



Maritime Administration Mariner Workforce Strategic Plan FY 2023 to FY 2027

*Strengthening the Recruitment, Training, and Retention of Credentialed
American Mariners*

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The Mariner Workforce Strategic Plan

Executive Summary

At the direction of Congress, the Maritime Administration (MARAD) created the “Mariner Workforce Strategic Plan – FY 2023 to FY 2027” (Plan) to present options to help ensure our Nation has sufficient credentialed mariners needed to crew both the U.S.-flag fleet of commercial vessels and strategic sealift fleet.¹ The Plan lays out a comprehensive, five-year initiative that focuses on improving outcomes in the areas of *recruitment, training, and retention*. Safety is the cornerstone embedded in all transportation modes, and MARAD, without exception, exemplifies this by including safety goals, objectives, and strategies within this strategic plan. This, in turn, will help increase safety among the mariner workforce through strategies that improve training, shipboard working environment and conditions, and cadet safety at sea, and leverage existing safety programs and efforts. The strategies outlined in the Plan address new and emerging issues and build on MARAD’s existing workforce initiatives to help foster industry growth and expansion of the pool of U.S. mariners.

MARAD, which has undertaken several initiatives to strengthen the mariner workforce, established the Centers of Excellence for Domestic Maritime Workforce Training and Education (CoE) Program to increase Federal support for institutions involved in mariner training. In addition, re-capitalization of U.S.-Government-owned training ships used by the State Maritime Academies is underway through the construction of modern training ships—the National Security Multi-Mission Vessels—that will replace the legacy fleet that is at or beyond their service life. MARAD also worked closely with stakeholders to address the impact of the COVID-19 pandemic on both mariner training and actively serving merchant mariners and build on successes that have been achieved since the pandemic ended.

Further, MARAD is committed to ensuring a safe working environment for mariner trainees aboard U.S.-flag merchant vessels by establishing the Office of Cadet Training At-Sea Safety. MARAD will continue to administer efforts to ensure cadet safety aboard all U.S. vessels that host cadets from USMMA. MARAD will, through stakeholder outreach and dialogue, encourage implementation of training and response policies and practices across all sectors and employers within the maritime industry.

This Mariner Workforce Strategic Plan builds on these and other initiatives by providing a set of focused strategies designed to help grow the mariner workforce. MARAD sought to develop a plan that is comprehensive in scope, leverages existing programs, and identifies possible new initiatives targeting gaps in mariner recruitment, training, and retention. The Plan ultimately incorporates six goals and supporting objectives and strategies. Some strategies are identified that could be implemented under existing authorities as demonstration projects, including strategies such as promoting the use of existing Federal information resources by maritime job seekers.

¹ William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283, Section 3508(a)), <https://www.congress.gov/116/plaws/publ283/PLAW-116publ283.pdf>.

Other supporting strategies could be further implemented under existing authorities. These strategies include: promoting the Centers of Excellence for Domestic Maritime Workforce Training and Education Program; increasing support for K–12 maritime programs; ensuring that the mariner workforce has the skills necessary to operate vessels with evolving system technology; and, raising national awareness of the benefits of a seagoing career and the overall role the U.S. Merchant Marine plays in national and economic security.

The strategies offered in this Plan would help strengthen mariner education and workforce development programs, which in turn would support the mariner labor life cycle (recruit, train, and retain).

During development of this Plan, MARAD identified several information gaps concerning the U.S. mariner workforce, and further research could inform the development of more targeted Federal policy development and agency planning efforts. For example, due to the limitations of existing data and information technology systems, the number of actively serving mariners and their specific credentials cannot be identified. Additionally, it would be helpful to better understand the interdependencies and interrelationships of maritime careers with other transportation occupations, modes, and sectors.

The strategic goals and key objectives are summarized on the following page. Table A, beginning on page 11, provides a more detailed description of each strategy and the current level of authority and appropriation.



	STRATEGIC PLAN GOALS	OBJECTIVES
Goal 1	<u>Strengthen mariner workforce development programs.</u> Mariners are a critical part of the human capital component of our Nation’s transportation system.	<ul style="list-style-type: none"> Expand the availability of mariner jobs and optimize job opportunities that support infrastructure investment. Reduce the costs of mariner education and training for individuals entering the mariner profession.
Goal 2	<u>Support mariner education and training institutions.</u> The United States has a network of over 300 dedicated maritime education institutions, including maritime academies, public and private colleges and high schools, and maritime training centers.	<ul style="list-style-type: none"> Support the mariner labor lifecycle (recruit, train, and retain). Support initiatives that increase awareness of maritime training institutions and enhance enrollment. Continue support of existing Federal and State Maritime Academies.
Goal 3	<u>Improve the shipboard workplace environment.</u> The workplace environment aboard U.S.-flag ships has a direct impact on attracting and retaining a workforce that remains committed to the industry and working afloat.	<ul style="list-style-type: none"> Engage with industry and federal partners to encourage approaches that improve working conditions afloat and work-life balance. Support efforts that foster working conditions aboard U.S.-flag vessels that attract and keep mariners who work at sea. Support efforts for a safe workplace aboard U.S.-flag vessels.
Goal 4	<u>Ensure the availability of sufficient skilled mariners for national security.</u> MARAD supports the Nation’s strategic sealift needs and will work to ensure national security preparedness by maintaining a cadre of well-trained mariners.	<ul style="list-style-type: none"> Promote programs that support the long-term availability of mariner jobs to ensure national security preparedness. Ensure the availability of qualified and trained mariners to support the strategic sealift needs of the Nation.
Goal 5	<u>Support maritime innovation.</u> Innovation spurs job creation, which can expand the mariner workforce.	<ul style="list-style-type: none"> Support innovative and emerging technologies that provide job opportunities and improve work-life balance for mariners.
Goal 6	<u>Ensure superior policy execution and stewardship of resources.</u> MARAD is committed to organizational excellence and efficiency when carrying out its statutory responsibilities.	<ul style="list-style-type: none"> Engage with domestic and international partners to foster collaboration on global maritime issues and standards. Improve knowledge and awareness of the economic and security role of American mariners and the U.S. Merchant Marine. Plan for sufficient programmatic resources within MARAD.



The Mariner Workforce Strategic Plan

Preface

The U.S. Department of Transportation (USDOT or the Department) is responsible for supporting mariner education and training under the authority of 46 U.S. Code Section 51103 (46 USC§ 51103). The Maritime Administration (MARAD) is delegated authority to develop and administer the Department’s mariner education and training programs.

The “Mariner Workforce Strategic Plan – FY 2023 to FY 2027” (“the Plan”) lays out a bold, five-year initiative to strengthen MARAD’s mariner education and training programs and improve retention within the industry. Supporting mariner retention and attracting the next generation of employees to this industry is paramount to maintaining and strengthening national security and economic prosperity. With a focus on *recruitment, training, and retention*, the Plan sets forth strategies that address challenges that have persisted for some time, as well as new and emerging issues. It builds upon MARAD’s existing workforce initiatives, which are intended to foster industry growth and expand the pool of U.S. mariners and the U.S.-flag fleet.

State of the U.S. Merchant Marine

U.S.-flag vessels carry more than 90 percent of military cargo when the United States is involved in an extended conflict overseas.² It is vital to national security that an adequate number of U.S. merchant mariners are appropriately trained and credentialed to sustain a surge in demand for delivering military cargo.

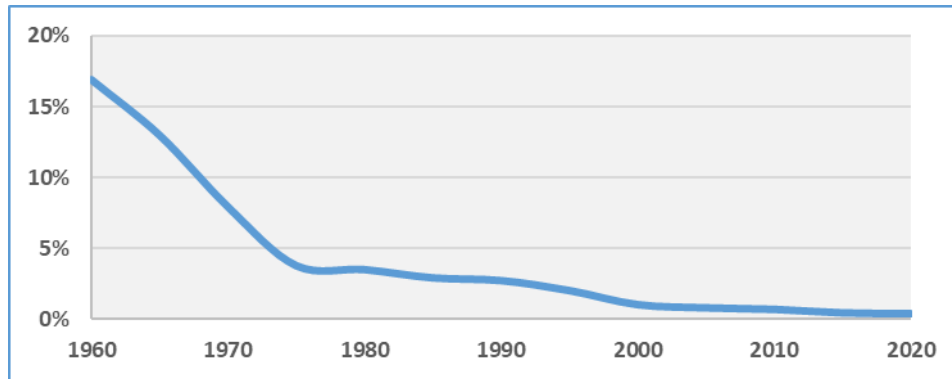
A sufficient number of U.S. commercial vessels must be available to keep mariners proficient during times of peace so that they are ready to meet a surge during times of conflict. However, while more than 90 percent by volume or weight of our cargoes move by sea, commercial vessels sailing under the U.S. flag carry less than two percent of our import and export waterborne cargoes (see Figure 1). The decline in the size of the U.S.-flag ocean-going fleet has come with a corresponding decrease in mariner employment and advancement



² Cargo Preferences for U.S.-Flag Shipping, Congressional Research Service Report R44254, October 29, 2015, <https://crsreports.congress.gov/product/pdf/R/R44254>.

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opportunities and, concomitantly, a decline in the pool of U.S. merchant mariners needed to safely operate these ships, particularly in the event of sustained operations.³ Consequently, the availability of a sufficient pool of qualified mariners represents a critical National Security issue that demands resolution through a whole-of-government approach.



(Source: Maritime Administration)

Figure 1: U.S. Percentage of the World Fleet (1960–2020)

A Maritime Workforce Working Group analysis (2017) determined that concurrent operations of the commercial U.S.-flag fleet and sustained military sealift operations would require 13,607 U.S. mariners with unlimited credentials. However, the most recent estimate identifies a pool of only 11,768 active, qualified mariners, a figure that represents a deficit of 1,839.⁴ This optimistic scenario assumed that all qualified mariners would be both *available* and *willing* to sail. This deficit would severely hinder the United States’ military global response to conflict.

The COVID-19 pandemic amplified the tenuous state of the Nation’s transportation workforce. Travel restrictions forced mariners to remain aboard ship for more extended periods, exacerbating already challenging workplace conditions. With little to no excess capacity, ship operators faced further challenges in maintaining a viable pool of mariners.



A limited number of permanent mariner jobs in the industry has also resulted in significant workforce attrition, principally due to a lack of sufficient opportunities for junior officers to advance to

³ For the purposes of this plan, a “sealift-qualified mariner” is defined as an individual who is capable of serving in the Ready Reserve Force fleet who holds: 1) a current and valid unlimited tonnage or unlimited horsepower oceans license without limitations and meets the required international standards; 2) a current and valid Transportation Worker Identification Credential (TWIC); and 3) has maintained their proficiency by sailing aboard large, oceangoing ships during the last 18 months.

⁴ For comparison, the average monthly employment of seafaring mariners in 1980 was 25,915; see *The Annual Report of the Maritime Administration for Fiscal Year 1980*, U.S. Department of Commerce, Maritime Administration, <https://www.maritime.dot.gov/sites/marad.dot.gov/files/2022-07/maradannualreport1980.pdf>.

management level positions. Consequently, many individuals have felt compelled to seek jobs outside the active seagoing mariner workforce. The loss of junior officers in the seagoing workforce has created current and future gaps in the number of management-level officers (e.g., chief mates, masters, first assistant engineers, and chief engineers) who are needed to safely operate the vessels of both the commercial and surge sealift fleets. Similar challenges exist with the ratings, or unlicensed, mariners.

To strengthen the the mariner workforce, this Plan relies on the United States’ extensive, world-class system of more than 300 maritime academies, colleges and universities, Centers of Excellence for Domestic Maritime Workforce Training and Education (CoEs), maritime training centers, maritime labor union institutions, and non-profit institutions. These entities provide a wide variety of mariner education and training programs—from four-year, immersive, degree and credential-granting programs to credential-specific classes needed for advancement. Together, these institutions offer multiple paths to achieving and maintaining a U.S. Coast Guard (USCG) Merchant Mariner Credential (MMC). Additionally, as it relates to the State Maritime Academies, Congress’s recent investment of \$1.6 billion in the re-capitalization of the MARAD training ship fleet is further evidence of the Federal Government’s commitment to maintaining a strong and vibrant U.S. Merchant Marine.

Current Initiatives

To strengthen the mariner workforce, MARAD has already undertaken several initiatives, which are discussed in this section.

U.S. MERCHANT MARINE ACADEMY

MARAD operates the U.S. Merchant Marine Academy (USMMA or the Academy), located at Kings Point, New York. The Academy graduates over 200 students annually who have earned Bachelor of Science degrees, USCG MMCs with officer endorsements, and commissions in the U.S. Armed Forces, either in a reserve or active component. The USMMA is the primary source of credentialed mariners with service obligations.

There is an urgent need to address the many long-standing and systemic challenges at the USMMA. The National Defense Authorization Act for Fiscal Year 2020 directed a study to review the organization and operations of the USMMA. That was conducted by the National Academy of Public Administration (NAPA) and led to a report in November 2021, entitled “Organizational Assessment of the U.S. Merchant Marine Academy: A Path Forward.” This report offered 67 recommendations to “address longstanding issues that put the safety and health of the midshipmen and the entire USMMA community in peril.”



MARAD has been working to rehabilitate and replace existing infrastructure and to significantly strengthen the agency's ability to plan and manage capital investments and major maintenance efforts. Consistent with the report recommendations, MARAD restructured and reorganized the infrastructure and maintenance management organization at the Academy. MARAD and USDOT also implemented new oversight tools to ensure that investments of taxpayer funds are properly managed, and yield completed projects that address the Academy's most urgent needs.

Many of USMMA's existing buildings are well beyond their design lifespan— some date back to the institution's founding when they were built as temporary structures during World War II. Other USMMA facilities have been poorly maintained over many decades. Numerous reports have warned about the dire condition of the USMMA's campus and the impact that its continued deterioration could have on the Academy's ability to continue training future U.S. Merchant Marine officers. To guide ongoing efforts to address these needs, in late 2022, MARAD/USMMA released a Capital Improvement Plan that prioritizes planned capital investments to address the immediate health and safety needs of the Academy's midshipmen and to support re-accreditation of the Academy. Dedicated staff are in place to ensure quick and efficient execution of the plan.

MARAD has also been working to support the safety and welfare of USMMA midshipmen pursuing their sea-year training on board U.S. vessels. In November 2021, MARAD established the Office of Cadet Training At-Sea Safety at its Headquarters. This Office ensures that U.S.-flag vessel operators that employ USMMA midshipmen as Officers in Training at sea comply with policies and procedures designed to ensure the highest level of safety for the midshipmen.

SUPPORT TO STATE MARITIME ACADEMIES

MARAD provides funding that supports the Nation’s six State Maritime Academies (SMAs). This support includes funds for general use in facility maintenance and program support; fuel for the Government-owned training ships; offsetting the cost of training ship sharing; and the Student Incentive Payment (SIP) Program. MARAD also allocates funds for training ship maintenance and repair. In FY 2023, MARAD was appropriated a total of \$45.7 million for these needs.⁵



Since FY 2018, Congress has appropriated a total of \$1.61 billion towards the re-capitalization of the MARAD training ship fleet. With this funding, MARAD is building five National Security Multi-Mission Vessels (NSMVs), which will provide state-of-the-art training platforms, ensuring that the U.S. continues to set the world standard in maritime training. The ships—which the Secretary of Transportation designated as the *State* class—are designed with dedicated training spaces, classrooms, a separate training bridge, lab spaces, and an auditorium. Each NSMV has space to embark up to 600 cadets, maximizing the capability of the ship and its mission to provide students with an excellent education.

CENTERS OF EXCELLENCE (CoE) FOR DOMESTIC MARITIME WORKFORCE TRAINING AND EDUCATION

To strengthen MARAD’s role as a Federal facilitator and advocate for the nation’s maritime education and training community, the NDAA FY 2018 authorized (with no corresponding appropriation) the CoE Program.⁶ The CoE Program focuses on institutions that support the needs of the domestic maritime community by targeting institutions other than Federal and State maritime academies. With existing appropriations MARAD solicited applications in late 2020 and designated 27 institutions or consortia as CoEs in May 2021.⁷ The most recent roster of 32 CoEs represents 50 individual institutions operating in 17 States and U.S. territories.

Development of the Mariner Workforce Strategic Plan

MARAD prepared this five-year roadmap (FY 2023 to FY 2027) to address U.S. mariner recruitment, training, and retention issues. While drafting this Plan, MARAD conducted targeted stakeholder outreach to gather input directly from Federal agency partners and stakeholders in the maritime industry, including maritime labor. The agency built upon that input in order to identify and incorporate, where possible, the most urgent needs of each industry segment as integral elements of this Plan.

MARAD historically focused education and training programs toward mariners with the unlimited, ocean-going credentials needed to support strategic sealift and international commerce. However, the U.S.-flag merchant marine employs tens of thousands of mariners in *domestic* commerce. These

⁵ Pub. L. 117–263, James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Section 3501.

⁶ Pub. L. 115–91, National Defense Authorization Act for Fiscal Year 2018, Section 54102.

⁷ “Maritime Administration Announces First Centers of Excellence Designations for Domestic Maritime Workforce Training and Education,” Maritime Administration, web, May 19, 2021, <https://www.maritime.dot.gov/newsroom/maritime-administration-announces-first-centers-excellence-designations-domestic-maritime>.

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individuals—who serve aboard Jones Act-qualified inland towboats, coastal ferries, or supply vessels in the offshore services industry—are typically required to hold only limited deck and engine credentials. These mariners are vital to national prosperity and possess valuable experience that could support strategic sealift upon an upgrade of their mariner credentials. Yet, they are also subject to the same challenges facing their ocean-going colleagues: ongoing training requirements, demanding workplace conditions, and long-term job security.

For this Plan, MARAD sought to consider the needs of *all* mariners across nearly every segment of the maritime industry.⁸ For example, MARAD specifically solicited input from the inland towing community and the offshore services industry to gain insight from those unique but substantial sectors. Feedback from several maritime labor unions helped further identify the most pressing concerns of their members, such as expanding seagoing opportunities for entry-level ratings.

Previous MARAD-sponsored studies and resources that explored issues and trends significantly affecting the workforce also served to inform the Plan. These include the following:

- Opportunities and Challenges to Increasing the Number of United States Coast Guard Credentialed Mariners (Report to Congress; May 2020);
- Maritime Workforce Working Group Report (2017);
- Strengthening Skills Training and Career Pathways Across the Transportation Industry (co-authored by the Department of Defense [DoD], USDOT, and Department of Education [ED]; August 2015); and
- Merchant Mariner Training to Meet Sealift Requirements (August 2004).

These reports identify factors that influence the U.S.-flag merchant marine fleet, including recruitment into the workforce, training requirements, retention of fully qualified mariners within the industry, and the ability for holders of limited or entry-level credentials to progress to more advanced levels. Several of these studies also assessed whether there were enough sealift-qualified mariners to crew ships of the Nation's Ready Reserve Force fleet for purposes of national security.

Finally, MARAD conducted an analysis that identified the key strengths, weaknesses, opportunities, and threats (SWOT) facing the maritime workforce. This analysis contains a detailed discussion of each SWOT element. The SWOT analysis served as a critical driver in the identification of the strategies laid out in this Plan. MARAD built upon the strengths and opportunities identified and created strategies to overcome or mitigate weaknesses and threats.



⁸ For this Plan, MARAD focused on elements of the U.S.-flag shipping industry engaged in international or domestic transportation of people and goods. It has not evaluated the specialized requirements of the U.S. fishing industry.

Mariner Workforce Strategic Plan Goals, Objectives, and Strategies

The Mariner Workforce Strategic Plan was structured to address, at a minimum, the four elements described in the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021: (1) merchant mariner recruitment, (2) merchant mariner training, (3) merchant mariner retention, and (4) demonstration and research priorities concerning merchant mariner recruitment, training, and retention.

Recognizing that questions regarding the size of the merchant marine—particularly the size of the U.S.-flag foreign-trading fleet—are whole-of-government questions that depend on requirements set in statute and by the DoD, MARAD sought to create a plan that is comprehensive in scope, builds upon existing programs, and identifies new initiatives targeting gaps in mariner recruitment, training, and retention. Each strategy meets one or more of the following criteria:

- Builds on existing MARAD programs such as CoE, SIP, Military to Mariner, Federal and State Maritime Academy support; or
- Falls within existing MARAD statutory authorities; or
- Supports one or more of the Mariner Workforce Strategic Plan goals; or
- Able to be implemented on a demonstration basis.

The Plan includes objectives and supporting strategies that MARAD may pursue to achieve the Plan's six goals. Some of these strategies could be implemented on a demonstration basis.

Each strategy is unique in that it seeks to address a specific approach that MARAD will pursue. There are instances, however, where a single strategy can support more than one goal or objective, and some where strategies involve different implementation approaches. Similarly, there are instances where similar implementation approaches (e.g., dialog, stakeholder outreach, expansion of existing programs, demonstration programs) might be used to support multiple strategies.



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For example, three strategies that support the goal of strengthening mariner recruitment involve outreach and dialog between MARAD and Federal, State, and local agencies. While these three strategies seek to achieve the same goal (Goal 1: Strengthening Merchant Mariner Recruiting Efforts) and involve the same implementation approach (outreach), they represent three distinct lines of effort that MARAD will use to target different sets of stakeholders. Table A (beginning on page 12) provides a simplified discussion of the strategies and how they support each goal.



Strategic Outcomes

The Mariner Workforce Strategic Plan’s goals, objectives, and strategies focus on improved outcomes in three areas—recruitment, training, and retention.

Recruitment

The Plan identifies strategies to recruit a pool of highly competent mariners who are well-positioned to adopt maritime innovation and support national defense missions. The Plan seeks to use existing programs, such as the CoE Program, to expand the number of mariners. Additionally, MARAD will work under its existing authorities and funding to expand pathways for military veterans to become mariners, to capitalize on the valuable experience gained from years of military training. This can be accomplished through MARAD’s Federal Advisory Committee, the Marine Transportation System National Advisory Committee (MTSNAC) or working through other interagency partners like the U.S. Committee on the Marine Transportation System. MARAD will also work to promote the industry among the general public and increase awareness of resources available for mariner training.



Training

Training new and existing mariners ensures that the workforce is prepared for the challenges of today and the future. The Plan promotes new and existing apprenticeship programs that decrease the time required to earn a credential. MARAD’s CoE Program focuses primarily on institutions that support the training needs of the domestic maritime community by targeting institutions other than Federal and State maritime academies, which are focused on mariners with ocean-going, unlimited credentials. The Plan also acknowledges the need to address current and emerging skill requirements as the maritime industry incorporates emerging technologies.



Retention

The Plan also identifies strategies to retain mariners. Key support is outlined in the requirement to modernize the USCG Merchant Mariner Licensing and Documentation (MMLD) System, which will make it easier for mariners to monitor and maintain their credentials and for USCG to identify mariner and industry needs. MARAD will strengthen collaboration with Federal partners and industry representatives to improve the quality of life for mariners who live and work onboard a vessel for months at a time. Most importantly, the Plan stresses the crucial need for all stakeholders to create and maintain a safe working environment that welcomes mariners onboard and gives them advancement opportunities on the basis of their skills and professionalism.

Mariner Workforce Strategic Plan Execution

National security and economic prosperity are directly linked to the U.S. mariner workforce. While the strategic goals and objectives provide a road map toward ensuring the U.S. Merchant Marine is sufficiently robust in size and experience to meet the challenges of today and the future, the successful implementation of the strategy is the responsibility of both public and private entities. MARAD will continue to solicit feedback from maritime stakeholders and provide organizational leadership during the execution of the Plan. MARAD’s responsibilities will include, where appropriate, creating key performance indicators, measures, and metrics that define and measure success. There are limitations to what MARAD can accomplish alone through its existing authorities and funding, and the agency will encourage companies and individual mariners alike to reflect upon their own actions and the advancement of the strategies for the common good.



Mariner Workforce Strategic Plan – Summary Table

The Plan identifies strategies that MARAD intends to pursue over the next five years (FY 2023 to FY 2027) to address mariner recruitment, training, and retention concerns. Table A (below) identifies the Plan’s goals, lists their corresponding strategies, provides a brief description of the anticipated outcome from each initiative, and indicates whether the strategy can be executed under existing authorities and current appropriation.

The strategies are not listed in order of priority. MARAD is already pursuing several strategies within its statutory authority where adequate funding exists or has been requested by the Administration.

The Plan also focuses on strategies that could be implemented as “demonstration” priorities aimed at addressing challenges with merchant mariner recruitment, training, and retention. MARAD has identified strategies as the most suitable for implementation on a limited or demonstration basis. The table below provides a concise view of the alignment and description of each strategy.

Table A: Mariner Workforce Strategic Plan Goals and Strategies

Goal	Strategy	Description
Strengthen Workforce Development Programs	1. Increase efforts to promote the Military to Mariner Program through Federal and State agencies serving veterans.	The Military to Mariner Program is a multi-agency effort to support the recruitment of skilled military veterans into the mariner profession. MARAD will work with the Department of Labor Veterans’ Employment and Training Service and their State agency partners, the ED and the U.S. Department of Veterans Affairs (VA), to identify ways to strengthen and promote the program. Authority: 49 USC § 109 and Pub. L. 116–92, §3511.
	2. Promote the use of existing Federal information resources by maritime job seekers.	Several existing Federal resources provide information about maritime careers and Federal financial assistance programs for education and training. MARAD will work with its industry stakeholders to promote their use. Authority: 49 USC § 109.
	3. Establish a stronger maritime industry presence on the Department of Labor WorkforceGPS website.	WorkforceGPS is used by Federal and State workforce agencies, educators, and business leaders to learn about and promote specific workforce issues and bring focus to opportunities and issues related to individual industries. MARAD intends to work with Federal, State, and industry stakeholders to develop maritime-specific content for the site. Authority: 49 USC § 109.
	4. Work with the USCG and DoD to identify potential training programs for both active and retired military personnel to obtain MMCs.	Military personnel receive formal training and professional military certifications that are equivalent, or comparable to, the training needed for an MMC. MARAD will continue to work with its Federal partners to identify additional areas where that training can be applied towards a mariner credential. Authority: 46 USC § 51703, 49 USC § 109.

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Goal	Strategy	Description
Strengthen Workforce Development Programs	5. Encourage the development of new mariner apprenticeship programs.	Apprenticeship programs can be a cost-effective alternative for individuals seeking to join the mariner profession. MARAD will collaborate with Federal partners, State agencies, and industry stakeholders both to expand access to existing apprenticeship programs and to explore opportunities to establish new apprenticeship programs. Authority: 46 USC § 51703, 49 USC § 109.
	6. Encourage U.S. ship owners and operators to include positions for entry-level ratings aboard their vessels.	Entry-level ratings (Ordinary Seafarer in the deck department or Wiper in the engine department) are effective paths for individuals to enter the mariner profession without prior experience or training, and at a low cost. MARAD will explore this issue through dialogue with the USCG. MARAD will also encourage ship owners and operators to establish these positions within the complement of officers and ratings established by the USCG for inspected U.S.-flag vessels. Authority: 49 USC § 109 (MARAD), 46 USC § 8101 (USCG).
	7. Increase dialogue between MARAD and other Federal and State agencies to promote the pursuit of maritime careers and access to Federal financial assistance.	There are several existing Federal financial assistance programs that can be used to pursue maritime education and training. MARAD will work with its Federal partners in a unified, all-of-government approach to promote greater awareness of maritime career opportunities and Federal financial assistance. Authority: 49 USC § 109.
	8. Work with other U.S. government agencies to identify options for maritime training institutions to participate in Federal student aid programs.	Many institutions offering USCG-approved training programs are not certified to participate in Federal student aid programs, and maritime credentialing programs often are not eligible for other federal assistance. MARAD will work with other U.S. government agencies to identify options for maritime training institutions to participate in Federal student aid programs. Authority: 49 USC § 109.
	9. Encourage the use of Post 9-11 GI Bill education benefits for maritime education and training by service members' dependents.	Transitioning service members who do not use all their Post 9-11 GI Bill education benefits may be able to transfer those benefits, while still on active duty, to an eligible dependent, who could then use those benefits for mariner education and training. MARAD will explore this issue with the VA. Authority: 49 USC § 109.

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Goal	Strategy	Description
Strengthen Workforce Development Programs	10. Research mariner employment as qualifying employment in the Public Service Loan Forgiveness Program.	Merchant mariners serve the Nation's National Security interests by maintaining their credentials and serving aboard U.S.-flag vessels during national emergencies and times of conflict. MARAD will explore extending public service loan forgiveness rights to individuals who commit to careers of service as mariners. Need Authority: Similar to 20 USC § 1078–11 (ED)
	11. Develop a Mariner Training and Education Continuum.	Costs associated with maintaining or advancing an MMC can be considerable, preventing a credentialed mariner from obtaining the necessary training to maintain their credential, creating a loss to the workforce. MARAD will explore establishing a continuum of Mariner Training and Education program targeting these individuals to increase retention, and maintain a pool of trained, credentialed mariners for purposes of national security. Authority: 46 USC § 51509.
Support Maritime Training and Education Institutions	12. Promote the CoE Program.	MARAD will continue to leverage the CoE program, still in its early stages of development, and its broad network of afloat employment pathways to strengthen the nation's overall mariner training network. Authority: 49 USC § 109, 46 USC § 51706.
	13. Expand the MARAD SIP Program.	Promote utilization of the SIP program as funded in the appropriation and the Budget Request. Need Authority: Similar to 46 USC § 51509.
	14. Increase Federal support for maritime primary and secondary school (K–12) programs.	The nation's K-12 schools with a maritime educational track promote a lifelong knowledge of and interest in maritime careers and represent a potential source of mariners. MARAD intends to explore ways to increase Federal support for these institutions. Authority: 49 USC § 109.
	15. Investigate a Mariner Student Loan Program.	The 2022 study, Evaluating the Availability of Federal Financial Assistance for Merchant Mariner Training, identified several Federal financial assistance programs that can be used to pursue maritime education and training. Should those programs be found insufficient to increase substantially the U.S. mariner workforce, MARAD will evaluate a separate Mariner Student Loan Program.
	16. Continue programmatic and oversight improvements at the USMMA.	MARAD will continue to implement programmatic and administrative improvements at the USMMA. This will include specific steps to improve further the Academy's oversight and governance and Sexual Assault and Sexual Harassment prevention, training, and response program. Authority: 46 USC §, Ch.511 and 513.

MARINER WORKFORCE STRATEGIC PLAN (FY 2023–FY 2027)

Goal	Strategy	Description
Support Maritime Training and Education Institutions	17. Continue re-capitalization of MARAD training ships.	MARAD will continue to monitor and oversee the construction program for the <i>State</i> -class vessels, ensure the continued operation of existing training ships, and coordinate the smooth transition between those ships and the new <i>State</i> -class vessels. Authority: 46 USC § 51504.
	18. Continue to support State Maritime Academies as described in 46 CFR 310.	MARAD will continue to provide administrative oversight and programmatic and financial support to the State Maritime Academies in accordance with its statutory mission to “foster, promote, and develop” the maritime industry of the United States. Authority: 46 USC §, Ch. 515.
Improve Shipboard Working Environment	19. Work with Federal and industry stakeholders to support and sustain a safe and positive shipboard climate.	MARAD will ensure that U.S.-flag vessel operators that employ USMMA midshipmen as Officers in Training at sea comply with policies and procedures designed to ensure the highest level of safety for the midshipmen. Authority: 46 USC § 10104, 49 USC § 109.
	20. Work with Federal and industry stakeholders to improve shipboard working conditions and the workplace climate.	Shipboard quality-of-life issues are substantial factors in mariner recruitment and retention. MARAD will work with industry stakeholders to identify policies or approaches that can improve shipboard living conditions and work-life balance. MARAD will also identify those areas where Federal guidance or intervention could support this effort. Authority: 46 USC §, Ch.517, 49 USC § 109.
	21. Increase dialogue between MARAD and other Federal and State agencies to promote the pursuit of mariner careers and access to Federal financial assistance.	Other Federal agencies, as well as many State and local agencies, have strong relationships with their local communities and community groups. MARAD will engage more closely with these agencies and explore other marketing opportunities to raise awareness of the merits of employment aboard U.S.-flag vessels. Authority: 49 USC § 109.

MARINER WORKFORCE STRATEGIC PLAN (FY 2023–FY 2027)

Goal	Strategy	Description
Ensure Availability of a Skilled and Sufficient Mariner Workforce for National Security	22. Obtain clear understanding of the makeup of the mariner workforce using data and analysis.	MARAD and its national security partners need more actionable information on the availability of credentialed mariners to support strategic sealift for national security contingencies. MARAD intends to obtain this information. Authority: 49 USC § 109 (MARAD), 46 USC § 7502 (USCG).
	23. Support the USCG's effort to implement the Maritime Workforce Working Group's recommendations to overhaul the MMLD System.	The USCG MMLD System is not currently structured to provide detailed information on numerous critical metrics regarding credentialed mariners. MARAD, its Federal partners, and public and industry stakeholders will maintain regular dialogue with USCG to help this critical effort receive the high-level attention needed for completion. Authority: 49 USC § 109, 46 USC § 7502 (USCG), Pub. L. 117–263 (Section 11511).
	24. Promote continued support of the reserve Strategic Sealift Officer Program.	The U.S. Navy relies upon its cadre of Strategic Sealift Officers to crew vessels and fill other critical military roles during national security contingency operations. MARAD intends to work with its Defense partners to explore ways to strengthen and promote continued support of this DoD program. Authority: 49 USC § 109, 46 USC § 51104, and 46 USC §, Ch. 515.
	25. Identify training opportunities for mariners in the necessary skills for operating in joint military-civilian contested environments and to support humanitarian assistance and disaster relief operations.	During national security operations involving both military and civilian ships, civilian mariners must be knowledgeable in a wide range of protocols and procedures to ensure safety and security of all personnel. Mariners must also be ready to participate in humanitarian assistance and disaster relief operations. MARAD will work with its Federal partners to identify training opportunities. Authority: 49 USC § 109, 46 USC §, Ch. 517.
	26. Publicize clear and unambiguous guarantees of reemployment rights for mariners who volunteer to sail during surge sealift conditions.	A credentialed mariner who voluntarily leaves their existing employment to support national security contingency sealift operations must be guaranteed reemployment rights upon completion of their service. MARAD will work with its Federal partners to strengthen this policy to guarantee those rights. Authority: 46 USC § 52101.

MARINER WORKFORCE STRATEGIC PLAN (FY 2023–FY 2027)

Goal	Strategy	Description
Support Maritime Innovation	27. Ensure that the mariner workforce has the skills necessary to operate vessels with evolving system technology.	Domestic and international efforts to develop and deploy evolving technology are rapidly growing. With an increase in automated systems aboard vessels, the nature of on-board responsibilities for crew will change. MARAD will work closely with its Federal partners and industry stakeholders to monitor the development and implementation of technology-related initiatives, to ensure that the mariner workforce of the future has the training and skills needed to operate those vessels. Authority: 46 USC § 51703, 49 USC § 109.
	28. Encourage or incentivize emerging technology subject matter in the curricula of maritime education and training institutions.	All sectors of the U.S.-flag merchant marine rely upon advanced technologies and electronic systems for vessel operations. Emerging technologies also exist that could lead to further and fundamental impacts on the mariner workforce. MARAD will work with the nation's maritime training institutions to ensure they are providing sufficient instruction in these areas. Authority: 46 USC § 51703, 49 USC § 109.
Superior Policy Execution and Stewardship of Resources	29. Increase dialogue between Federal agencies and the maritime industry to address workforce matters, work-life balance, emerging technologies, training needs, and other issues.	As the Federal agency tasked with the statutory mission to “foster, promote, and develop” the maritime industry of the United States, MARAD will work to strengthen collaboration with its Federal partners and industry stakeholders, through CMTS and MTSNAC for example, to address the broad array of issues facing the mariner community. Authority: 46 USC § 51703, 49 USC § 109.
	30. Increase national awareness of the U.S. Merchant Marine’s role in peacetime, national emergencies, and national security and the benefits of the seagoing mariner profession.	Many Americans seem unaware of the significant role that the U.S. Merchant Marine plays in domestic transportation, international commerce, and national security. MARAD will work with its Federal partners (e.g., the U.S. Committee on the Maritime Transportation System) and others to develop a comprehensive national strategy to promote the maritime industry and the mariner profession. Authority: 49 USC § 109.
	31. Conduct an internal MARAD resource requirements review to identify capital, operational, and human resource needs.	MARAD will continue to evaluate what resources it needs to successfully implement its programs. Authority: 49 USC § 109, 31 USC §, Ch.11.

Research Priorities

Plan preparation identified several information gaps concerning the U.S. mariner workforce, as well as issues for which further research could support more effective policy creation and agency planning.

Research Priority 1: Lack of usable data on mariner workforce and credentials

Data on the mariner workforce is not readily available or easily accessible. For example, the USCG National Maritime Center is responsible for issuing MMCs, and their database is the single source of the best potential data on mariners. However, this database is not conducive to data mining or information sharing. The lack of data on key aspects of the mariner workforce (demographics and credentials) hinders effective planning and policy analysis. The USCG is undertaking a substantial effort to improve and modernize their mariner pool database, which is expected to provide better analytical capability. Completion of this effort, however, is not expected for some time. MARAD is contemplating two strategies that would significantly improve current analytical capabilities: conducting a biennial mariner survey and supporting the update to the USCG MMLD System. In addition, MARAD will consider a broader, separate research effort to establish a more in-depth profile of the mariner workforce, including exact workforce requirements (e.g., the precise credentials needed to serve on particular vessel types, details on the specific positions required by each vessel's USCG Certificate of Inspection).

Research Priority 2: Lack of a single, comprehensive source of data on the U.S.-flag fleet

The demand for credentialed mariners is driven by the composition of the U.S.-flag commercial fleet. While there are numerous data sources available that provide various fields of information on the U.S.-flag fleet, ready access to that information is difficult. Data is maintained by several Federal agencies, including MARAD, the USCG, and the U.S. Army Corps of Engineers. However, the most detailed data was found through a private proprietary company offering data and data services for a fee. The creation of a comprehensive, public, searchable database on U.S.-flag vessels that incorporates all existing data sources in a single user-friendly portal could be an invaluable asset to MARAD and its Federal and industry partners, helping to better understand the demand for U.S. mariners.

Research Priority 3: Understanding interdependencies and interrelationships with other transportation occupations, modes, and sectors

While creating this Plan, it became apparent that a greater understanding of the interdependencies, linkages, and relationships between the maritime industry and maritime occupations on the one hand, and other transportation occupations, modes, and sectors on the other, would provide greater insight and permit a more thorough analysis and planning. For example, are there certain maritime occupations that are more likely to result in crossover between different industry segments? Alternatively, are there other non-maritime occupations that are more likely to encourage entry into, or transition out of, the mariner workforce?

Conclusion

This Mariner Workforce Strategic Plan details strategies that MARAD could pursue to strengthen the mariner workforce. The strategies could help MARAD ensure that mariner recruitment, training, and retention meets the Nation's need for a highly trained afloat workforce that can crew our commercial fleet and Ready Reserve Force vessels. Meeting this need will improve transportation safety aboard U.S.-flag vessels operating on our inland, coastal, and ocean waters; and further strengthen the U.S. economy by facilitating access to good-paying jobs for American workers.

MARAD is already implementing some of the strategies outlined in the Plan through various programs and efforts within its authority and appropriations. This Plan builds on those efforts and programs, organizes them under one strategic plan that provides an actionable way forward, and acknowledges MARAD's commitment to maritime education and training and increasing safety in the industry as a whole. To successfully execute this Plan, MARAD will consider a variety of approaches, such as: strengthening existing programs; expanding stakeholder dialogue; exploring new initiatives; and recommending the establishment of new programs when identified.

The Plan's development involved substantial research, including identification of demonstration and research priorities, summarized herein.

To fully implement this Plan, MARAD would need to assess organizational risks and implement programmatic and internal controls as necessary. This, in turn, would necessitate establishing specific performance measures for each initiative, using available or developing data-driven metrics. In addition, to fully address the issues with mariner recruitment, training and retention, a partnership commitment from the industry is absolutely necessary. Industry has a key role in successfully implementing the proposed workforce development strategic plan, and MARAD will work to align its efforts with those being pursued by the industry. The strategies outlined in this Plan reflect a broad range of options available to both the Federal Government and the maritime industry, and are not intended to establish either policy or commitments on behalf of the United States Department of Transportation.

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