime worker rights and condition market access to permission given by each nation. This could not only reduce abusive practices but also strengthen defenses against abandonment, sabotage, sanctions evasion, and so on by increasing transparency and the ability to hold unscrupulous shipowners accountable for their actions. A byproduct of reform would be the elevation of international shipping standards closer to a level that is competitive for American ships.

One need look no further than international aviation—the industry most closely analogous to international shipping—for a model the international shipping industry could follow. While the core functions of the two industries are essentially the same (aircraft carrying mostly people by air between nations versus ships carrying mostly cargo by sea between nations), the core principles underlying the international regulatory systems are fundamentally different. The 1944 Chicago Convention, which 133 countries have ratified and which the ICAO administers, governs international aviation. Article 1: Sovereignty expresses its most basic principle: “The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory.”

Building on that principle, the international aviation industry has developed an elaborate system of controlled market entry (the various “Freedoms” of aviation) based on each nation’s decision to permit aircraft of other countries to land, carry passengers or cargo to and from that nation, or cross-trade with third countries. Bilateral and multilateral agreements determine the permission to engage in international aviation. These are mostly quite liberal and promote competition but nevertheless prohibit a foreign business entity from deciding for itself, without any government permission, that it will serve the sovereign territory of another country in whatever manner it chooses. That system generally prohibits FOC aircraft, and American air carriers have flourished under it.

Contrast that system with the core understandings governing international shipping: “Parties to this Understanding . . . agree to refrain from any discriminatory measure and/or practice which would impinge upon the choice of flag or upon free competition in international sea-borne transportation of commercial cargoes shipped by carriers of participating Parties.”

While the aviation convention as a practical matter prohibits FOC aviation, the Organisation for Economic Co-operation and Development (OECD) agreement expressly mandates FOC shipping by prohibiting participating countries from discriminating against FOC ships in any way. As a result, FOC aircraft are almost nonexistent, and three of the top global airlines are US carriers Delta, American, and United. In contrast, 72 percent or more of the vessels operating in international trade are now
FOC ships; the highest-ranked American shipping company is twenty-eighth in the world; and less than 1 percent of US import-export trade moves on US flag ships.

Reforming and improving the regulatory system governing international shipping would require significant analysis and consultations with industry and governments around the world. Many existing maritime organizations, including the United Nations’ International Maritime Organization, provide valuable services in advancing maritime safety, ship security, and environmental performance. A new, more transparent regulatory regime reoriented to better manage the international shipping business would undoubtedly incorporate the better parts and organizations of the current system. In short, while the case for fundamental change in the international shipping system is compelling, a comprehensive analysis of both the desired end point and the path to it is necessary.

Finally, current US government management of the commercial maritime industry is fragmented and not well positioned for success. The lead agency is MARAD, a subordinate agency of the Department of Transportation (DoT), which is responsible for promoting the American maritime industry and managing MSP, cargo preference, and other programs. It has strong ties to the Pentagon’s US Transportation Command and the Navy’s Military Sealift Command, among other DoD commands in connection with sealift and other military functions. The US Coast Guard (USCG) is a key agency within the Department of Homeland Security (DHS) and has a much larger, operationally focused organization responsible for maritime safety, homeland security, the marine environment, and many other issues. No federal agency has clear responsibility over the economic security of international maritime logistics supply chains. The primary mission of the Federal Maritime Commission (FMC) is to address unfair practices in the international container shipping industry. It has shown initiative in drawing attention to concerns around supply chain security and can continue to make important contributions to deterring supply chain manipulation or warfare.

Along with the fundamental expansion and reform of the programs supporting American shipping and shipbuilding recommended in this report, there needs to be an organizational review to evaluate the government agencies managing these programs. Some analysts recognize that MARAD’s functions do not fit well within the DoT, as the primary agencies within the DoT’s portfolio (other than MARAD) focus on regulations that are heavily oriented toward safety and have limited connections to military security. At a more fundamental level, MARAD’s advocacy for the US merchant marine has been disconnected from the broader national strategy of promoting global cooperation and trade as a means to stability, democracy, and prosperity—which should include a much larger US role in international shipping. Despite consistent good faith on the part of the leadership of DoT and MARAD, past efforts to promote a more robust American maritime industry did not gain traction.

Some experts have suggested shifting MARAD to DHS to better align it with the US Coast Guard to achieve synergies and operational efficiencies and give it added support to carry out its missions. The USCG generally has a strong international reputation for competence, which it would utilize in the context of representing a larger and more robust American commercial industry. Pairing these agencies under DHS could be very effective in helping America to become a stronger leader of the world’s maritime community.
VI. CONCLUSION

Few in America anticipated the geopolitical challenges that the country faces today when Washington set its current international trade and transportation policies decades ago. This report focuses on a relatively obscure (to most Americans) but very important subset of those challenges—the risks to American military and economic security that China’s increasing dominance of international commercial maritime activities poses and how America could enhance its commercial shipping and shipbuilding industries to provide a more effective tool to advance our security interests in this sector.

Implementing the policies that this report recommends would fundamentally change the trajectory of the American maritime industry. If the United States makes these changes, in less than 10 years, at least 500 technologically advanced American ships will be handling 5 to 10 percent or more of US import-export commerce instead of the less than 1 percent they handle today, and American shipping companies will be in a position to grow from that base. The Pentagon will have enough sealift capacity—American ships and mariners—to sustain American and allied troops in an overseas conflict. Instead of wringing our hands about the state of America’s shipbuilding industrial base, we will be sending a consistent demand signal for a minimum of 10 modern new

Photo: Vehicle carrier Green Lake. (Courtesy of SEACOR)
commercial ships per year for the indefinite future. This will enable multiple US yards to plan and invest in shipyard technology and infrastructure to gain the efficiency of series construction programs. And American shipping and shipbuilding companies will be able to offer the career commitment and lifestyle improvements necessary to recruit, train, and retain a skilled workforce of American mariners and shipyard workers in numbers that will be sufficient to meet the new demand signal.

In short, adopting this new American maritime policy is an achievable solution that would send a signal to the American people, our allies, and our adversaries that we can and will compete effectively in this very important domain.
ENDNOTES


3 Col. William “Trey” Braun, a professor at the US Army War College, argues that China’s grand strategy is analogous to Go, in contrast to US grand strategy, which is analogous to chess. In short, Go prioritizes patience and position, and victory is a matter of degree rather than all or nothing, achieved slowly by outmaneuvering the opponent. Chess, on the other hand, prioritizes seizing and retaining the initiative to achieve an endgame that is objectively zero-sum (win, lose, or stalemate). David Vergun, “Ancient Game Used to Understand US-China Strategy,” Army News Service, May 25, 2016, https://www.army.mil/article/168505/ancient_game_used_to_understand_u_s_china_strategy.


5 UN Conference on Trade and Development (UNCTAD), Review of Maritime Transport 2022: Navigating Stormy Waters (New York: United Nations, 2022), https://unctad.org/system/files/official-document/rmt2022_en.pdf. These data consider fleets that shipowners possess in both the PRC and Hong Kong as subject to control by the PRC and therefore combine them. Table 1 in this report provides a brief summary of key data on the global commercial fleet from the UNCTAD report.


10 Graham Allison coined Thucydides’s Trap to describe the tendency for rising powers to come into conflict with established powers. Allison argues that these conflicts come about due to a combination of the rising power’s desire for prestige and resources, the established power’s fear of decline, misperceptions, and a breakdown of international institutions. “The Thucydides Trap: Are the US and China Headed for War?,” The Atlantic, September 24, 2015, https://www.theatlantic.com/international/archive/2015/09/united-states-china-war-thucydides-trap/406756.

11 Military analysts will remind us that economic integration has not always succeeded in deterring war. While true, the scope and scale of today’s global trading system, which was designed in the ashes of the most horrific conflagration in human history, offers hope that it can continue to promote peace even as we hedge our bets by de-risking economic dependence in key areas.

12 Former commander of the Indo-Pacific command Adm. Phil Davidson testified in March 2021 that China could seek to control Taiwan by 2027. Mallory Shelbourne, “Davidson: China Could Try to Take Control of Taiwan In ‘Next Six Years,’” USNI News, March 9, 2021, https://news.usni.org/2021/03/09/davidson-china-could-try-to-take-control-of-taiwan-in-next-six-years. J. Kyle Bass outlined more than ten extraordinary measures China has recently taken that suggest a more imminent threat of war. J. Kyle Bass, Miles Yu, and Paula Dobriansky, “China Prepares for War: A Timeline,” Hudson Institute China Center, July 12, 2023, video recording, 1:16:26, https://www.hudson.org/events/china-prepares-war-timeframe-miles-yu-kyle-bass. These include increasing the number of intercontinental ballistic missile launchers from 100 to 450 since 2020; permitting 106 gigawatts of coal-fired power generation in 2022, which would replace comparable power-generation capacity currently met with LNG sourced in Australia (which would be embargoed in a conflict); stockpiling up to 18 months
of food supplies; opening 18 air raid centers; incentivizing blood donations; and establishing the world’s largest combat hospital in Fujian Province, across the strait from Taiwan.


15 UNCTAD, Review of Maritime Transport 2022, tables 1.1 and 1.2.

16 See discussion in chapter III.

17 The International Maritime Organization (imo.org), an arm of the United Nations, sets international standards for regulating vessel safety, security, environmental performance, and other matters involving vessel operations. It does not have authority, however, to regulate economic or most social aspects of shipping services.

18 The UN Conference on Trade and Development considers most of the top ship registries globally (in terms of vessel value) to be “open” or “flag of convenience” registries, including those managed primarily out of the US. UNCTAD, “Maritime Transport Services,” in Review of Maritime Transport 2022, table 2.7.


20 Alfred Thayer Mahan, The Interest of America in Sea Power, Present and Future (Port Washington, 1897), 124.


25 Gallagher, “Undersea Telecommunication Cables.”


28 Because the United States has a vested interest in protecting the integrity of its undersea telecommunications cables, it recently took important steps to enhance the maritime security associated with such cables. The 2019 Cable Ship Security Program, P.L. 116-92, § 3521 (codified at 46 U.S.C., § 53202) provides government support for two US flag cable ships that are responsible for the maintenance and repair of these critical infrastructure assets. We discuss this further in chapter III.


30 See the discussion in chapter IV.

31 The average daily cost of operating a US flag vessel was found to be about $12,600 higher than operating a foreign “open registry” vessel in a 2011 study by MARAD, with almost 90 percent of the difference attributable to crew costs. Comparison of US and Foreign-Flag Operating Costs (Washington, DC: US Department of Transportation, 2011), https://www.maritime.dot.gov/outreach/publications/comparison-us-and-foreign-ship-operating-costs. Another study found that wages accounted for about 27 percent of US shipbuilding costs. MARAD, The Economic Importance of the US Private Shipbuilding and Repairing Industry (Washington, DC: US Department of Transportation, 2021). For reference, while labor costs in China have increased dramatically over the past 20 years, they are still 74 percent lower than US labor costs according to https://iostat.iio.org.


Congress authorized the Voluntary Intermodal Sealift Agreement (VISA) program under the Defense Production Act, and it has three stages of activation. Stage one requires 15 percent of vessel capacity commitment by the carriers, stage two requires 40 percent, and stage three requires 50 percent for carriers not in the MSP. The Voluntary Tanker Agreement (VTA) came about in 2008, and Congress structured it in the same vein as VISA but focusing solely on tankers. As of April 2023, there were 101 ships in VISA and four ships in the VTA. Maritime Administration, United States–Flag Privately-Owned Merchant Fleet Report.


Among the last initiatives considered by the House Merchant Marine Committee (before it was discontinued in 1995) was a proposal to develop a series construction program to transition US shipbuilders toward international competitiveness. Later in the decade, Congress considered and rejected a proposal to adopt the OECD agreement on shipbuilding, which would have imposed severe penalties on subsidized vessels calling at US ports. Shipbuilding Trade Reform Act of 1992, H.R. 2056, 102nd Cong. (1992).


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46 USC, §53202. In 2021, MARAD implemented the Cable Ship Security Program (CSP), which is similar in design and purpose to the MSP “Request for Applications to Be Considered for Enrollment in the Cable Security Fleet,” Federal Register 86, no. 3 (January 5, 2021), https://www.federalregister.gov/documents/2021/01/05/2020-29159/request-for-applications-to-be-considered-for-enrollment-in-the-cable-security-fleet.


MARAD intended the stipend amounts in the MSP and sister programs (CSP and TSP) to compensate vessel owners for most of the cost difference between operating ships under the US flag (with higher labor, insurance, maintenance, and other cost elements) versus at the mean international (open registry) cost levels. Congress authorized an additional 10 tankers for the TSP program as part of the 2023 National Defense Authorization Act (NDAA),
thereby doubling the TSP fleet to a paper strength of 20 tankers.


Herberger, Gaulden, and Marshall, Global Reach, 163.

American citizens, referred to as Section 2 citizens, own and control at least 75 percent of these companies. See 46 USC, § 50501(d).

Commonly referred to as the Jones Act, America’s domestic shipping laws have their antecedent in several provisions that the first Congress approved in 1789. Congress has amended the law dozens of times since then, including minor changes that were made in the Merchant Marine Act of 1920 (which Senator Wesley Jones sponsored in the Senate, hence its name) and most recently in 2022, amending 46 USC, §501(a) concerning procedures governing waivers of the domestic shipping laws.


The only cost to taxpayers of domestic maritime programs consists of government support for small shipyards, marine highways, loan guarantees, and similar programs (not including port infrastructure), which combined average less than $100 million per year. Goldman, CRS Report R46654.

According to ILO data, average monthly earnings in China increased from about $100 in 2000 (about 5 percent of US average earnings) to about $1,200 in 2020 (26 percent of US earnings). See https://ilostat.ilo.org.

UNCTAD, Review of Maritime Transport 2022, table 1.8.


CSIS, “Hidden Harbors.”


BRS Brokers, Shipping and Shipbuilding Markets, 40.

Kalouptsidi, “China’s Hidden Shipbuilding Subsidies.”

BRS Brokers, Shipping and Shipbuilding Markets, 36.


Chinese companies (including Hong Kong) owned 9,829 large commercial ships (>1,000 gross registered tons) in 2022, twice the number of second-place Greece and about 18 percent of the global fleet. UNCTAD, Review of Maritime Transport 2022, table 2.5.

Based on the author’s analysis of UN data.

“This blurring of military and commercial activity is best exemplified at Jiangnan Shipyard. Nestled on the mouth of the Yangtze River near central Shanghai, Jiangnan is where China’s third and most capable aircraft carrier, known as the Type 003, is being constructed. Right next to the warship, work is underway on a commercial container ship that bears a distinctive green hull, the hallmark of Taiwan’s Evergreen Marine Corporation.” Matthew P. Funaiolo, Brian Hart, and Joseph S. Bermudez Jr., “In the Shadow of Warships: How Foreign Companies Help Modernize China’s Navy,” Center for Strategic and International Studies, accessed August 11, 2023, https://features.csis.org/china-shadow-warships.


Vishwanatha, Lubold, and O’Keefe, “Pentagon Sees Giant Cargo Cranes.”


Kardon and Leutert, “China’s Port Power.”

Examples include road and rail infrastructure and other industries that require significant steel fabrication.


See Herberger, Gaulden, and Marshall, Global Reach.


Buzby and Roberts, “Where Are the Ships?”

See LaGrone, “PACFLEET CO Paparo Talks Combat Logistics,” where Admiral Paparo also discussed the importance of changing the mindset around combat logistics, noting that in the uncontestable environments of recent conflicts, it was appropriate to think in terms of “maximum efficiency so that the American taxpayer dollar could be applied to combat power at the greatest point of need.” But in today’s world, “we’ve got to think less in terms of maximum efficiency and more in terms of maximum effectiveness.”


Among the US merchant marine’s most important contributions


96 It would be misleading to characterize as mistakes these fundamental flaws in the process of sizing the US flag international fleet. Those flaws were the product of the Pax Americana mindset of the 1990s that doubted the core value of having an American commercial maritime industry and were based on assumptions that in hindsight have proven inaccurate.

97 OECD, “Ocean Shipping and Shipbuilding.”

98 UNCTAD, Review of Maritime Transport 2022, table 1.6.


102 As the Wall Street Journal reported last March, analysts have raised serious security concerns because the cranes have sophisticated sensors that can track shipping containers and capture cargo information involving civilian and military customers. The manufacturer reportedly has access to such information from all its cranes, which it can monitor through its main office in Shanghai. Daniel Michaels, “Chinese Cargo-Data Network Poses Growing Risks, US Analysis Says,” Wall Street Journal, September 20, 2022, https://www.wsj.com/articles/chinese-cargo-data-network-poses-growing-risks-us-analysis-says-11683671601.

103 Miller, “Three Chinese Companies.”


105 E.g., by accessing third-party data through freight forwarders, open-ship registries, or other organizations involved in the international logistics ecosystem.


107 Wei, “Xi Prepares China.”

108 Reflecting the Mahanian viewpoint, US policy for most of the last century has explicitly aimed for American ships to carry “a substantial part of the waterborne export and import foreign commerce of the United States and to provide shipping service essential for maintaining the flow of the waterborne domestic and foreign commerce at all times” 46 USC, § 50101(a)(1). America has not been in compliance with this directive for many decades.


110 These changes presume that the existing open-entry international maritime regulatory system remains intact for the foreseeable future.

111 It would require an exceedingly compelling reason to degrade America’s domestic shipping laws at the very moment in history when our security posture has shifted so decisively and when growing America’s maritime capabilities is so clearly a priority. Claims that those laws impede the modernization or growth of America’s maritime industry, or that they impose extraordinary costs on customers or consumers, have no grounding in economic reality. We will cover additional details concerning America’s domestic shipping policies in a separate report.

112 For example, Coast Guard licensing processes for mariners still rely extensively on paper forms and records. Initiatives to digitize the process are still unresolved. [cite]

113 Vessels built under this program would not be eligible to operate in US domestic trades, both because such operations would not be
consistent with the security objectives of the New MSP (expanding vessel operations in international trades) and because they would be competing with vessels that were not built with government support.

114 We presume here that the US Maritime Administration (MARAD) would continue to lead the procurement process in close consultation with the Pentagon, Department of Homeland Security, Commerce Department, and other agencies.

115 The list of relevant technologies could include alternative propulsion, fuel efficiency and emissions reduction, autonomous systems, data analytics and predictive maintenance, advanced communication and connectivity, security hardening, and other factors.


117 Carmel, “Tankers for the Pacific Fight.”


119 Recent history validates the assumption that US crews are more reliable than foreign crews in delivering DoD cargo during a military conflict. Herberger, Gaulden, and Marshall, Global Reach, 168–70.


123 The OECD expresses these in “Understanding on Common Shipping Principles,” OECD/LEGAL/5012, August 6, 1993, Principle 1 (emphasis ours).


125 Buzby and Roberts, “Where Are the Ships?”