

Executive Summary

Determinants of strategic sealift readiness include the availability of appropriately qualified mariners as well as recognition of their willingness to serve when called upon. Current estimates indicate a shortage of mariners to support sustained sealift operations concurrently with commercial cargo movements to meet the nation's economic and national security needs. Furthermore, the mariner pool consists predominantly of civilians who are not required to report when called upon to serve and as such, a mechanism to measure their willingness to serve at critical times does not exist presently. Documentation related to mariner willingness to serve from past activations (in the early 1990s and 2000s) is not available for current scrutiny and analysis either from the commercial operators or the labor unions. Previous reports and studies have not made efforts toward measuring either mariners' willingness to serve or the appropriateness of their current compensation structure and hence, revealed past preferences of mariners' willingness to serve at times of national need have not been quantified.

The proposed Mariner Survey is crucial to MARAD and the DoD in estimating our ability to sustain the sealift surge operations and support the armed forces. Furthermore, the highly-contested nature of potential operating environments that we are likely to encounter today will be far more risk-prone than what the nation has experienced in the past. Various elements of the risk and the reward (compensation) available to mariners are listed below.

Mariner Risk Factors During National Need

*Government-owned vessels on a military mission: **Highest Level of Risk***

Inherent (dynamic work environment), higher operational tempo, military cargo and equipment, terrorist/nation-state attack

*Privately-owned vessels on a military mission: **Elevated Level of Risk***

Inherent (dynamic work environment), military cargo and equipment, terrorist/nation-state attack

*Privately-owned vessels engaged in commercial trade: **Lowest Level of Risk***

Inherent (dynamic work environment), terrorist/nation-state attack

Additional Compensation During National Need

*Government-owned vessels on a military mission: **Increased Level of Compensation Required by Contract***

- Second Seamen's War Risk Insurance Policy (minimum \$200,000.00)
- Bonuses for War Zone/Imminent Danger, Dangerous Cargo, Harbor and Vessel Attack

*Privately-owned vessels on a military mission supporting national need: **Not Guaranteed, Contract-based***

- War Risk Insurance – dependent upon the contract between vessel operator and union
- Bonuses – dependent upon negotiations between union and operators of

Summary of Merchant Mariner Risk and Compensation Factors

*Privately-owned vessels engaged in commercial trade: **Not Guaranteed, Contract-based***

Note that past mobilization events have indicated that mariners are called upon to perform more tours aboard ships, typically at least two. This increase in tours proportionately increases their risk but also increases their compensation.

Introduction

The risk to a mariner at sea is diverse and unrelenting. The work environment aboard ships both at sea and in port is dynamic and hazardous. At sea, even the most mundane tasks have an inherent element of risk due to the nature of being underway, far from any emergency medical response network. That risk is widely known and accepted by U.S. mariners, who have traditionally answered the call to service in peace and war. Although infrequent, there have been times of national need when a surge in strategic sealift requirements created a subsequent spike in demand and a deep draw from the pool of available credentialed mariners. Maritime labor responded admirably in the past to meet the increased demand, but today's environment presents a significant change in risk. The change in risk environment introduces uncertainty to the past assumption that a pool of mariners would be readily available and willing to crew the nation's Ready Reserve Force (RRF) and Strategic Surge Fleet, while maintaining the required labor force of mariners to meet commercial demand. In the event of a full-scale mobilization of the RRF and Strategic Surge Fleet, tremendous stress would be exerted on the labor force to meet demand. With a partial mobilization of the RRF and Strategic Surge Fleet, although not quite as amplified, the labor force would still be stressed. With these challenges in mind, it is critical that the Maritime Administration (MARAD) develop a means to determine willingness to serve, which is not captured in reports that strictly focus on numbers. Without a gauge by which to estimate willingness in addition to availability by the numbers, a significant element of confidence in MARAD's ability to meet mission requirements remains uncertain.

Background

Types of Mariner Risk

Seagoing careers are dangerous. The work performed by a mariner, if it were performed on land, would be considered very hazardous. The fact that mariners work at sea on an ever-moving vessel, often in extremely hazardous weather, only adds to the dangers and elements of risk. It is an inherently hazardous occupation, and mariners face these risks at all times, even when off-duty.

According to the International Labour Organization (ILO), routine everyday hazards common to all seafarers include falling overboard, slipping, tripping and falling on deck, from gangways or ladders, and constant lack of stable ground under feet. The ILO also lines out dynamic hazards faced during vessel operations, such as cargo movement in port and at sea, exposure to extreme weather, noise, and chemical substances.¹ A mariner's work can be considered one of the most dangerous occupations in the United States, as reported by the Bureau of Labor Statistics (BLS). Based on the index of relative risk, the most dangerous occupation belongs to seafarers. For example, commercial fishers are about four times as likely as truck drivers to be killed by a fatal work incident.² Although specific to fishers, the dangers can easily be correlated with the work performed by all mariners.

¹ International Labour Organization, *International Hazard Datasheets on Occupation – Seaman, Merchant Marine* (Geneva, Switzerland: ILO, 2000), p. 1-3, available at https://ilo.org/safework/info/publications/WCMS_113135/lang--en/index.htm.

² U.S. Bureau of Labor Statistics, *Compensation and Working Conditions* (Washington, DC: BLS,; BTS, 1997) p. 57, available at <https://www.bls.gov/iif/oshwc/cfar0020.pdf>.

Using metrics to depict the extent of risk that mariners face in their occupation is difficult. However, International Maritime Organization (IMO) statistics reported by Seafarers' Rights International show that of all casualties and incidents reported from 2015-2016, 86% were of a "serious or very serious" nature. Also, the frequency and severity of incidents could be understated depending on, "the degree of compliance by flag states with IMO requirements on reporting serious casualties which include those involving loss of life."³ Although safety regulations have resulted in a decline in the number of incidents over the past twenty years, the risk remains substantial due to the nature of the work and the dynamic environment in which it is carried out.

The inherent risks of a seagoing career are significantly amplified aboard vessels that support military missions. Deployments are usually longer, which increases the likelihood of incidents resulting in injury or death. Also, work aboard vessels supporting military missions demands tasks that are not typically performed aboard vessels engaged in commercial trade. Military equipment, vehicles, and machinery often require special handling with shipboard and shoreside equipment that is unique to military operations. Complicated movements of military cargo differ substantially from a standard container movement or a commercial car-carrier operation. Where a shoreside gantry crane that is tailor-designed for container operations will simply extract a container from a vessel, specialized equipment like wire rope slings, chains, or heavy steel spreaders is needed to lift a helicopter or a tank out of a cargo hold. Where crew aboard a commercial car carrier ship simply observe the vehicles being driven down a ramp and off the ship akin to a car driving out of a parking garage, heavy military equipment requires special care, such as placing wooden boards under tank tracks or specific heavy gear to secure it. The weight, configuration, and special nature of the military cargo involves more moving parts, enhancing and amplifying the dynamic element of risk. Additionally, military cargo movements are often performed at sea rather than when secured alongside a pier or wharf, such as in-stream cargo operations or underway replenishments. Finally, RRF vessels that support military operations can carry extremely hazardous cargo, such as ammunition, missiles, bombs, and other ordnance, which also amplifies risk.

In times of conflict or war, RRF vessels are tasked with functions that increase mariner risk even further, in addition to longer deployments. The Navy's Required Operational Capabilities (ROC) and Projected Operational Environment (POE) details generic requirements for the RRF strategic sealift ships. These requirements include deploying with assault follow-on echelon of an amphibious Marine Air-Ground Task Force and the deployment of heavy mechanized Army and Marine Corps combat units. Additionally, the ROC and POE document lines out tasks like, "Detect, Identify, Localize and Track Surface Ship Targets" and "Disengage, Evade and Avoid Surface Attack" and "Support/Conduct Search and Rescue Operations in a Combat Environment."⁴ Transporting cargo of this nature and performing such tasks during times of conflict or war introduces an element of risk that the vessel will be targeted by a foreign military or terrorist organization.

³ "Accidents at Sea," Seafarers' Rights International, available at <https://www.seafarersrights.org/seafarers-subjects/deaths-and-injuries-at-sea/accidents-at-sea/>.

⁴ Department of the Navy (DoN), *OPNAV INSTRUCTION 3501.199C - Required Operational Capabilities and Projected Operational Environment for Strategic Sealift Ships* (Washington, DC: DoN, December 17, 2017), p. 3-4, available at <https://www.secnav.navy.mil/doni/Directives/03000%20Naval%20Operations%20and%20Readiness/03-500%20Training%20and%20Readiness%20Services/3501.199C.pdf>.

The high operational tempo of conflict or war, which is further complicated by the diverse shoreside requirements of the military port operations, puts additional strain, and thus risk, on mariners. In contrast, commercial port operations typically run on a standard cyclical and predictable schedule. Although commercial schedules frequently are interrupted by weather, the repetitive nature of commercial operations has created tremendous resilience with carriers and port operators, allowing them to adjust to interruptions and return to normal service quickly. The unpredictable nature of downstream cargo movement during military operations creates a high-paced and demanding work environment that stresses the mariners, who are required to comply with work-rest hours mandated by international standards. The work-rest mandate forces vessel crews, which have become smaller and smaller over time, to work ad-hoc schedules, affecting rest and relaxation, and increasing crew fatigue.

Conflict-laden environments involving nations other than the U.S. can also affect mariner risk. Operating in these environments increases risk tremendously, such as commercial vessels transiting waters rampant with pirate or rebel activity, like the Horn of Africa and the Strait of Bab el-Mandeb. A perfect example of that risk is shown by a recent attack on a High-Speed Transport Vessel, the HSV2 Swift. While transiting the Strait of Bab el-Mandeb at night, the vessel was victim to an anti-ship missile attack, which was claimed by Houthi rebels. The missile struck the Swift's navigation bridge, igniting a massive fire and resulting in a twenty-five million-dollar (\$25,000,000.00) claim.⁵ Although registered in the United Arab Emirates at the time, the vessel was formerly on long-term charter to the U.S. Navy's Military Sealift Command. It served as a proof-of-concept vessel for the U.S. Navy's Expeditionary Fast Transport Ships (T-EPFs), which frequently operate in the Strait of Bab el-Mandeb. With distinct similarities between T-EPFs and the Swift, one of the Navy's current vessels could easily have been the victim. Finally, proximity to Iranian waters for vessels transiting the Strait of Hormuz introduces risk, as evidenced recently by a British Oil Tanker seized by Iranian authorities (reported by multiple open-source news outlets.) Today's risk environment has introduced a level of uncertainty with regard to mariner safety and willingness to serve.

Mariner Compensation

U.S. mariners are generally well compensated, especially when compared to the average worldwide mariner salary. For example, International Labour Organization documents show that the "minimum monthly basic wage figure" for an Able Seaman (a junior-level position) was six hundred fourteen dollars (\$614.00).⁶ Although this figure is set to rise to six hundred forty-one dollars (\$641.00) in January of 2021, U.S. mariners, as shown below, are substantially higher paid than their international counterparts. However, the highly-skilled U.S. mariners are very likely to find land-based occupations in the U.S. that require similar skills, but with significantly less dynamic risk environments and more stable work schedules and comparable salaries. This could present a draw away from the seagoing occupations in favor of the more stable occupations ashore.

⁵ Insurance Marine News, *MS Amlin lead insurer on HSV2 Swift attack, reports claim* (London, UK: February 13, 2017), available at <https://insurancemarinenews.com/insurance-marine-news/ms-amlin-lead-insurer-on-hsv-2-swift-attack-reports-claim/>.

⁶ International Labour Organization, *Updating of the Minimum Monthly Basic Pay or Wage Figure for Able Seafarers (February 2014)*, (Geneva, Switzerland: ILO, February, 2014), p. 2, available at https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/meetingdocument/wcms_250409.pdf.

According to the U.S. Bureau of Labor Statics (BLS), the median annual wage for water transportation workers is \$59,250 in May 2020. A look at the pay for occupations demanding similar skills - heavy truck drivers (\$47,130), heavy vehicle and equipment service technicians (\$53,370), stationary engineers and boiler operators (\$60,440), and railroad workers (\$64,680), reveals that mariners do not necessarily have an advantage in pay.⁷ Additionally, mariners must work seven days a week at sea. In port, they are unable to spend much time ashore because modern cargo operations are far more efficient, and vessels spend little time in port. This could contribute to the draw away from a sea-going career in favor of shoreside careers.

A look at the BLS Occupational Outlook Handbook⁸ for median pay of more senior-level mariners such as captains (\$77,130) and ship engineers (\$75,990) reveals pay levels above the median, but these positions are generally fewer in number. Typically, a vessel will have only 7-8 officers and 12-14 unlicensed mariners; so fewer positions are available at the more senior levels.

In addition to basic salary, mariners who serve onboard RRF vessels during periods of activation are subject to bonuses and increases in pay to compensate for the additional risk above that of standard commercial operations. For example, bonuses can be paid when a vessel carries hazardous explosive cargo, transits high-risk waters or war zones, and when attacks occur.

A collective bargaining agreement proposal for FY20 between an operating company and a maritime union revealed that these bonuses **shall** be paid. Specifically, when a vessel carries dangerous cargo, defined as munitions or dangerous explosives of fifty long tons or more, mariners are to receive an additional ten percent (10%) of their base wages commencing the day the cargo is loaded until the day the cargo is discharged. Additionally, while a vessel operates in or transits waters designated by an appropriate U.S. Agency as a war zone, mariners are to receive a bonus equal to one hundred percent (100%) of their base wages on a day for day basis. For transit and operations in an “imminent danger zone” mariners will receive a bonus commensurate with that of bonuses paid to military personnel or DoD Civilian Mariners who operate in the same area. If a vessel is moored in a harbor, and an attack occurs in that harbor, a bonus of seven hundred dollars (\$700.00) is paid to each mariner. If the vessel itself comes under attack, a bonus of one thousand one hundred and sixty dollars (\$1,160.00) is paid.⁹

Mariners can also receive benefits in the form of insurance. The Maritime Administration (MARAD) requires ship managers contracted to operate RRF vessels to obtain a Second Seamen’s War Risk Insurance policy. This benefit provides each mariner with insurance coverage of two hundred thousand dollars (\$200,000). This policy covers events such as loss of life, disability, and damage to mariners’ personal effects, when directly and proximately caused by risks of war and warlike operations. Mariners working aboard vessels engaged in commercial trade may receive similar compensation, but that data is not readily available. In general, a Protection and Indemnity Club that provides an insurance policy to a vessel may require the vessel owners to obtain similar policies, such as war risk insurance. These cases are individually focused and based on the nature of the trade, the area of operation, and the geo-political climate.

⁷ These data points are derived from the Bureau of Labor Statistics website, *Occupational Outlook Handbook*, for each category of occupation, available at <https://www.bls.gov/ooh/>.

⁸ U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook*, (Washington, DC: BLS, April 9, 2021), available at <https://www.bls.gov/ooh/>.

⁹ This information is drawn from a tentative Collective Bargaining Agreement document provided to MARAD as part of a ship manager’s contract for RRF vessels. Further information is available on request due to proprietary nature of these agreements.