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Securing America's Maritime Security: A National Maritime Initiative to Regain American Maritime Competitiveness

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Securing America's Maritime Security

Bottom Line Up Front: The nation has for too long relied on less than friendly nations to transport its trade and has failed to adequately invest in its maritime industrial sector - to include its ports. The costs of this neglect are plainly visible today, with the nation's security and continued prosperity at risk. The recent allision by container ship *Dali* into Baltimore's Francis Scott Key bridge and the subsequent loss of life is only the most recent symptom of this neglect.

Today our nation's prosperity sails on others' ships, while our ports rely on suspect Chinese cranes, and potentially compromised logistic software that risks more than trade. From our ports sails the supplies needed to sustain military operations defending America's interests and citizens. Moreover, our ports and commercial ships serve a critical role in any disaster response, moving critical supplies to areas hit hard such as Puerto Rico by 2017's category five hurricane Maria.

Our maritime situation is a strategic vulnerability, that China could use as leverage against us. In fact, a Chinese proverb says it best with a slight twist this time with the borrower (U.S.) disadvantaged:

借船出海 - *"Borrowing a boat to go out on the Ocean"*

Key Vulnerabilities:

Reliance on foreign shipping. Of the more than 80,000 ships arriving at American ports, fewer than 200 are U.S.-flagged, -owned, and -crewed.[1] In a war, the Department of Defense concluded in a 2020 Mobility Capabilities Requirement Study that there is insufficient US Flag tanker capacity to meet defense requirements, necessitating enduring need for foreign flag tankers. This shortfall was confirmed in April 2023 testimony by the current Commander of Transportation Command, and while the specific numbers are classified it has been reported that over 80 tankers would be needed – it is unlikely this number considers the upward demand on tankers from closure of Red Hill fuel depot in Hawaii.[2] This says nothing of the need for

[1] In 2015 the Maritime Administration stated there were 82,044 port calls in U.S. ports, as of January 1, 2024 (last MARAD report) there are currently 185 U.S. flagged ships with 167 militarily useful.
Brent Droste Sadler, U.S. Naval Power in the 21st Century: A New Strategy for Facing the Chinese and Russian Threat (Annapolis: Naval Institute Press, 2023), pp. 1–2 and 239–250.
[2] Caitlin M. Kenney, "Tanker program adds 9 ships to fuel US military in a crisis," Defense One, July 27, 2023, https://www.defenseone.com/policy/2023/07/tanker-program-adds-9-ships-fuel-us-military-crisis/388924/ (accessed April 1, 2024).

HEARING TO RECEIVE TESTIMONY ON THE POSTURE OF UNITED STATES EUROPEAN COMMAND AND UNITED STATES TRANSPORTATION COMMAND IN REVIEW OF THE

sustaining a wartime national economy which would add considerably to the required number of tankers, as well as bulk carriers and container ships not accounted for. Making matters worse, a fractured domestic energy logistic network makes getting fuel to where it is needed tenuous. For instance, New England has almost no pipeline connectivity to domestic sources, and the existing pipelines are maxed out. These are also prone to cyber-attack as demonstrated by a successful May 2021 attack on the Colonial Pipeline. That incident stopped for six days critical energy flows from Gulf Coast refineries to New York City.[3] This situation makes movement of fuel by ship critical for sustaining parts of the nation, which in wartime that shipping may not be readily available.

Limited U.S. port infrastructure. Ports in the U.S. able to service the large container ships (i.e. Panamax and bigger) and tankers is limited due to access to rail, water depth, piers, and crane services. This makes the loss of any one of these ports a significant disruption to the national economy and security. For example, the Port of Houston handles just over 70 percent of all maritime container trade in the gulf coast region.[4] Such a disruption is playing out now with the closure of Baltimore harbor due to the March 26, 2024, allision already mentioned. Added to limited number of viable ports, specialization has also made the loss of some ports hard to make up in others - case in point, Baltimore is a major port for automotive exports and imports.[5] Despite the importance of our waterways and ports to the nation's economic and security well-being, the much championed Build Back Better effort has only resulted in relative minuscule amounts of funding. For example, at the end of 2023, after two years and $400 billion dollars spent, ports and waterways accounted for 4.3% of total budget and 1.1% of the total projects supported.[6]

DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2024 And THE FUTURE YEARS DEFENSE PROGRAM, April 27, 2023, pg. 14-15, https://www.armed-services.senate.gov/imo/media/doc/23-39_04-27-2023.pdf (accessed April 1, 2024).

[3] Kevin DeCorla-Souza, Matt Gilstrap, and CeCe Coffey, "East Coast and Gulf Coast Transportation Fuels Markets," EIA, February 2016, pg. 32, https://www.eia.gov/analysis/transportationfuels/padd1n3/pdf/transportation_fuels_padd1n3.pdf (accessed January 31, 2023) and EIA, "Planned shutdown of Philadelphia refinery will change gasoline and diesel supply patterns for the U.S. East Coast," This Week in Petroleum, July 3, 2019, https://www.eia.gov/petroleum/weekly/archive/2019/190703/includes/analysis_print.php (accessed January 31, 2023).

[4] "Trade Highlights and Performance Data," Port of Houston, 2022, https://porthouston.com/about/our-port/statistics/ (accessed April 1, 2024).

[5] "2023 Foreign Commerce Statistical Report," Port of Baltimore, 2023, pg. 1, 7 and 10, https://mpa.maryland.gov/Documents/2023FCSR.pdf (accessed April 1, 2024).
"Top 14 Busiest Container Ports in the United States," GoComet, February 25, 2024, https://www.gocomet.com/blog/top-container-ports-in-the-united-states/ (accessed April 1, 2024).

[6] "FACT SHEET: Biden-Harris Administration Celebrates Historic Progress in Rebuilding America Ahead of Two-Year Anniversary of Bipartisan Infrastructure Law," The White House, November 9, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/11/09/fact-sheet-biden-harris-administration-celebrates-historic-progress-in-rebuilding-america-ahead-of-two-year-anniversary-of-bipartisan-infrastructure-law/ (accessed April 1, 2024).

Zero-day dangers in shipyard cranes. Recent reporting has exposed the potential cyber vulnerability built into Chinese sourced heavy lift cranes at U.S. ports. Chinese manufacturer, ZPMC, holds a dominant position in the global crane market, accounting for more than 70 percent of all ship-to-shore container cranes at U.S. ports.[7] While not uncommon for heavy equipment to have such features for predictive maintenance, the option for including these feature were not part of their purchase agreements. This raises serious concerns given recent reporting by U.S. Coast Guard Cyber Command of long running, concerted Chinese effort to access critical U.S. infrastructure, most notably the recent Chinese cyber-attack known as Volt Typhoon.[8] Recent efforts have done much to expose this vulnerability but compromised cranes are not the only vector available for cyber espionage and attack.

China's LOGINK digital logistics risk. Global transportation of goods occurs over various logistic functionalities; freight forwarding services, container/shipment tracking, and national customs data submissions via Port Single Windows. As a logistics management platform, LOGINK was designed to improve cost efficiency of shipping cargo by consolidating various data streams, including price and tracking information. From inception in 2007, LOGINK has been a product of the Chinese Communist Party (CCP), with stewardship since 2019 being the Ministry of Transportation's (MOT) China Transport Telecommunication & Information Center (CTTIC [中国交通通信信息中心]). To encourage LOGINK adoption overseas, the CCP has offered LOGINK free of charge; since 2010 it has been adopted at over 20 ports in Japan, South Korea, Malaysia, Portugal, Spain, United Arab Emirates, Ukraine, Israel, Latvia, Netherlands and Germany.[9] Widespread adoption of LOGINK standards would provide the CCP a vector to access logistic and trade data, potentially even manipulating data or severing access. Similar non-Chinese logistic management platforms include: Flexport, FreightPOP, Shipwell, Freightview and DHL Salodoo. However, none of these approaches the scope of sources of LOGINK, but competitors like Gnosis Freight offer a compelling alternative as it grows its access to more data streams and customers. Should LOGINK be adopted in the U.S. it would be subject to the Ocean Shipping Reform Act of 2022.[10] That Act, empowers the Federal Maritime Commission to regulate shipping exchanges beginning from 2025; as of April 1, 2024 LOGINK is not registered.[11] CCP control of LOGINK poses a national security risk and exposure to predatory market behavior. U.S. antitrust law has struggled to address China anti-competitive

[7] "Chinese-Built Port Cranes May Be Able to Call Home On Their Own," The Maritime Executive, March 7, 2024, https://maritime-executive.com/article/chinese-built-port-cranes-may-be-able-to-call-home-on-their-own (accessed April 1, 2024).
[8] Testimony of Rear Admiral John Vann, U.S. Coast Guard Cyber Command, "Port Cybersecurity: The Insidious Threat U.S. Maritime Ports," Subcommittee on Transportation and Maritime Security, February 29, 2024, 34min. 21sec., https://homeland.house.gov/hearing/subcommittee-on-transportation-and-maritime-security-hearing/ (accessed April 1, 2024).
[9] "LOGINK: Risks from China's Promotion of a Global Logistics Management Platform," U.S.-China Economic and Security Review Commission, September 20, 2022, pg. 8-9, https://www.uscc.gov/sites/default/files/2022-09/LOGINK-Risks_from_Chinas_Promotion_of_a_Global_Logistics_Management_Platform.pdf (accessed April 1, 2024).
[10] Ocean Shipping Reform Act of 2022, Public Law No: 117-146
[11] Federal Maritime Commission, April 1, 2024, https://www2.fmc.gov/FMC1Users/scripts/ExtReportsTOC.asp (accessed April 1, 2024).

behavior, especially Chinese State-Owned Enterprises (SOE), which have claimed sovereign immunity pursuant to the U.S. Foreign Sovereign Immunities Act (FSIA).[12]

Navigational GPS spoofing. In 2019 Iran spoofed the navigation system of the British tanker *Stena Impero* in the Strait of Hormuz.[13] The ship's crew thought they were in international waters when they were actually in Iranian territory. The ship and its crew were held for 10 weeks by Iran. The same year, NATO military exercises in the Baltic Sea were disrupted by Russian GPS spoofing. Good navigational practices would dictate system redundancies and independent backup navigational positioning (e.g. radar fixes, visual fixes, running fixes) to prevent incidents such as the *Stena Impero*. That said, sophisticated GPS and other navigational spoofing is a risk that calls for enforcement of sound navigational practices and backup measures to ensure ships safely navigate U.S. restricted waters.

Fuel tampering and contamination. The March 26, 2024, allision of container ship *Dali* into the Francis Scott Key bridge in Baltimore has raised the specter of tampered fuel. Speculation over fuel contamination on the *Dali* emerged after an exclusive report in The Wall Street Journal cited a U.S. Coast Guard briefing that talked of the engines sputtering and a smell of burned fuel in the engine room.[14] While investigations are ongoing, it cannot be ruled out that improper fuel loading or handling could just as likely be to blame for the loss of ship's power. Typically, commercial ships use higher grade fuels in port to meet environmental requirements as well as for greater reliability, shifting to lower grade fuels once in the open ocean. If the fuels were switched while still navigating in port it would represent a procedural violation as well as an opportunity for human operational error at a critical navigational moment. Finally, improper maintenance or poor material conditions could also lead to the loss of propulsion and warrants further investigation. In this case, the consequence of the allision is the loss of six lives, billions of dollars in damages, and the shuttering of the ninth largest U.S. port.

Not Enough Mariners and Shipyard Workers. Too few mariners and shipyards workers has had a deleterious effect on attempts to grow the maritime industry. Moreover, too few American merchant mariners means the nation is too reliant on foreign sealift to meet military operational needs as well as sustain a wartime economy. A 2017 study released by the U.S. Maritime Administration pointed out that the nation had a deficit of 1,839 certified and fit-for-service mariners in case of war – the actual deficit is unknown and likely higher as the 2017 estimate was to support military operations and not to sustain a wartime economy. As that merchant mariner population retires (in 2021 the average American merchant mariner was 47 years old) as the nation's need for sealift grows proportional to a potential war with China, the mariner deficit today is likely much worse. Commercial shipyards and naval shipbuilders alike have faced endemic workforce shortages. This is driven by several factors: uncompetitive wages, too few young workers willing to work in the challenging conditions of America's antiquated

[12] Foreign Sovereign Immunities Act U.S. Code 28 §§ 1603

[13] "MARAD Warns of Iranian GPS Jamming in Strait of Hormuz," The Maritime Executive, August 9, 2019, https://maritime-executive.com/article/marad-warns-of-iranian-gps-jamming-in-strait-of-hormuz (accessed April 1, 2024).

[14] "Investigators Check Dali's Fuel with Speculation of Possible Contamination," The Maritime Executive, March 28, 2024, https://maritime-executive.com/article/investigators-check-dali-s-fuel-with-speculation-of-possible-contamination (accessed April 1, 2024).

waterfronts, and too few Americans with the requisite technical skills (e.g. naval architects, welders, pipe fitters, etc.). The effect has been to outsource American shipping and shipbuilding, and maintenance to Chinese ports. The most notable in the recent past has been U.S. company Matson retrofitting three of its container ships by China's COSCO.[15] While doing repairs or procuring commercial ships from China may be cheaper, it poses a potential vector for material and cyber-attacks and furthers dependencies on a rival nation.

A few port safety and security thoughts on the allision in Baltimore:

While it has already been mentioned, the allision of the *Dali* in Baltimore harbor provides several key considerations for port safety and security. Reviewing these in brief:

1. Potential fuel contamination and/or improper handling remains a risk for large commercial ships losing power in constrained waterways. The consequence is collision with other vessels or damage to critical maritime infrastructure (e.g. bridge, gas pipelines).
2. Loss of power on today's very large container ships, represents a hazard that most U.S. infrastructure has not been designed to withstand - the 1977 build Francis Scott Key bridge is a case in point and had no barriers (i.e. dolphins) protecting the bridge's supports and contributed to its collapse. As such, critical ports must be ready to clear their restricted waterways of obstructions (e.g. collapsed bridges, sunk ship etc.) rapidly to resume port operations. In a conflict or natural disaster, delays to regaining operations could be fatal. An example of what is needed are the floating cranes that began arriving on scene several days after the Dali incident to remove bridge debris and free the Dali.[16] Additionally, the opening of a temporary channel in Baltimore to resume limited harbor operations also points to the need to having dredging equipment nearby as well.[17]
3. Cyber-attacks have not been adequately investigated in shipping incidents. The December 2020 National Maritime Cybersecurity Plan was intended to address these vulnerabilities in the maritime sector, and would have required forensic cyber-attack investigations.[18] While terrorism was ruled out quickly in the *Dali* allision, due diligence investigating cyber-attacks are time consuming and require exquisite skills to detect and have until recently been resisted. A month before the *Dali* allision, the White House issued an executive order to bolster cybersecurity of U.S. ports that granted additional authorities to the U.S. Coast

[15] "Matson Proceeding with Third LNG Conversion for its Containerships," The Maritime Executive, February 6, 2024, https://maritime-executive.com/article/matson-proceeding-with-third-lng-conversion-for-its-containerships (accessed April 1, 2024).
[16] "Navy barges assist in removing collapsed Baltimore bridge from river," Stars and Stripes," Stars and Stirpes, March 31, 2024, https://www.stripes.com/branches/navy/2024-03-31/navy-barges-baltimore-bridge-collapse-13461242.html (accessed April 1, 2024).
[17] Alejandra Salgado, "Baltimore preps small, temporary channel for essential vessel transit," SupplyChainDive, April 1, 2024, https://www.supplychaindive.com/news/port-baltimore-alternate-shipping-channel-reopen-operations-debris-cleanup/711863/ (accessed April 1, 2024).
[18] Donald J. Trump, "The National Maritime Cybersecurity Plan ," The White House, December 2020, pg. 4-5, https://trumpwhitehouse.archives.gov/wp-content/uploads/2021/01/12.2.2020-National-Maritime-Cybersecurity-Plan.pdf (accessed April 1, 2024).

Guard.[19] The day after this order was issued, the U.S. Coast Guard posted proposed cyber security regulation changes for public comment which will conclude on April 22, 2024.[20]

4. China sourced parts and ship maintenance done in China provides a potential vector for material tampering that could enable future cyber-attack. The case of modems discovered on ZPMC cranes represents only the first of likely more cases. After a prolonged period of review, finally, on the same day the President signed the maritime cyber security executive order, a maritime advisory was issued on LOGINK and ZPMC cranes.[21] Future advisories should be expected, with the *Dali* investigation serving as a potential benchmark.
5. After the *Dali*'s allision, the bridge debris wedged the ship on the harbor bottom and against high pressure gas lines.[22] This raises another port safety and security concern, and how to harden this submerged critical infrastructure to damage from today's larger vessels and potential attack. Finally, the mishap investigation should verify Baltimore Port executed effectively its security plans as mandated by the Maritime Transportation Security Act of 2002, specifically regarding securing the gas pipeline after the allision, and assessments of the Francis Scott Key bridge to resist an allision from modern container ships.
6. In what is an unusual occurrence, the ship's Voyage Data Recorder (VDR) - otherwise known as the ship's black box - stopped recording sensor data at a key moment of the incident.[23] While audio recording continued on backup power, the loss of sensor data should be investigated and remedies offered to prevent future occurrences that may hinder future mishap investigations.

Actions to Date Not Enough - Time for a National Maritime Initiative

Our ports are the gateway to the nation's prosperity and security and are an integral part of a strategically important maritime industrial sector. Safeguarding our ports necessarily means bolstering our maritime resiliency to attack as well as supply chain disruptions, man-made or by an act of God. Doing this will require a national maritime initiative that:

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[19] Joseph R. Biden, "Executive Order on Amending Regulations Relating to the Safeguarding of Vessels, Harbors, Ports, and Waterfront Facilities of the United States," The White House, February 21, 2024, https://www.whitehouse.gov/briefing-room/presidential-actions/2024/02/21/executive-order-on-amending-regulations-relating-to-the-safeguarding-of-vessels-harbors-ports-and-waterfront-facilities-of-the-united-states/ (accessed April 1, 2024).

[20] "Cybersecurity in the Marine Transportation System," U.S. Coast Guard, February 22, 2024, https://www.federalregister.gov/documents/2024/02/22/2024-03075/cybersecurity-in-the-marine-transportation-system (accessed April 1, 2024).

[21] "2024-002-Worldwide-Foreign Adversarial Technological, Physical, and Cyber Influence," Maritime Administration, February 21, 2024, https://www.maritime.dot.gov/msci/2024-002-worldwide-foreign-adversarial-technological-physical-and-cyber-influence (accessed April 1, 2024).

[22] Brandon M. Scott, "March 31st Update from Key Bridge Response Unified Command," City of Baltimore, March 31, 2024, https://mayor.baltimorecity.gov/news/press-releases/2024-03-31-march-31st-update-key-bridge-response-unified-command (accessed April 1, 2024).

[23] Gary Howard, "What Dali's black box recorder tells us about Baltimore bridge allision," Seatrade Maritime, April 1, 2024, https://www.seatrade-maritime.com/casualty/what-dalis-black-box-recorder-tells-us-about-baltimore-bridge-allision (accessed April 1, 2024).

- Provides an adequate American flagged commercial shipping fleet to sustain the nation in a major war; augmented by treaty ally shipping as required.
- Expands shipbuilding and repair capacities and associated workforce to mitigate over-reliance on China or non-friendly nations.
- Hardens maritime infrastructure and shipping to cyber-attack and material damage.

On the first, the Merchant Marine Act of 1920, known as the Jones Act, was intended to meet this objective.[24] Sadly, it has proven inadequate to the task and has not addressed the needs of sustaining a wartime economy needed in a war with China. Case in point, the 2019 Turbo Activation 19-Plus exercise demonstrated that only 64 percent of the Ready Reserve Fleet was able to deploy on time in support of national defense needs—vessels that are intended to be ready to support rapid deployment of military forces. Moreover, the average age of these merchant ships is 45 years, well over the industry end-of-life average of 20 years, and the DOD faces a gap of approximately 76 fuel tankers to meet surge sealift requirements.[25] That said, a wholesale repudiation of the Jones Act without additional actions would be counter-productive and not deliver the shipping needed either. In the near term, fostering stronger cooperation with allies (such as Greece, Japan, and South Korea) can help to satisfy some clearly defined national shipping needs in wartime while working to regain American maritime competitiveness. In short, a Hippocratic oath should be taken to "do no harm" to the domestic maritime industrial sector in pursuing initiatives to strengthen the sector. The March 12, 2024 petition to the U.S. Trade Representative to take action against unfair Chinese trade practices in the maritime, logistics and shipbuilding sectors is an opportunity to not only strengthen U.S. agencies like the Federal Maritime Commission to press our case, but to rally international support.[26] After decades of neglect, the U.S. maritime sector alone cannot take on China's goliath state-controlled shipping and shipbuilding sectors, but a consortium of like-minded maritime nations could. Common interests regarding freedom of navigation, free trade, and a shared threat perception of China would bind the group together. This new grouping could together represent a formidable bloc critical for an American-led revolutionary transformation in shipping- an informal Maritime Group of Nations not dissimilar to the current Group of Seven (G7).[27]

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[24] .Merchant Marine Act of 1920, June 5, 1920, U.S. Code 46, ch. 24, sec. 861, https://uscode.house.gov/view.xhtml;jsessionid=5142A83A2AAB12A25A2F9AB8A3949F92?req=granuleid%3AUSC-2000-title46a-chapter24&saved=%7CZ3JhbnVsZWlkOlVTQy0yMDAwLXRpdGxlNDZhLWNoYXB0ZXIyNC1zZWN0aW9uODYx%7C%7C%7C0%7Cfalse%7C2000&edition=2000 (accessed April 1, 2024).

[25] Bryan Clark, Timothy Walton, and Adam Lemon, "Strengthening the U.S. Defense Maritime Industrial Base: A Plan to Improve Maritime Industry's Contribution to National Security," Center for Strategic and Budgetary Assessments, February 12, 2020, pp. 9–13 and 48, https://csbaonline.org/research/publications/strengthening-the-u.s-defense-maritime-industrial-base-a-plan-to-improve-maritime-industrys-contribution-to-national-security/publication/1 (accessed April 1, 2024).

[26] Petition for relief under section 301 of the Trade Act of 1974, "China's Policies in the Maritime, Logistics, and Shipbuilding Sector," March 12, 2024, https://ustr.gov/sites/default/files/Section 301 Petition - Maritime Logistics and Shipbuilding Sector.pdf (accessed April 1, 2024).

[27] Brent D. Sadler and Peter St. Once, "Rebuilding America's Maritime Strength: A Shipping Proof-of-Concept Demonstration," The Heritage Foundation, August 16, 2023, pg. 6-7, https://www.heritage.org/sites/default/files/2023-08/BG3782_0.pdf.

To deliver on the second, regaining America's maritime competitiveness is required. Fostering a revolution in American shipping can energize a lethargic industrial sector that is critical to the nation's defense and strengthen it so that it can sustain a wartime economy. This new inter-modalism would combine existing and emerging technologies into a new logistics paradigm comprised of small modular nuclear reactor powered container ships, unmanned drones (ship and vertical lift), smart port technologies, blockchain tracking of smart containers, and additive manufacturing.[28] A stronger and globally competitive maritime sector serves as a deterrent to Chinese economic coercion and military adventures. With a more robust maritime sector, American trade could proceed with greater confidence that the U.S. military can sustain combat operations on U.S.-flagged vessels. In addition to serving U.S. security needs, this shipping revolution could mitigate the environmental impacts of shipping, promote domestic production, and expand American exports to global markets, which would spur wider job growth and advance technological innovation in the U.S. The primary task is to create a domestic landscape that can foster a sustainable competitive advantage in American shipbuilding, shipping, and multi-modal logistics. This will require a maritime legislative agenda that incentivizes entry in the maritime workforce, rewards mariners sustaining critical certifications, and establishing maritime development zones.

On the third point, the lessons of the *Dali* bear witness that the status quo is not tenable and new efforts are required. The current Maritime Security Act of 2002 was conceived for a different era where the principal threat was violent extremist and natural disasters. Today the nation confronts a China, which is able to conduct conventional attacks as well as highly advanced asymmetric attacks across the homeland. A new framework is needed that builds on the Maritime Security Act and incorporates and codifies in law the best elements of both the 2020 National Maritime Cybersecurity Plan and the recently enacted executive order (EO 14116). Likewise, two programs that were devised in a post-911 world are perhaps ready for an update and revitalization: the Container Security Initiative (CSI)[29] and the Proliferation Security Initiative (PSI)[30]. As of March 24, 2024, there are 112 countries supporting the PSI's effort to prevent the movement of weapons of mass destruction, while CSI is conducting screening of U.S. inbound cargo in 61 overseas ports to interdict terrorist movement of weapons via maritime containers. Moreover, to better respond locally to maritime disasters and provide maritime support to the Department of Defense, a naval component of the National Guard should be established in states with strategically important ports. Already such forces have proven their worth; New Jersey and New York naval militia provided critical support moving material and first responders into lower Manhattan following the September 11th attacks.[31]

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[28] Brent D. Sadler and Peter St. Onge, "Regaining U.S. Maritime Power Requires a Revolution in Shipping," The Heritage Foundation, May 15, 2023, pg. 12-20, https://www.heritage.org/sites/default/files/2023-05/SR272.pdf.

[29] "CSI: Container Security Initiative," U.S. Customs and Border Protection, March 6, 2024, https://www.cbp.gov/border-security/ports-entry/cargo-security/csi/csi-brief (accessed April 1, 2024).

[30] "About the Proliferation Security Initiative," U.S. Department of State, https://www.state.gov/proliferation-security-initiative/ (accessed April 1, 2024).

[31] Brent D. Sadler, "Rebuilding America's Military: The United States Navy," The Heritage Foundation, February 18, 2021, pg. 39, https://www.heritage.org/sites/default/files/2021-02/SR242.pdf.

Next Steps.

Safeguarding the nation's strategically important maritime industrial sector will be a complex task, and it will only be sustained by regaining America's commercial maritime competitive edge. To do this requires a grand design - a *National Maritime Initiative*. A likely vehicle for this would be an update to the 1989 National Security Directive (NSD-28) with enabling legislation from Congress that:

1. ***Harden the nation's maritime infrastructure***. Concerted efforts are needed to harden U.S. maritime infrastructure to cyber, kinetic, and acts of God - to include allision from today and future large commercial shipping. This must include adequate salvage and dredging capacity to rapidly retore harbor operations at critical ports.
2. ***Strengthen U.S. ability to combat unfair Chinese maritime business practices and incentivize U.S. shipping***. Currently the principal agencies (i.e. U.S. Coast Guard, Maritime Administration, National Oceanic and Atmospheric Administration, Federal Maritime Commission) responsible for the nation's non-defense maritime sector are scattered across several departments. Structurally this has not fostered coherent sustained nor well-resourced maritime initiatives, reorganizing for task as well as increased investment in the nation's maritime sector are past due.
3. ***Create Maritime Prosperity Zones***. Incentivize investment in the maritime industry and waterfront communities, to include attracting treaty allies like Japan and South Korea in common cause.
4. ***Establish a Maritime Innovation Incubator***. The incubator would function to mature future maritime capabilities and new concepts of operations (e.g. small modular nuclear reactors, robotic shipping, drones/dirigibles useful for moving cargo at-sea etc.), and to train the next generation of naval architects and shipyard workers to operate and maintain these new methods and technology.
5. ***Train More Mariners***. Expand existing and establish new state merchant marine academies to educate and certify merchant mariners. And prioritize existing educational and technical training grants to specialties critical to shipbuilding, e.g. naval architects, welders, and pipefitters.
6. ***Incentivize Mariners Who Maintain Certification***. Attract American merchant mariners with favorable tax incentives and personal subsidies, who remain in the maritime sector while sustaining USCG mariner certifications.
7. ***Create a Naval Guard***. Expand select state National Guards to include a naval component.

The United States has neglected a core element of its security and prosperity—its historic maritime strength. As a result, American shipping and shipbuilding has atrophied, yet domestic industry and capacity for innovation remain strong. This advantage needs to be pressed by restoring American maritime competitiveness in pursuit of a new multi-modalism. Doing this at the same time hardening our maritime infrastructure is an imperative to deter Chinese economic coercion and military adventurism.