

NOAA Mariner Recruitment and Retention: Actions Needed to Develop a Strategic Workforce Planning Process

GAO-24-106958

Q&A Report to Congressional Committees

July 8, 2024

Why This Matters

National Oceanic and Atmospheric Administration (NOAA) mariners—which include the NOAA Commissioned Officer Corps (NOAA Corps) as well as civilian professional mariners (professional mariners)—operate the nation’s largest fleet of federal research and survey ships. This fleet of 15 ships, managed by the NOAA Office of Marine and Aviation Operations (OMAO), operates worldwide to conduct scientific missions such as nautical charting, fisheries research and surveys, and atmospheric research. In its 2021 to 2025 Strategic Plan, OMAO identified sustaining a high performing, healthy, and satisfied workforce as its top priority.

Due to a global mariner shortage, actions are needed to improve mariner recruitment and retention, according to the Administrator of the U.S. Department of Transportation’s Maritime Administration—the federal agency responsible for promoting the U.S. merchant marine.

The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 includes a provision for us to examine issues related to recruitment and retention of NOAA mariners.¹ This report provides information on the status of recruitment and retention of NOAA mariners, OMAO efforts to address factors that affect mariner recruitment and retention, the extent to which OMAO has implemented strategic workforce planning for its mariner workforce, and approaches for recruiting and retaining mariners that have been used by other maritime organizations.

Key Takeaways

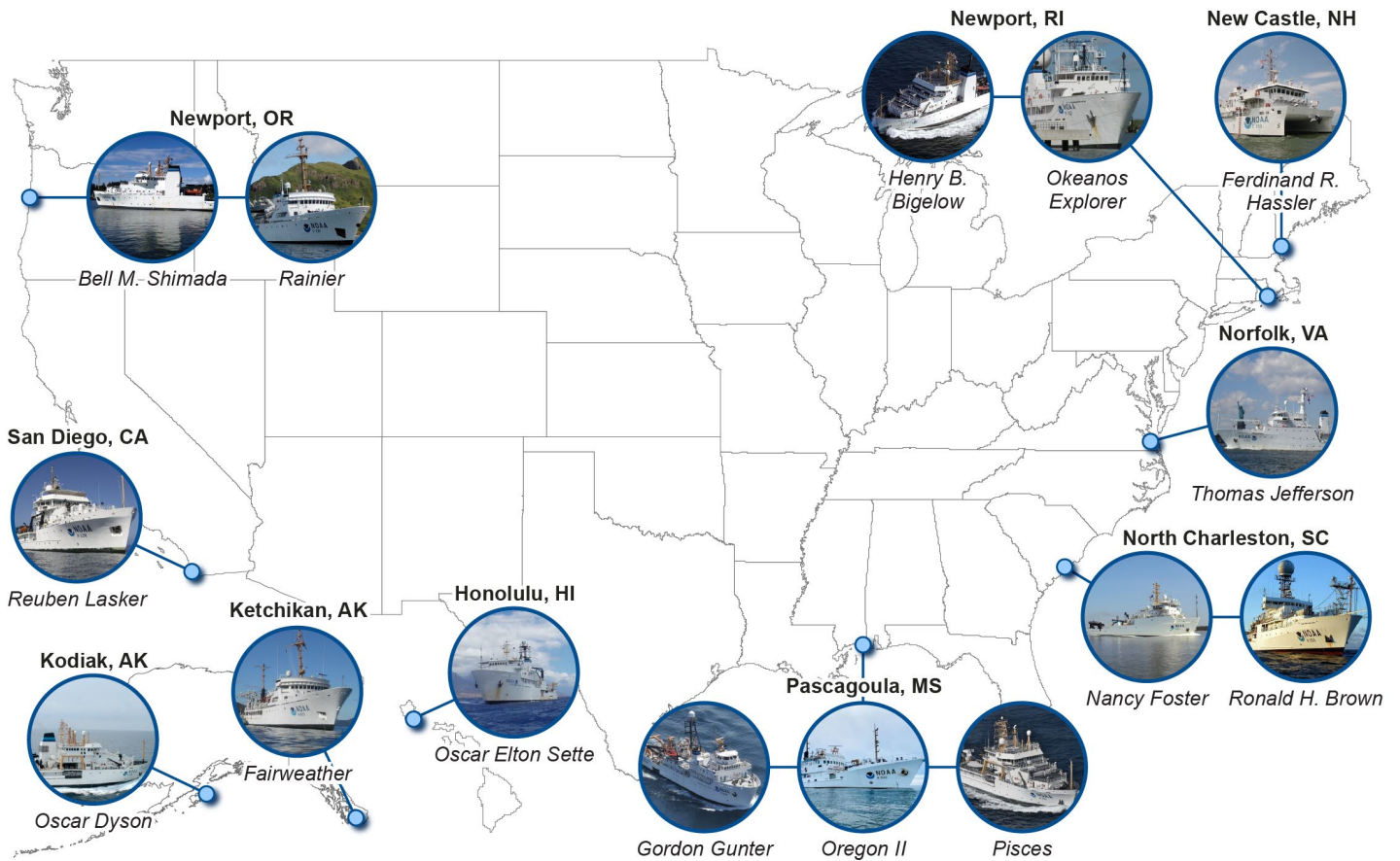
- NOAA needs to increase the number of NOAA Corps officers and professional mariners to meet NOAA’s marine operations mission requirements, according to OMAO officials.
- OMAO faces a range of challenges to mariner recruitment and retention and is taking some steps to address them. For example, to address challenges with maintaining work-life balance, OMAO has plans to move to rotational sea schedules for the professional mariners and certain NOAA Corps officer positions which will allow for shorter duty durations at sea.
- OMAO does not have active workforce plans for the NOAA Corps or professional mariner workforces. To ensure that it consistently has workforce plans covering both the NOAA Corps and professional mariners, we are recommending that OMAO develop and implement a workforce planning process.
- Other selected federal and non-federal maritime organizations have taken a range of actions to improve mariner recruitment and retention. These include

offering financial incentives, implementing quality of life improvements aboard ships, and collaborating with unions to manage recruitment and retention.

What is NOAA's marine operations mission?

NOAA's marine operations mission is to support its environmental science and stewardship goals through the operation, maintenance, and modernization of its ships. OMAO plays a central role in enabling NOAA to conduct research, collect data, and carry out various mandates related to oceanography, atmospheric science, climate research, and more. Additionally, it oversees the NOAA Corps, whose uniformed officers operate research vessels and serve in different capacities to advance scientific and operational goals. See figure 1 for the home ports for these research vessels.

Figure 1. National Oceanic and Atmospheric Administration (NOAA) Ships and Their Home Ports



Source: GAO analysis of NOAA information; U.S. Census Bureau (map); All photos courtesy of NOAA; Gordon Gunter by Jennifer Gatze, Nancy Foster by Conor Maginn. | GAO-24-106958

NOAA tracks the number of days that its ships spend at sea as a key metric to assess and plan its marine operations, measure its mission achievements, and evaluate its coverage of data collection efforts. This “days at sea” metric also offers insights into the utilization of NOAA’s fleet and staff sizes that support its various missions.

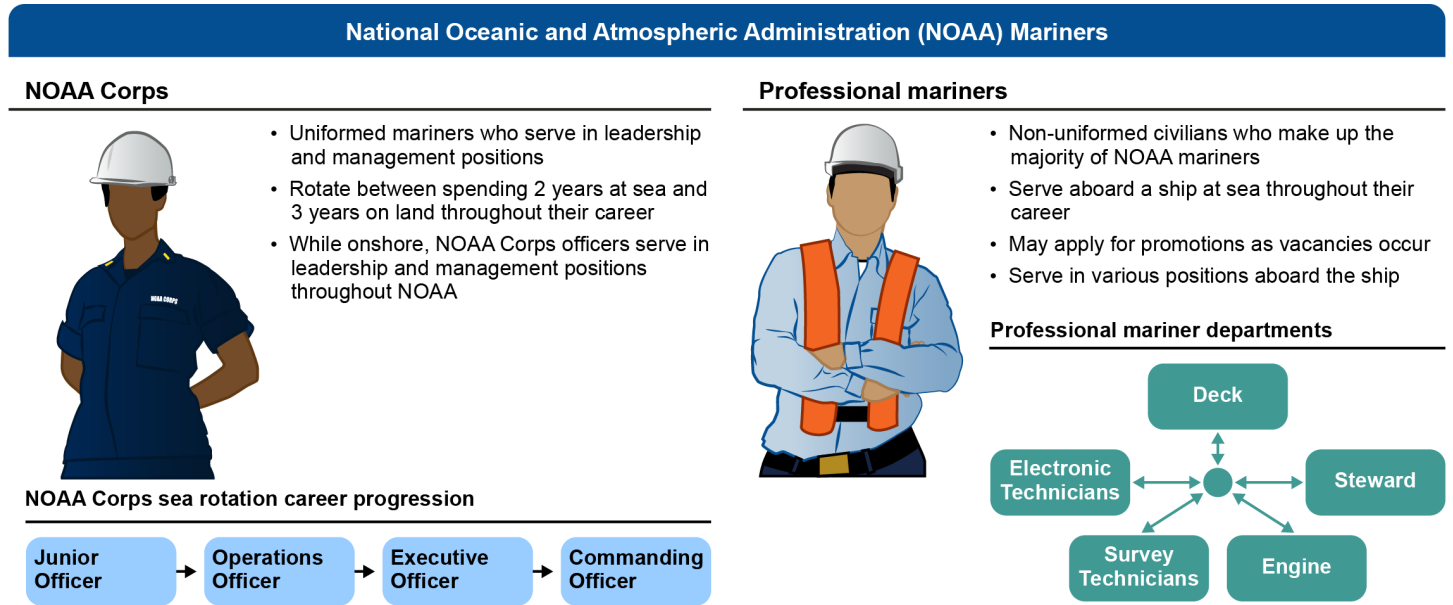
In recent years, OMAO has completed about half of the “days at sea” that would be needed to meet NOAA’s mandates. This was due to various constraints including the size of its fleet of ships and mariner workforce constraints. To increase its capacity to meet its marine operations mission requirements, it is in the process of developing a vessel recapitalization plan that includes workforce considerations. According to OMAO officials, the recapitalization plan assesses the numbers of NOAA ships required to complete its mission requirements and

the number of NOAA mariners required to staff those ships. According to OMAO's fiscal year 2021 through 2025 Strategic Plan, OMAO aims to grow its professional mariner and NOAA Corps workforces to support its mission.

What are the roles of NOAA Corps officers and professional mariners?

NOAA Corps officers and professional mariners serve jointly on vessels but have different roles and responsibilities to operate the vessels and support the scientific missions (see fig.2). In fiscal year 2023, there were approximately 270 NOAA Corps mariners and 350 professional mariners serving in NOAA.²

Figure 2: Roles and Career Pathways for NOAA Corps and Professional Mariners



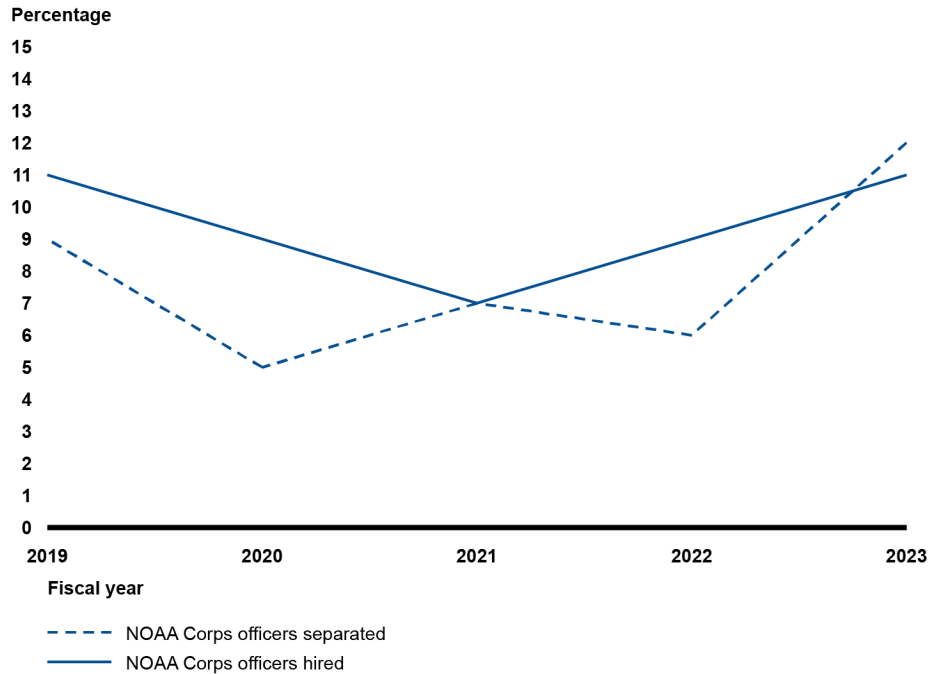
Source: GAO analysis of NOAA documents; GAO illustrations based on NOAA and Minerva Studio/stock.adobe.com photographs. | GAO-24-106958

What is the status of recruitment and retention among NOAA mariners?

NOAA data show that recruitment and retention varied for the NOAA Corps and professional mariners over the last 5 fiscal years, with separations outpacing hiring in some of those years.

- NOAA Corps.** NOAA data show that NOAA has generally increased the number of Corps mariners over the last 5 fiscal years, with 2023 as an exception. Specifically, the number of NOAA Corps mariners rose from 262 in fiscal year 2019 to 280 in fiscal year 2022. The number of mariners then declined to 269 in fiscal year 2023. NOAA Corps mariner new officer hires have generally outpaced or equaled separations, again with fiscal year 2023 as an exception, as shown in figure 3. Officials from the NOAA Commissioned Personnel Center attribute the 2023 rise in separations to a buildup of postponed separations and retirements during the COVID-19 pandemic, among other factors.

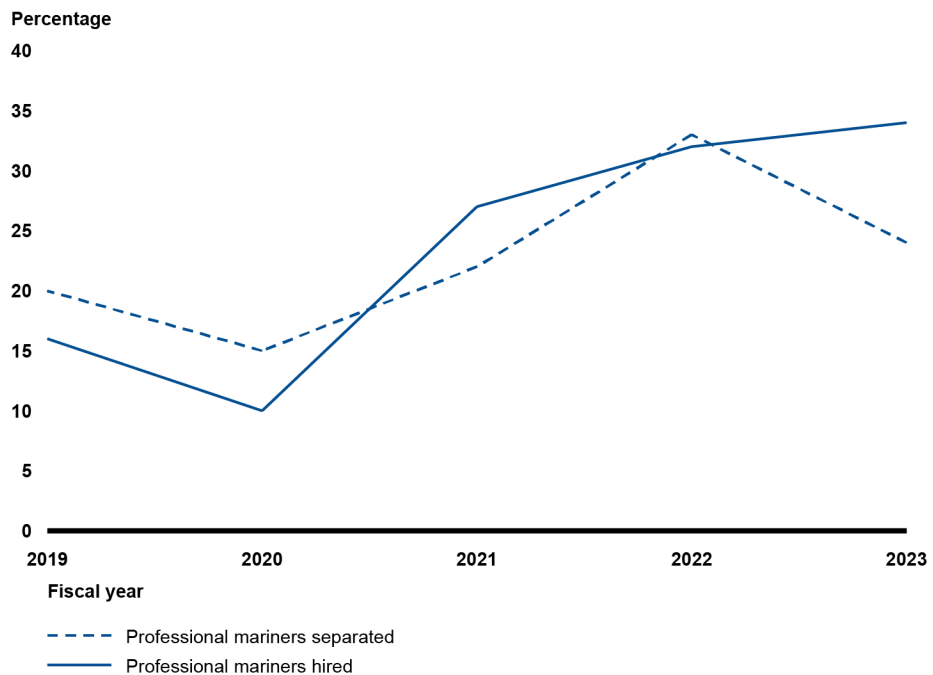
Figure 3: NOAA Corps Hiring and Separations as a Percentage of Total NOAA Corps Mariner Workforce, Fiscal Years 2019 through 2023



Source: GAO analysis of National Oceanic and Atmospheric Administration (NOAA) data. | GAO-24-106958

- Professional mariners.** NOAA professional mariners have experienced high turnover rates over the last 5 fiscal years. NOAA professional mariner separations increased from 15 percent of that workforce in fiscal year 2020 to 33 percent in fiscal year 2022, before falling to 24 percent in fiscal year 2023. During that time, OMAO also increased the number of professional mariners it hired each year, although separations exceeded new hires in 3 of the last 5 fiscal years (see fig. 4).

Figure 4: Professional Mariner Hiring and Separations as Percentage of Total Professional Mariner Workforce, Fiscal Years 2019 through 2023

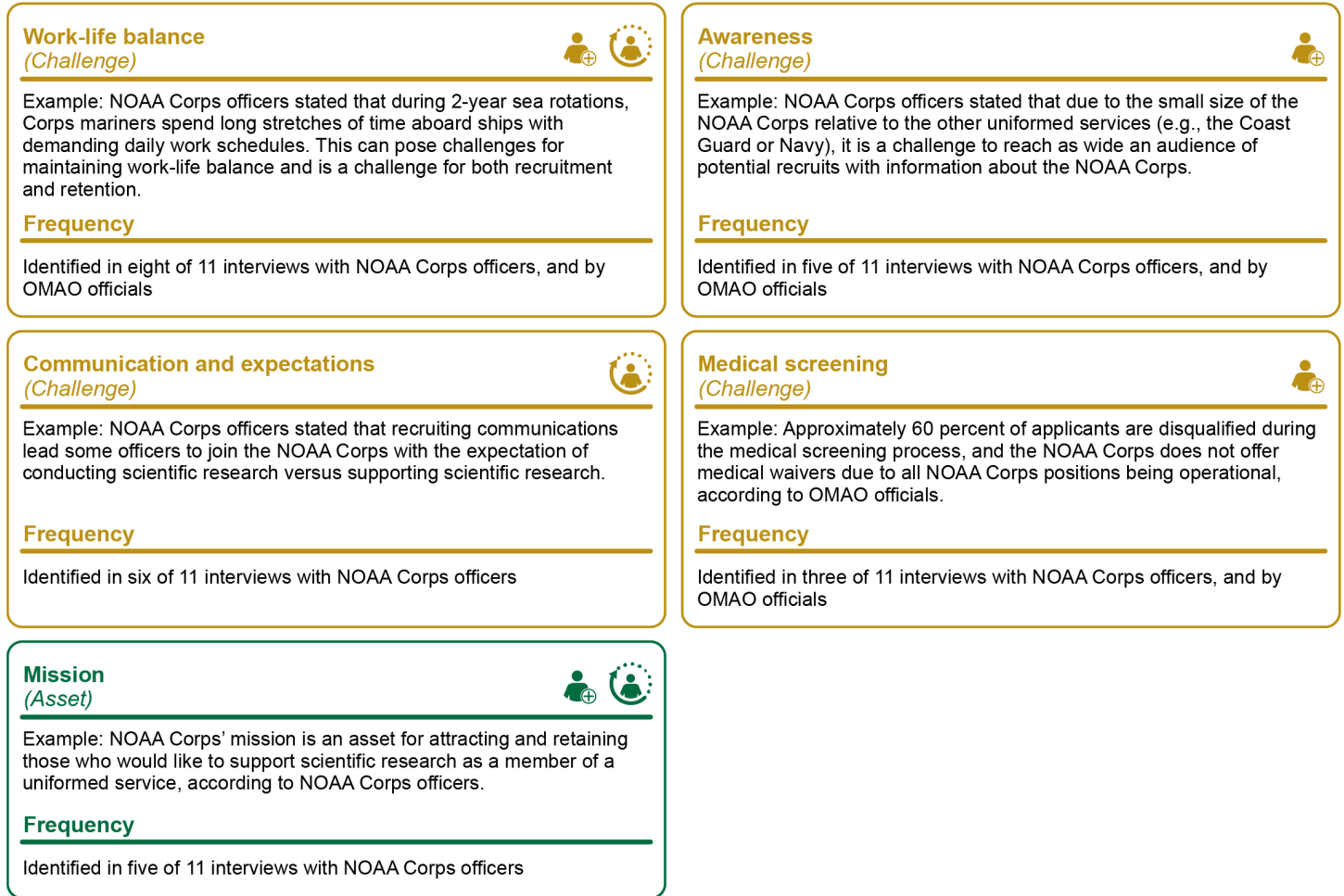


Source: GAO analysis of National Oceanic and Atmospheric Administration (NOAA) data. | GAO-24-106958

What are factors that affect NOAA Corps recruitment and retention?

Challenges with work-life balance, limited knowledge of the existence of the NOAA Corps, and high disqualification rates during the medical screening process are factors that impede recruitment or retention, according to OMAO officials and selected NOAA Corps officers. Conversely, selected Corps officers identified the opportunity to support NOAA’s scientific research mission as an asset for both recruitment and retention. Figure 5 summarizes factors that affect NOAA Corps recruitment and retention as well as how frequently officials raised each factor.

Figure 5: Factors Affecting Recruitment or Retention of NOAA Corps Officers



Legend

-  Factor affecting recruitment
-  Factor affecting retention
-  NOAA National Oceanic and Atmospheric Administration
-  OMAO Office of Marine and Aviation Operations

Source: GAO analysis of NOAA documents and interviews with NOAA officials; GAO (illustrations). | GAO-24-106958

Note: We selected for our interviews three NOAA Corps officers who recently completed a sea rotation to obtain perspectives on recruitment and retention from officers who recently served at sea; five officers who serve on the NOAA Junior Officer Advisory Committee, a junior officer employee group, because of the committee’s visibility across the junior officer workforce; and one representative of the Association of NOAA Corps Officers because of their experience interacting with officers serving across the NOAA Corps. In addition, during two interviews we spoke with officers serving aboard both ships that we visited, the *Oscar Dyson* and the *Fairweather*. During these interviews, we asked open-ended questions regarding factors affecting recruitment and retention. As a result, officers may have agreed that additional items were challenges or assets, if asked directly about them.

What is OMAO doing to improve NOAA Corps recruitment and retention?

OMAO is taking steps to address various NOAA Corps mariner recruitment and retention challenges. Specifically, OMAO coordinates with a junior officer-led advisory committee, is piloting a rotational sea schedule for certain Corps positions, and contracted with a public relations firm to develop NOAA Corps branding and recruitment strategies.

- Junior officer committee.** The NOAA Junior Officer Advisory Committee (NJAC) represents the interests of NOAA Corps junior officers and acts as a liaison between junior officers and OMAO leadership. NJAC is to hold monthly meetings with OMAO and has developed a working relationship to discuss issues related to recruitment and retention, according to OMAO officials and NJAC representatives. In 2018, NJAC conducted a survey on issues affecting work-life balance among junior officers and presented recommendations to OMAO regarding actions to improve junior officer work-life balance. According to NJAC officers, OMAO took action in response to several NJAC recommendations.
- Rotational sea schedule pilot.** In 2023, in response to NJAC feedback, the NOAA Corps began a pilot program to transition the operations and executive officer positions on two ships to rotational schedules. Instead of spending 2 years aboard a ship during the operations and executive officer sea tours, these officers rotated between 12 weeks aboard the ship and 6 weeks in a shoreside support position across a 3-year sea tour (see figure 6). Under the pilot, OMAO added an additional operations officer position on shore for each ship in the pilot to support this rotational schedule. According to OMAO officials, they aim to reduce the sea tour burden and ultimately improve retention. In addition, OMAO aims to improve training and professional development opportunities aboard the ship.

Figure 6: National Oceanic and Atmospheric Administration Corps Pilot Program for Rotational Sea Tours (Operations and Executive Officers)

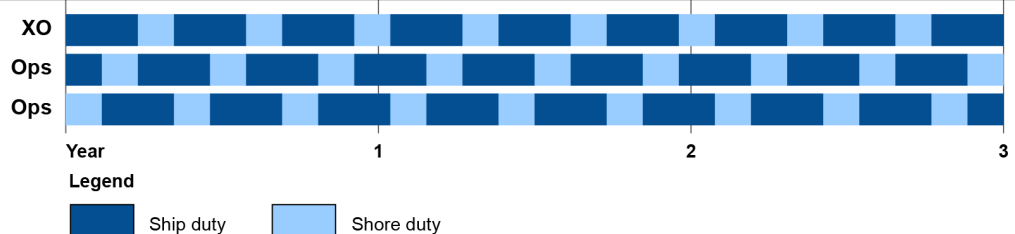
Current schedule

One executive officer (XO) and one operations officer (Ops) serve aboard ship for 2 years



Piloted rotational schedule

One XO and two ops are assigned to a ship for 3 years on a rotational basis



Source: GAO analysis of National Oceanic and Atmospheric Administration (NOAA) documents. | GAO-24-106958

- Contract for strategies to improve branding and recruitment.** In September 2023, OMAO contracted with a vendor to assess the NOAA Corps' recruiting efforts, develop plans to brand and market the NOAA Corps, and create new marketing materials for the NOAA Corps. According to OMAO officials, they intend to use this contract to develop a more strategic approach to recruitment.



What are factors that affect professional mariner recruitment and retention?

Various factors affect professional mariner recruitment and retention, according to professional mariners, unions that represent professional mariners, and OMAO officials. These include less time off work relative to other maritime industry employers, limited career advancement opportunities, less pay relative to other employers, challenges with shipboard culture, and heavy workloads. In addition, professional mariners identified many of these factors as challenges to retention in their responses to surveys they take when leaving their position. However, professional mariners and OMAO identified NOAA's science mission as an asset for recruitment and retention. See figure 7 for a summary of factors that affect professional mariner recruitment and retention as well as how frequently officials raised each factor.

Figure 7: Factors Affecting Recruitment or Retention of Professional Mariners



Legend

-  Factor affecting recruitment
-  Factor affecting retention
- NOAA National Oceanic and Atmospheric Administration
- OMAO Office of Marine and Aviation Operations

Source: GAO analysis of NOAA documents, interviews with NOAA officials, and interviews with officials from unions that represent NOAA professional mariners; GAO (illustrations). | GAO-24-106958

Note: We selected for our interviews eight professional mariners who have served on the Marine Operations Advisory Committee, an employee group that represents professional mariners. We also interviewed professional mariners serving aboard two ships that we visited; one interview with mariners serving on the *Oscar Dyson* and two interviews with mariners serving on the *Fairweather*. We also interviewed representatives of each of the four unions that represent NOAA professional mariners. During these interviews, we asked open-ended questions regarding factors affecting recruitment and retention. As a result, professional mariners and union officials may have agreed that additional items were challenges or assets, if asked directly about them.

What is OMAO doing to improve professional mariner recruitment and retention?

OMAO has taken a range of actions intended to improve professional mariner recruitment and retention including transitioning to rotational staffing, leveraging direct-hire authority, offering hiring and retention bonuses, and establishing a mariner advisory committee.

- **Rotational staffing.** OMAO is planning to transition each ship in the fleet to a rotational staffing schedule where mariners will spend 2 months at sea followed by 1 month on leave, known as a “2 to 1 rotation”, according to OMAO officials. OMAO officials stated this schedule is more comparable to those offered by private maritime employers. OMAO officials also stated that this new schedule is possible because the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 increased professional mariner shore leave fourfold to 8 days per month.³
- **Direct hiring.** OMAO implemented its direct hiring process in fiscal year 2022 in place of the Office of Personnel Management’s USAJOBS website, according to OMAO officials.⁴ Additionally, officials stated that they developed a professional mariner hiring portal, streamlining the hiring process and enabling OMAO to respond to staffing needs more efficiently.
- **Hiring and retention bonuses.** In fiscal year 2022, OMAO began offering a \$10,000 hiring bonus for new professional mariners who commit to 2 years of service. In addition, in 2023, OMAO offered a 10 percent salary increase, paid biweekly, to mariners as a retention incentive.
- **Mariner advisory committee.** Since approximately 2017, the Marine Operations Advisory Committee (MOAC) has served as a mariner advisory body including representation from each ship department (engine, deck, steward, electronics technicians, and survey technicians), according to a MOAC member and OMAO officials. MOAC members hold monthly meetings with OMAO leadership to discuss issues, concerns, and initiatives across the professional mariner workforce.

To what extent has OMAO implemented a strategic workforce planning process?

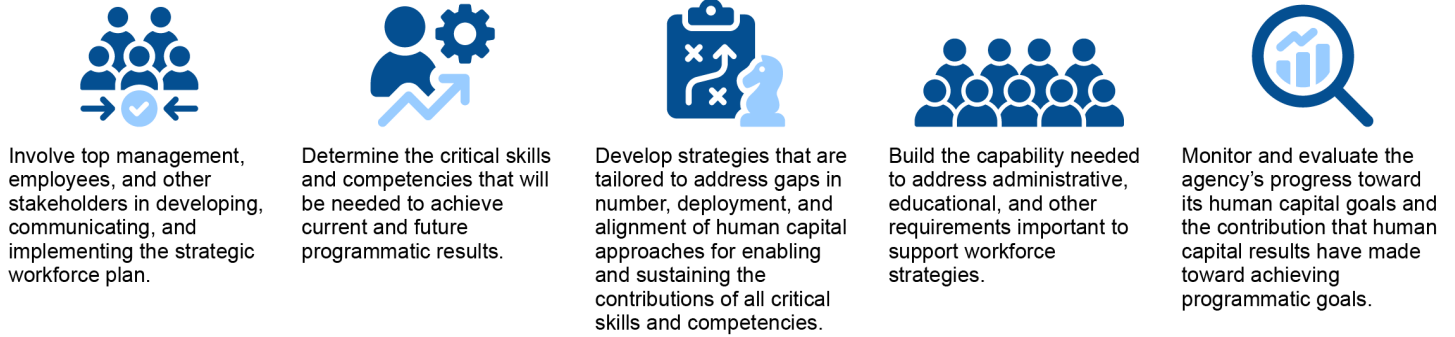
OMAO does not have active workforce plans for the NOAA Corps or professional mariner workforces. Specifically, the NOAA Corps has never had a workforce plan, according to OMAO officials. OMAO is developing a workforce plan for the NOAA Corps; however, this process has been ongoing for over a decade and officials do not have an estimate of when they will complete the plan. In 2013, OMAO issued the most recent workforce plan for the professional mariner workforce that covered fiscal years 2013 through 2017. OMAO has not had an active workforce plan for the professional mariner workforce since 2017. According to OMAO officials, they are in the process of developing a new workforce plan for the professional mariner workforce; however, they do not have an estimate of when they will complete the plan.

NOAA’s Workforce Planning Policy directs all NOAA line offices, which includes OMAO, to undertake competency-based workforce planning activities to systematically identify human capital needs. This planning is to ensure that NOAA is able to recruit, develop, and maintain its workforce with the competencies required for mission success.⁵ OMAO has not developed and maintained active workforce plans because it does not have an established workforce planning process, according to OMAO officials. Further, officials working on the NOAA Corps and professional mariner workforce plans stated that staff turnover has played a role in the absence of workforce plans.

By developing and implementing a workforce planning process, OMAO can ensure that it consistently has active workforce plans covering both the NOAA Corps and professional mariners. We have previously identified key principles for effective strategic workforce planning, as shown in figure 8 below.⁶ As OMAO

develops a workforce planning process, incorporating these principles would better position OMAO to grow its mariner workforces and meet mission requirements.

Figure 8: Key Principles for Effective Strategic Workforce Planning



Source: GAO; Icons-Studi/stock.adobe.com. | GAO-24-106958

How do other selected maritime organizations recruit and retain mariners?

Other selected federal and non-federal maritime organizations have taken a range of recruitment and retention approaches to address the competitive landscape of maritime employment. These approaches range from financial incentives and quality of life improvements to collaborative efforts with unions.

Federal Maritime Organizations

Military Sealift Command and U.S. Army Corps of Engineers. Both Military Sealift Command (MSC) and U.S. Army Corps of Engineers (Corps) contribute to maritime operations and services for the U.S. military and employ professional mariners. While MSC specializes in providing transportation and sealift services, the Corps engages in engineering and navigational tasks for infrastructure development, environmental restoration, and disaster response projects.

According to MSC and Corps officials, both organizations have adopted various financial incentives to attract and retain talent. These approaches encompass a spectrum of recruitment, relocation, and retention incentives. For example, MSC and the Corps offer retention bonuses of between 10 percent and 25 percent of base pay for mariners with unique qualifications or to fill a special need. However, Corps officials have noted the limitations of lump sum financial incentives and have recognized mariners' preference for competitive base pay, which contributes to their retirement benefits. Table 1 provides examples of approaches undertaken by each government agency to attract and retain professional mariners.

Table 1: Examples of Federal Maritime Organization Recruitment and Retention Approaches

Approaches taken by both Military Sealift Command and the U.S. Army Corps of Engineers

Offers training and career advancement courses

Offers Student Loan Repayment Program that requires mariners to sign a 3-year service obligation

Approaches taken by Military Sealift Command only

Shares job announcements that highlight average pay (e.g. \$99,000) in addition to base pay (e.g. \$49,000)

Provides training to ease transition to mariner life at sea

Contacts maritime schools and posts flyers to inform mariners about job opportunities

Approaches taken by U.S. Army Corps of Engineers only

Implements workforce assessment planning at regional and vessel level to address staffing needs

Monitors use of incentives to evaluate effectiveness on retention

Source: GAO analysis of Military Sealift Command and U.S. Army Corps of Engineers information. | GAO-24-106958

Non-Federal Maritime Organizations

University-National Oceanographic Laboratory System. The University-National Oceanographic Laboratory System (UNOLS) coordinates research vessel use for a collective group of academic institutions in the U.S. aimed to advance oceanographic research. In addition to some UNOLS-affiliated academic institutions offering retention bonuses to mariners, UNOLS representatives stated that funding agencies and ship operators underscored their commitment to improving mariners' quality of life and work-life balance. For instance, UNOLS representatives recommend that their vessel operators recognize mariners' responsibilities beyond work and accommodate other obligations—such as training or personal commitments. UNOLS representatives stated that this dedication to work-life balance may improve retention.

Shipping management companies. There are seven private shipping management companies who employ mariners to fulfill a federal mission under contract with the Department of Transportation's Maritime Administration through Ship Management Service Contracts.⁷ We interviewed five of these shipping companies. Representatives from four of them stated that they do not provide incentives to professional mariners, while representatives of the fifth shipping company did not comment about providing incentives to mariners. Three of the shipping companies discussed their efforts to improve the experience of living on vessels. For example, one shipping company upgraded vessel facilities with new gyms and enhanced food quality to stay competitive. Representatives from another shipping company stated that having permanent positions on vessels to cultivate community also aids in retention.

For recruitment, four of the five shipping companies we interviewed stated that they generally rely on unions to recruit and train union members. Through this staffing model, shipping companies may announce job positions through unions. Different companies may offer varying wages and benefits based on their collective bargaining agreements with the unions. According to shipping company representatives, companies generally have the right to vet and select mariners, and the unions are responsible for sourcing mariners.

Conclusions

NOAA Corps officers and professional mariners support a range of NOAA operational marine missions. OMAO has faced challenges meeting mission requirements due to mariner workforce constraints. OMAO has taken a variety of actions to address challenges with recruiting and retaining NOAA Corps officers and professional mariners. However, OMAO does not have active workforce plans for the NOAA Corps or professional mariners to guide its efforts to improve mariner recruitment and retention and to expand the size of these mariner workforces. Developing and implementing a workforce planning process that incorporates key principles for effective strategic workforce planning would help OMAO ensure that it consistently has active workforce plans and better position it to grow its mariner workforces and meet mission requirements.

Recommendation for Executive Action

The Director of OMAO should develop and implement a workforce planning process that covers both the NOAA Corps and professional mariners and

incorporates key principles of effective strategic workforce planning. (Recommendation 1)

Agency Comments

We provided a draft of this report to the Department of Commerce, the Department of Defense, the Department of Transportation, and the Department of Homeland Security for review and comment. The Department of Commerce provided written comments, which are reprinted in appendix I. In its letter, the department stated NOAA concurred with our recommendation and provided details on what the mariner workforce planning process should include. NOAA also provided technical comments, which we have incorporated into the report as appropriate.

How GAO Did This Study

To assess the status of recruitment and retention among NOAA mariners, we reviewed NOAA hiring and separation data from fiscal years 2019 through 2023. To assess the reliability of these data, we conducted manual data testing for errors and discussed the data with NOAA officials. We determined that the data were sufficiently reliable for the purpose of reporting hiring and separation rates for NOAA Corps officers and professional mariners.

To determine factors that affect recruitment and retention of NOAA Corps officers and professional mariners, we visited two NOAA vessels—the *Oscar Dyson* and the *Fairweather*—to observe the working conditions of NOAA Corps officers and professional mariners at sea. Furthermore, we spoke to NOAA Corps officers and professional mariners who served on those vessels to also obtain their perspectives on recruitment and retention factors. We also interviewed OMAO officials for their perspectives on the factors that may affect NOAA Corps and professional mariner recruitment and retention. We also interviewed NOAA Corps officers of NJAC, professional mariners of MOAC, and unions that represent NOAA professional mariners to obtain their perspectives on the factors that may affect recruitment and retention. These interviews are not generalizable but provide insights on factors that affect recruitment and retention of NOAA mariners.

To examine OMAO efforts to address NOAA Corps and professional mariner recruitment and retention, we reviewed relevant NOAA documentation including retention incentive memoranda, descriptions of the NOAA Corps' rotational staffing pilot, and a contract award to support NOAA Corps advertisement and recruitment. In addition, we interviewed NOAA mariners who are members of employee groups (NJAC and MOAC) to obtain their perspectives on actions OMAO is taking to improve recruitment and retention. We also evaluated the extent to which OMAO is undertaking strategic workforce planning by assessing the extent to which OMAO has implemented NOAA's Workforce Planning Policy.

To identify approaches other maritime organizations have taken to recruit and retain mariners, we interviewed MSC, the Corps, UNOLS, and five private shipping management companies. We selected MSC and the Corps for their federal maritime operations mission. We reviewed MSC and Corps documentation relevant to hiring and retention, such as MSC's plan for increasing the size of its workforce and the Corps' hiring and retention incentive policy. We selected UNOLS for its focus on oceanographic science research. Additionally, we reached out to the seven private shipping management companies that have maintained ship management contracts with the Maritime Administration since 2016, interviewing representatives of all five that responded to our request for an interview.

We conducted this performance audit from July 2023 through July 2024 in accordance with generally accepted government auditing standards. Those

standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

List of Addressees

The Honorable Maria Cantwell
Chair
The Honorable Ted Cruz
Ranking Member
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Bruce Westerman
Chairman
The Honorable Raúl M. Grijalva
Ranking Member
Committee on Natural Resources
House of Representatives

The Honorable Sam Graves
Chairman
The Honorable Rick Larsen
Ranking Member
Committee on Transportation and Infrastructure
House of Representatives

We are sending copies of this report to the appropriate congressional committees, the Secretary of Commerce, the Secretary of Defense, the Secretary of Transportation, the Secretary of Homeland Security, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

Appendix I: Comments from the Department of Commerce



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Chief Financial Officer and
Assistant Secretary for Administration
Washington, D.C. 20230

June 14, 2024

Ms. Heather MacLeod
Director
Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Ms. MacLeod:

Thank you for the opportunity to review and comment on the Government Accountability Office's (GAO) draft report, *NOAA Mariners: Actions Needed to Develop a Strategic Workforce Planning Process* (GAO-24-106958).

The Department of Commerce agrees with GAO's recommendation directed to the National Oceanic and Atmospheric Administration. Enclosed is our response to the draft report.

Should you have any questions, please contact MaryAnn Mausser, GAO Liaison, at (202) 482-8120 or MMausser@doc.gov.

Sincerely,

JEREMY PELTER Digitally signed by JEREMY PELTER
Date: 2024.06.14 11:56:48 -0400

Jeremy Pelter
Deputy Assistant Secretary for Administration,
Performing the non-exclusive functions and duties of
the Chief Financial Officer & Assistant Secretary for
Administration

Enclosure

Department of Commerce
National Oceanic and Atmospheric Administration
Response to the GAO Draft Report Entitled
NOAA Mariners: Actions Needed to Develop a Strategic Workforce Planning Process
(GAO-24-106958, May 2024)

General Comments

The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) appreciates the opportunity to review the Government Accountability Office's (GAO) report on actions needed to develop a strategic workforce planning process for Civilian Professional Mariners (CIVMARS). NOAA appreciates GAO's assessment of trends in the U.S. Merchant Maritime industry during what the U.S. Department of Transportation's Maritime Administration (MARAD) calls a "global mariner shortage," and in particular, how those challenges impact NOAA's mission. The report's discussion of NOAA in competition with other U.S. operators vying for the same pool of credentialed and qualified mariners will help the NOAA Office of Marine and Aviation Operations (OMAO) guide future planning in steering this coveted group of skilled professionals to NOAA.

The increased shore leave accrual and expansion of the 2:1 ratio model for rotational assignment schedules aboard ships have significantly improved the work-life balance challenge identified six months into this GAO engagement.

NOAA's Office of Human Capital Services (OHCS) and OMAO's Marine Operations Advisory Committee, comprised of rank and file actively sailing CIVMARS in NOAA, are collaborating on a pay study to examine how NOAA pay rates compare to private industry maritime pay. This was previously done in 2022, but the results were inconclusive other than for other federal operators.

Historically, return on investment for AB-Mate advancement programs has been low as people depart NOAA once they get licensed to be bridge officers. In the past 15 years, NOAA has had 4 Masters retire, one top-out and move to a Pilot job, one Master was removed, and one licensed Master remains as a member of NOAA's relief pool but will not accept command at sea.

NOAA Response to GAO Recommendations

The draft report has one recommendation pertaining to NOAA.

Recommendation 1: "The Director of OMAO should develop and implement a workforce planning process that covers both the NOAA Corps and professional mariners and incorporates key principles of effective strategic workforce planning."

NOAA Response: NOAA agrees with this recommendation. The Workforce Plan should ensure a strong and capable organization to meet evolving national needs. It should involve assessing the current and necessary workforce strength to carry out NOAA's mission, including operating fleets of ships, aircraft, and uncrewed systems for collection of data essential to NOAA's science and services. Informed by NOAA's 2016 Fleet Plan (currently being updated) and 2022 Aircraft Plan, the Workforce Plan should outline strategies for growth over the next decade, emphasizing specialized scientific and operational expertise. It must detail methodologies for determining required NOAA Corps and civilian strength annually until FY 2030, incorporating recruitment, retention, diversity promotion, and workplace respect initiatives to achieve and sustain this strength.

Additionally, the planning process should integrate effective strategic workforce planning principles to enhance foresight amidst staffing challenges. This includes establishing clear onboarding processes, detailed career maps, and updated training matrices for shipboard positions to address attrition and meet identified global mariner shortages, aligning with MARAD's objectives.

GAO Contact Information

For more information, contact: Heather MacLeod, Director, Homeland Security and Justice, MacLeodH@gao.gov, (202) 512-8777.

Sarah Kaczmarek, Acting Managing Director, KaczmarekS@gao.gov, (202) 512-4800.

A. Nicole Clowers, Managing Director, Congressional Relations, ClowersA@gao.gov, (202) 512-4400.

Staff Acknowledgments: Ben Atwater (Assistant Director), Mara McMillen (Analyst-in-Charge), Nasreen Badat, Madeline Barch, Eric Hauswirth, Michele Fejfar, Tracey King, Steven Lozano, and Meghan Nazareno made key contributions to this report.

Connect with GAO on [Facebook](#), [Flickr](#), [Twitter](#), and [YouTube](#). Subscribe to our [RSS Feeds](#) or [Email Updates](#). Listen to our [Podcasts](#).

Visit GAO on the web at <https://www.gao.gov>.

This work of the United States may include copyrighted material, details at <https://www.gao.gov/copyright>.

Endnotes

¹Pub. L. No. 117-263, § 11709, 136 Stat. 2395, 4159 (2022).

²Officers in the NOAA Corps may be mariners or aviators. This report focuses on NOAA Corps mariners.

³Pub. L. No. 117-263, at § 11706, 136 Stat. at 4157.

⁴Agencies may use direct hire authority for certain jobs when the Office of Personnel Management determines that a critical hiring need or severe shortage of candidates exists. Direct hire authority expedites hiring by eliminating competitive rating and ranking, veterans' preference, and "rule of three" procedures, which requires qualified candidates to be listed in rank order and managers to select from among the top three available candidates.

⁵NOAA Workforce Planning Policy, NAO 202-1103, Issued Oct. 9, 2007.

⁶GAO, *Human Capital: Key Principles for Effective Strategic Workforce Planning*, [GAO-04-39](#) (Washington, D.C.: Dec. 2003).

⁷Mariners may also be employed by private companies through other Maritime Administration contracts, such as General Agent Agreements.