Written Testimony of

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Before the

House Appropriations Defense Subcommittee
College of the Canyons
Santa Clarita, CA

"Defense industrial base and workforce development for skilled trades: Challenges and opportunities"

4 September 2026

Not for publication until release by

the House Appropriations Committee

Chairman Calvert, Ranking Member McCollum, and members of the Committee, thank you for the opportunity to testify about the challenges and opportunities to strengthen America's defense industrial base and workforce.

This is the fourth time I have offered testimony to the U.S. House of Representatives on defense industrial base issues. Previously, I served as the Deputy Assistant Secretary of Defense for Industrial Policy and the Chief of Staff to the U.S. Defense Secretary. While in this capacity, and in direct response to the threats to the U.S. industrial base from the Chinese Communist Party's strategy of investment-driven technology transfer, I worked with the Congress to modernize the Committee on Foreign Investment in the United States (CFIUS) through the Foreign Investment Risk Review Modernization Act of 2018 (FIRRMA).[1,2,3]

Per the direction of Presidential Executive Order 13806, I also led a multi-agency risk assessment of the manufacturing and defense industrial base. This assessment, which was delivered in October 2018, outlined a series of recommendations to ensure a robust, resilient, secure, and ready manufacturing defense industrial base and workforce.[4]

HII: America's Seapower Company

Now I serve on the executive leadership team of HII, America's Seapower Company. The mission of HII is to deliver the world's most powerful ships and all-domain solutions in service of the nation, creating the advantage for our customers to protect peace and freedom around the world.

Our ability to execute this mission is only made possible by a dedicated workforce of 45,000 employees. My HII colleagues represent a remarkable mix of skills. Everything from high-school apprentices in maritime trades like pipefitting and welding, to master shipbuilders with over 40 years of shipbuilding experience, to PhDs in cutting edge scientific fields driving state-of-the-art advanced manufacturing, Artificial Intelligence, and autonomous systems.

Each of our three divisions, Newport News Shipbuilding, Ingalls Shipbuilding, and Mission Technologies, fulfills a critical role in the generation of seapower and the integration of all-domain capabilities. While our three divisions have individual, unique needs for their respective workforces, the importance of workforce development and the continued recovery of the maritime industrial base remain paramount in the execution of our mission.

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[1] Eric Chewning, "Evaluating CFIUS, Administration Perspectives," U.S. House of Representatives Subcommittee on Monetary Policy and Trade, 115th Congress (2018), https://financialservices.house.gov/uploadedfiles/hhrg-115-ba19-wstate-echewning-20180315.pdf.

[2] Eric Chewning, "Military Technology Transfer: Threats, Impacts, and Solutions for the Department of Defense," U.S. House of Representatives Committee on Armed Services, 115th Congress (2018), https://www.congress.gov/event/115th-congress/house-event/LC64148/text.

[3] Eric Chewning, "Addressing the Challenges to America's Military Shipbuilding Industrial Base in an Era of Strategic Competition with the Chinese Communist Party," U.S. House of Representatives Select Committee on the Chinese Communist Party, 118th Congress (2024), https://www.congress.gov/118/meeting/house/117749/documents/HHRG-118-ZS00-20241205-SD003.pdf.

[4] U.S. Department of Defense, "Deputy Secretary of Defense Delivers Defense Industrial Base Report to President Trump," October 2018, https://www.defense.gov/News/Releases/Release/Article/1655781/deputy-secretary-of-defense-delivers-defense-industrial-base-report-to-presiden/.

Our Newport News Shipbuilding (NNS) division designs, builds, and refuels U.S. Navy nuclear-powered aircraft carriers and also designs and builds nuclear-powered submarines. NNS is the largest industrial employer in Virginia.

Our Ingalls Shipbuilding division is simultaneously building four classes of complex warships for the U.S. Navy. These include: the LPD 17 *San Antonio* and LHA *America* classes of amphibious ships, guided missile destroyers, and the future frigate small surface combatant. Ingalls is also executing the Conventional Prompt Strike (CPS) modernization to add hypersonic missile launch capability to the DDG 1000 Zumwalt class. Ingalls Shipbuilding is the largest manufacturing employer in Mississippi and a major contributor to the economy of Alabama as well.

Our Mission Technologies division is the largest producer of unmanned underwater vehicles (UUVs) in the world. Given the rapidly evolving role of uncrewed systems on the multi-domain battlefield, we capitalize upon and accelerate the adoption of disruptive commercial solutions to deliver warfighting advantage. A very relevant example of this transition of commercial technologies for the nation's benefit is the Lionfish UUV program, where HII, in partnership with the Defense Innovation Unit (DIU), was the first to successfully transition an Other Transaction Authority (OTA) prototype into a FAR-based production contract. We continue to innovate in maritime unmanned systems, recently, our ROMULUS unmanned surface vessel (USV) was advanced to the evaluation phase of the U.S. Navy's Medium Unmanned Surface Vessel (MUSV) program.

Historical erosion of America's shipbuilding industrial base & skilled workforce

While America's shipbuilding sector is undergoing a renaissance, it is important to understand the historical headwinds we are overcoming. The challenges facing today's shipbuilding industrial base are the result of a series of decisions made over decades. During our last period of great power competition, as represented by the Reagan administration's Navy-build up, U.S. industry was striving towards a 600-ship naval fleet.

As the geopolitical context changed in the post-Cold War period of the 1990s and 2000s, U.S. policy makers reduced spending on shipbuilding and pursued trade policies that encouraged the de-industrialization of the American economy and promoted manufacturing growth in lower cost countries like the People's Republic of China. As a direct result, the domestic manufacturing supply base and workforce so critical to military shipbuilding declined significantly as the U.S. Navy's fleet shrank to 271 ships in 2015.

The industrial base impact was profound and severe. Six of the twelve major shipyards closed, triggering a cascading reduction on investments in supply chain, workforce, and technology modernization.[5] The supply base for submarines shrank by over 80%, and 40% of the private sector shipbuilding jobs that existed in 1980 ceased to exist. Capital expenditures to upgrade

[5] Aaron Klein, "Decline in U.S. Shipbuilding Industry: A Cautionary Tale of Foreign Subsidies Destroying U.S. Jobs," *The Eno Center for Transportation*, September 2015, https://enotrans.org/article/decline-u-s-shipbuilding-industry-cautionary-tale-foreign-subsidies-destroying-u-s-jobs/.

manufacturing technologies at shipyards were set aside so that the shipyards could survive. A once vibrant national asset was brought to its knees.

Following this hollowing out in the 1990s and early 2000s, the geopolitical environment reverted and subsequently the industrial base faced a rapid rise in demand with procurement of the *Gerald R. Ford*-class aircraft carrier in 2008, the restart of the *Arleigh Burke*-class DDG-51 production line in 2010, the doubling of *Virginia*-class SSN procurements in 2011, and *Columbia*-class SSBN procurement starting in 2021. This upswing in demand generated efforts to revitalize the shipbuilding industrial base, and it showed measurable progress, with *Virginia*-class submarine throughput reaching 1.8 submarines per year in 2019. Unfortunately, these initial gains were stunted by the global supply chain and workforce disruptions caused by the COVID-19 pandemic, immediately followed by a surge in inflation.

To put this decline into context, between 1981 and 1998, NNS delivered five *Nimitz*-class aircraft carriers in a 17-year period, or one every 3.4 years. In contrast, between 1998 and 2027, when the future USS John F. Kennedy (CVN 79) is scheduled to deliver, NNS will have constructed four CVNs in a 29-year period, or approximately one every 7 years. The submarine industrial base has similarly atrophied. Between 1981 and 1995, Newport News Shipbuilding and Electric Boat delivered 59 *Los Angeles*-class submarines, an average of 4.2 per year, proving the ability of the nuclear shipbuilding industrial base to meet demand.

While the pandemic disrupted every sector of our economy, its impact on the shipbuilding industry was particularly traumatic. The pandemic accelerated retirements of many of our most experienced shipbuilders, thinning the yard of this critical knowledge base and in many cases breaking a chain in families that had made shipbuilding their tradition for 4 or 5 generations. Attrition rates doubled and indelibly altered the demographic complexion of the shipbuilding workforce. Supplier lead times also increased up to 5x what they were in 2019. Shipbuilding material costs have increased on average 30% since January 2020, with similar inflationary pressures affecting the supply chain and workforce.

HII has been building and modernizing U.S. warships for over 140 years. We know that American warship construction is a uniquely long-cycle, capital-intensive activity in support of one dominant customer – the U.S. Navy. Unlike other industries where market forces will spread inflationary costs between suppliers and customers, the economics of shipbuilding are determined by just a small handful of Navy contracts. For HII, the vast majority of our shipbuilding contracts were priced and negotiated pre-COVID. These long-term agreements locked in assumptions around material and labor costs that are significantly out of cycle with the current post-COVID reality.

Today's shipbuilding renaissance

Today, with a sense of urgency, we are using that hard-earned experience to accelerate throughput in our shipyards and revitalize American shipbuilding. In 2025, throughput increased by 14% year-over-year, and with approximately 40 ships at Ingalls and Newport News in active construction or modernization, our focus in 2026 is clear: we must build on this momentum and

continue delivering ships at a greater pace to the U.S. Navy. We are targeting a 15% year-over-year throughput increase in 2026.

Our throughput acceleration strategy consists of three parts.

Hire, teach, and retain a world class workforce

First, we are hiring, teaching, and retaining a 21st century workforce through wage increases, a network of vocational schools, in-yard education, world-renowned HII apprenticeship programs, and quality of life investments for our shipbuilders.

HII employs over 38,000 shipbuilders across Virginia, Mississippi, Alabama, North Carolina, South Carolina, Louisiana, and Florida. Shipbuilding requires a broad range of skillsets, including designing, planning, detailed engineering, fitting, welding, machining, and electrical skills among many others. Developing proficiency in these areas takes significant amounts of time. HII functions as a workforce development engine that recruits and develops our people through a network of internal and external programs, including accredited apprentice schools at both shipyards. For example, the Apprentice School at NNS was founded in 1919 and is one of the country's preeminent apprenticeship programs. The school offers core trade apprenticeships, as well as optional programs in other supporting disciplines such as supply chain management. In 2026, NNS will graduate 168 apprentices and will continue to enroll a total of over 800 students, while also sustaining robust pre-apprenticeship pipeline programs. Notably, completion of the NNS Apprentice School provides shipbuilders with a direct pathway into high demand, well-compensated, skilled professions. Graduates enter the shipyard with an annual starting salary of approximately $83,000 - $95,000 and do so without the financial burden of college related debt, supporting durable economic mobility and strengthening the long-term stability of regional manufacturing and the national industrial base. Ingalls Shipbuilding also operates an Apprentice School with similar enrollment, curricula, and career opportunities.

HII also hires from over 80 trades schools and has partnerships with organizations, such as the Hampton Roads Workforce Council and Marine Trades Training Program, to improve training and increase interest in maritime industries. Federal and state efforts to increase funding for, and expand access to, trade skills programs are critical to growing the shipbuilding workforce.

But growing the workforce is not enough. We also need to retain the talent. Our shipbuilding workforce has endured in spite of double-digit attrition driven largely by wage compression with service and other non-manufacturing industries. While manufacturing wages have increased by nearly 30% in the post-COVID economy, retail and service industry jobs offer comparable starting pay to many shipbuilding trades.[6] Because the vast majority of HII's contracts were priced and negotiated pre-COVID, they did not reflect economic realities and lacked the mechanisms to adjust for post-pandemic supply and labor shocks.

[6] U.S. Bureau of Labor Statistics, "Average Hourly and Weekly Earnings of Production and Nonsupervisory Employees on Private Nonfarm Payrolls by Industry Sector," August 2026, https://www.bls.gov/news.release/empsit.t24.htm.

However, thanks to support from the Congress and U.S. Navy, we have been able to make adjustments to be more competitive.

Earlier this year, Ingalls Shipbuilding entered into a new collective bargaining agreement with union leadership at the shipyard. The contract provides an immediate base wage increase of at least 18% for union-represented shipbuilders and projected total wage growth of 35% to 47% over the life of the agreement, marking the largest single wage increase in Ingalls Shipbuilding history. At NNS, collective bargaining agreements were extended with the unions in 2025, providing steelworkers, for example, an average base wage increase of 20% with projected total wage growth at 31% over the life of the extension. Collectively, these investments reflect a commitment to maintaining a highly skilled workforce by providing competitive wages and a standard of living commensurate with the critical demands placed on the nation's shipbuilding industrial base.

In 2025, HII hired 6,600 shipbuilders and will hire at least that many in 2026.

Modernize shipbuilding infrastructure

Second, we are building new shipbuilding infrastructure with approximately $600M in capital investments planned for 2026 alone. Over the last ten years, both Newport News Shipbuilding and Ingalls Shipbuilding have invested billions of dollars to modernize both shipyards and add capacity. HII prioritizes investments in capital expenditures and internal research and development and we routinely invest more into our business than we pay out in share buybacks and dividends.

Central to our modernization campaign is our investment in new Industry 4.0 technologies like additive manufacturing, automation, digital engineering, enterprise and physical AI. This starts with creating a 21st century digital backbone for our shipyards – secure cloud architecture, integrated production data, and a scalable industrial internet of things (IIOT) environment that connects our critical assets in real time. At Newport News, this is already reducing equipment downtime, increasing workforce efficiency, and driving measurable throughput gains in key manufacturing areas.

Building on that foundation, our continued partnerships with C3AI and most recently Palantir are demonstrating the value of enterprise AI to the deck plate through promising improvements in how we run our operations.

Our High Yield Production Robotic (HYPR) initiative leverages a network of emerging industrial technology companies like Path Robotics and Grey Matter Robotics to rapidly accelerate our use of physical AI in shipbuilding. Earlier this month, we announced an historic contract worth up to $900M with our HYPR partners, where we guarantee production agreements should their technologies meet Navy certifications and demonstrate improvements on cost and schedule.

Expand the maritime industrial base

Third, we are expanding the maritime industrial base by implementing a distributed shipbuilding strategy and growing our supply chain.

Our distributed shipbuilding strategy includes strategic investments such as our recently acquired manufacturing campus near Charleston, SC. Upon transaction close in 2025, the soon-to-be-lost capacity was immediately repurposed to support submarine and CVN production as part of our Newport News Charleston operations. Ingalls Shipbuilding has also implemented a distributed shipbuilding approach that involves unit fabrication for both DDG 51 and LPD programs in multiple shipyards from Texas to Louisiana to Florida.

Since the end of the Reagan-era build up, there has been an 80% reduction in the submarine supplier base.[7] As a result, the shipyards are increasingly dependent on one supplier for critical components. Approximately 70% of HII's material spending on sequence critical items is to sole-source suppliers. In a post-COVID environment, this has manifested in increasingly longer and more uncertain lead times for equipment.

To rebuild the supply chain, Congress appropriated $3.3B in submarine industrial base (SIB) funding with the FY24 Emergency Supplemental (Public Law 118-50), and has continued to fund this account. Accelerating the deployment of SIB funding is critical to strengthening the supply base in the near and long term. In addition to accelerating the deployment of this funding into the supply base, we are also employing new technologies, like additive manufacturing, to address bottlenecks and insufficient capacity in the supply chain. Congressionally directed industrial base funds have been critical to the development, reinforcement, and reinvigoration of key components of the maritime industrial base. These investments enable the continued recovery of the entire shipbuilding ecosystem.

Beyond this direct support, HII is actively growing the industrial base by moving non-core work from our yards to additional industry partners. We plan to outsource over two million hours of work in 2026, a 178% increase from 2024. We have partnered with 23 smaller shipyards and manufacturing centers to build components and large structures for integration within our shipyards. Not only does this approach increase our throughput, but it also creates jobs in communities across the country. This strong demand signal gives small- and medium- sized businesses improved confidence to invest in their own capacity and workforce, contributing to shipbuilding industrial base revitalization.

In Conclusion

To be clear, strengthening our defense industrial base and workforce is a true government and industry team effort that will require sustained focus. Reversing the decades-long industrial base decline will not be easy and will take dedication and time. Success requires continued partnership, support, and steadfast alignment across the Congress, the U.S. Navy, state and local governments, and industry.

Lastly, I want to thank the U.S. Navy, Congress, and this Committee, for its continued support and we look forward to continuing to work together to strengthen America's maritime industrial base.

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[7] Emma Salisbury, "The Sinking Submarine Industrial Base," *War on the Rocks*, October 2023, https://warontherocks.com/2023/10/the-sinking-submarine-industrial-base/.