

Executive Summary

Mobilizations of Ready Reserve Force (RRF) and vessels that support strategic sealift fall into three main categories of full-scale and partial mobilizations, and sustainment operations. Each category presents its own significant challenges to crewing. Understanding the makeup and willingness of the sealift qualified mariner workforce is essential to planning efforts and ensuring readiness from a crewing perspective in the event of any mobilization.

Previous mobilizations cannot be relied upon to determine the willingness of mariners to serve on RRF or other vessels supporting sealift in a time of national need. The mariner pool has drastically changed since previous mobilizations due to the steady decline of the U.S. flagged commercial fleet as well as additional barriers to mariners, such as the increasing costs of maintaining a Merchant Mariner Credential. These factors, combined with generational changes and a heightened risk environment, lead to uncertainty in both the composition and willingness of the mariner pool.

Although U.S. credentialed mariners have answered the call in the past, it is not a certainty today. Reliable and accurate historic information is not available on those who did answer the call in the past. Revealed preference of mariners from previous times of need, such as Operations Desert Shield and Desert Storm, cannot be determined due to the nature of record keeping both in government and industry. MARAD contacted partners in maritime labor unions regarding the required information, and data on mariner preference is not available from maritime labor and industry. Paper records were kept in the past, and in the modernization efforts, historical data was lost or not carried over. Data that is recoverable would also require considerable effort by external stakeholders to obtain and analyze. Analysis of this past data would also be of little value due to the substantial change in make-up of the mariner pool. Additionally, internal government records searches revealed no reliable information on mariner preference. Extensive research of government archives would be required at great expense and time, and as in the case of any information from maritime labor, the information obtained would be of little value due to the change in risk environment.

Mobilization of Ready Reserve Force

Mobilization of the Ready Reserve Force can be characterized into three main areas: full-scale mobilization, partial mobilization, and sustainment. Each represents challenges to the task of crewing, and no two mobilization scenarios are alike. These scenarios would be faced if the scale of military requirements could not be met by commercial ocean carriers, or the operating environment was not favorable to standard commercial vessels (i.e. war zone or imminent danger zone where commercial vessels are not able to transit.)

A full-scale mobilization would entail activation of a majority of the 41 RRF vessels and 13 MSC Surge Sealift vessels to support strategic sealift. Depending on the nature of the requirements, this mobilization could be required in a very short timeframe. Conversely, the full-scale mobilization could also be phased over a period of months, providing more time to address the challenge of crewing. Regardless of the timeline, a full-scale mobilization would create the most significant challenge to crewing for MARAD, vessel operators, and maritime labor unions.

Partial mobilization and sustainment operations present fewer initial challenges to crewing, but still present their own difficulties. Partial mobilization would entail activation of only a portion of the RRF. It would mean a requirement to crew several vessels on short notice, and such a surge requirement would put a strain on the mariner workforce. Sustainment operations, although considered steady state from an operational planning perspective, would still present challenges to crewing after the first few months. This scenario would exist after a mobilization has occurred, but regular service has been established in lieu of a surge of vessel activity. The continued RRF vessel activity in addition to the regular commercial vessel operations would continue the increased mariner demand.

Mariner Requirements During Mobilization

Mobilization of the Ready Reserve Force would put a great strain on the mariner workforce. As detailed in the MWWG Report, mobilization of the RRF would require maritime labor unions to draw from the pool of mariners engaged in active commercial service. The unions have indicated that this would substantially change the standard work rotations for mariners, increasing the number of work days at sea by more than 50%.¹ Lengthening crew

¹ Maritime Workforce Working Group (MWWG), Maritime Workforce Working Group Report (Washington, DC: DOT/MARAD, 2017), p. 24, available at <https://www.maritime.dot.gov/sites/marad.dot.gov/files/docs/mariners/1026/mwwgreport-congress-finalr3.pdf>.

rotations to meet the demand for the RRF, while still meeting commercial demand, adds a substantial increased exposure to risk for each mariner, regardless of the mobilization scenario. Simply stated, as mariners perform more tours, their exposure to risk increases proportionally.

When considering the risk added if a mariner works aboard vessels that support a military operation, the exposure to risk is significantly amplified. If a mobilization scenario resulted in a high level of attrition (i.e. mariners not returning to work after a brief time off, or mariners resigning after one tour), or losses due to significant combat events, then further strain would be put on the mariner workforce with commensurate increase in risk.

Crewing

U.S. Mariners have traditionally answered the call to serve. The importance of the U.S. Merchant Marine to military operations from World Wars I and II to *Operation Enduring Freedom* and *Iraqi Freedom* are well documented. Whether the need to crew ships numbering in the thousands (WWII) or hundreds (more recent conflicts,) the U.S. maritime labor workforce has always met the mission. This was not without challenges, and with the change in risk environment, the willingness of U.S. mariners to answer the next call is uncertain. The well-known decline in the number of ships in the U.S. flag and U.S. Government-owned fleet has dwindled the pool of mariners who are credentialed to crew RRF vessels. If mobilizations as described in this paper occur, it is unclear if the U.S. maritime workforce would be willing to serve based on the comparison of modern risk to compensation. Past challenges to crewing the RRF could be amplified today by factors like the increased risk environment, the ability to make a similar wage in a shore-based occupation, and a vibrant economy with historically low unemployment rates.²

Crewing Challenges

Challenges to crewing vessels supporting military operations create dangerous situations for America's warfighters; delays in ships sailing create delays in getting critical supplies to the battle. For example, during the Vietnam conflict, crew shortages during the three-year period

² In 2019, unemployment rates were at the lowest rates since 1968. These rates are lower than during any of the previous two mobilization periods (1990-1992 and 2001-2004). Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey*, available at https://data.bls.gov/timeseries/LNU0400000?years_option=all_years&periods_option=specific_periods&periods=Annual+Data.

ending December 31, 1968 resulted in delays in 42% of the scheduled NDRF/RRF sailings. Arrivals were delayed by weeks, and critical cargo such as ammunition was delayed in getting to the warfighters. These crew shortages were partly attributed to mariner reluctance to sail on RRF vessels heading to the conflict area in Southeast Asia.³

Another example of challenges faced when crewing the RRF for military operations came in August of 1990. To support *Operation Desert Shield/Desert Storm (ODSS)*, MARAD activated fifty-five vessels for a first wave of cargo movement. In this initial wave of activations, there were six ships that incurred delays due to initial shortage of crews, resulting in late delivery of critical cargo to warfighters.⁴ This initial activation was an overall success, “but a second wave of thirty-four vessel activations showed the pool of available qualified mariners had run dry. MARAD was forced to rely on a cadre of mariners from the Great Lakes who became available during the winter months when the Great Lakes were frozen over.”⁵ Had the season on the Great Lakes run longer due to an unusually warm winter, the situation would have been much worse. In today’s regulatory environment, those mariners would likely not be as great in number due to enhanced worldwide requirements for international voyages that do not apply to Great Lakes mariners. Additionally, Great Lakes vessels typically sail with a permanent crew with one mariner for each position. A pool of relief mariners is not utilized unlike the oceangoing vessels in international commercial trade.⁶

For *Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF)*, the challenges to crewing were also substantial, but the U.S. maritime labor workforce again answered the call. Additional requirements such as military-specific training, medical fitness, inoculations, and security clearances were faced by mariners working aboard the RRF vessels.⁷ Commercial mariners do not require these additional efforts to remain qualified, and meeting these requirements entails mariners spending their own time and funds to attend training courses while in an unpaid status. When unions detail mariners to RRF ships, these additional requirements become very challenging to meet, especially when a surge of mariners is required on short

³ Vice Adm. A.J. Herberger, USN (Ret.), Kenneth C. Gaulden, Cdr. Rolf Marshall, USN (Ret.), *Global Reach: Revolutionizing the Use of Commercial Vessels and Intermodal Systems for Military Sealift, 1990-2012*, (Annapolis, MD: Naval Institute Press, 2015), p. 68.

⁴ *Ibid*, p. 99.

⁵ *Ibid*, p. 323.

⁶ MWWG, p. 89.

⁷ I.M. Systems Group, Inc., Marine Design and Operations, Inc., *The RRF in Operation Iraqi Freedom: Lessons Learned*, (Washington, DC: DOT/MARAD, February 6, 2004), p. 114.

notice. The initial sealift surge mission was mostly carried out by the U.S. government-controlled fleet, including chartered commercial vessels, which carried a majority of the military cargo. Overall, the number of activated government-owned and time-chartered ships were well-supported by the pool of mariners. At the end of OEF/OIF, only about 2 percent of all breakbulk and roll-on/roll-off cargo was carried by RRF or MSC sealift vessels.⁸ Despite this low figure, the critical role of the RRF then and early on should not be understated. It is important to note that this conflict posed a minimal threat to shipping in general in the Persian Gulf. With relatively low maritime security threat, commercial vessels were free to carry most of the military cargo into theater. If the threat to commercial vessels were higher, the RRF would likely have been utilized more. In the event the theater became more unstable, uncertainty is introduced with mariner willingness.

Today, we see an estimated shortage of qualified mariners to crew the RRF in the event of sustaining a mobilization. According to a Rand Corporation study in 2019, “There is a national shortage of qualified personnel that directly affects the ability to man the surge sealift fleet – mariner manning may be sufficient for initial activation, but activation crews may have long waits for a replacement crew, especially for steam engineers.”⁹ Further, the Rand study highlighted that analysis of a MARAD Command Post Exercise revealed, “there are enough mariners to conduct a full-scale breakout, but sustained operations past 180 days will be a crewing challenge.”¹⁰ This estimated shortage could easily be exacerbated by a risk environment the likes of which we have not seen since World War II, when U.S. ships did not have free reign of the world’s waterways.

By the Numbers

Total activations for RRF mobilizations vary substantially. The numbers and types of vessels in the RRF has changed tremendously since the Vietnam conflict. Along with that, the amount and types of cargo transported has also changed. As the number of vessels in the RRF has declined, the pool of available mariners has also dwindled. Tracking the actual number of mariners who served on vessels in these conflicts is an exercise in futility due in part to record

⁸ Herberger, Gaulden, and Marshall, *Global Reach*, pp. 316-318.

⁹ Bradley Martin, Roland J. Yardley, *Approaches to Strategic Sealift Readiness*, (Washington, DC: Rand Corporation, 2019), pp. 38, 46.

¹⁰ Martin and Yardley, *Approaches to Strategic Sealift Readiness*, p. 37.

keeping practices of those years by the labor unions who detailed mariners to the ships. Initial numbers of crew required to activate vessels can be estimated; however, the tracking of reliefs due to illness, injury, personal matters, resignation, refusal to sail, and other reasons becomes very challenging. Although unions maintain individual files for each mariner with employment history, data mining is not feasible. To add to the obstruction, there is no single system used to track the deployment of mariners to vessels. Union officials have indicated that any effort to collect such data would be monumental, requiring a great deal of time and resources.

For ODSS, 78 RRF vessels were activated, and for OEF/OIF, 40 vessels were activated. With an average of 32 crew members per RRF vessel, the total required number of mariners was approximately 2,496 for ODSS and 1,280 for OEF/OIF.¹¹ These crewing figures are only estimates/averages and do not account for any reliefs that were made during missions or upon return to the United States prior to additional voyages. Details on the actual number who volunteered but did not serve are also not readily available. This is due to the seniority-based system used by maritime labor unions to select and detail mariners to vessels. If a mariner submits their name for a job, but is not selected, there is no record kept. Unions generally do not keep those records, and any data that they do maintain, would be difficult, if not impossible, to mine. Additionally, any data available would likely be proprietary or unreliable.

Conclusion

Over the past several decades, certainly since the end of World War II, the U.S. Navy, RRF, and U.S. commercial vessels have operated uncontested on waters around the world. That freedom of movement and open sea lanes of communication have recently been tested, and it has captured the attention of military officials and commercial shippers alike. The likelihood of vessels entering areas of contested waters will only increase, regardless of the source of the imminent threat, whether that be from terrorist activity, piracy, or nation states. Increased pirate activity in the Horn of Africa (HOA) region, threats in the Red Sea and Bab al Mandeb Strait, military threats by Yemen, and now most recently tensions flaring with Iran in the Strait of Hormuz, are all examples of the increasing threat as well as great power competition from nations like China and Russia. The theme throughout for military planners has been an assumption that mariners will answer the call. However, it is very difficult to determine the

¹¹ I.M. Systems Group, Inc. and Marine Design and Operations, Inc., *The RRF in Operation Iraqi Freedom: Lessons Learned*, pp. 9-10.

future force and mariner pool based on past examples. The United States has not lost a vessel or mariners in conflict for a very long time, and with today's maritime environment, that threat is very real.

Risk versus reward (compensation) for U.S. mariners today would require further study to determine a level of confidence in mariner willingness to crew the U.S. Government organic sealift fleet in the event of a mobilization, especially in the long term. The recent exercise vessel activations for Turbo Activation 2019-Plus (TA19+), although successful in the short term, only gauged a very small snapshot of time. The operators responsible for providing additional crew above the standard Reduced Operating Status crews were successful. However, this success cannot be guaranteed in the case of an actual mobilization. When crewing for exercise activations, it is widely known by mariners and unions that the vessels will remain active only for a short period of approximately 10 days. Uncertainty in mariners' actual willingness to serve longer rotations is introduced because the crew accepts these exercise activation positions knowing fully well of their very short-term duration. Additionally, the TRANSCOM Comprehensive Report for TA19+ revealed that several ship masters expressed concerns over the proficiency and experience of crew who volunteered for these positions.¹² This could indicate that more experienced mariners were not interested in RRF missions; however, this issue needs further detailed study.

Although previous mobilizations were ultimately successful overall, the crewing challenges that were faced cannot be ignored. MARAD and DoD should not attempt to establish policy based on past success alone, as this could lead to elevated levels of risk to mission accomplishment. Although the MWWG report and MARAD's tabletop Breakout CPX showed that MARAD would have enough mariners by number to mobilize the surge operations, those numbers do not reflect or portray mariners' willingness to sail. MARAD should determine a way to gauge mariner willingness to serve in times of national need, and establish a way to gain confidence in the data that shows raw numbers of mariners.

¹² United States Transportation Command (USTRANSCOM) J37, *Comprehensive Report for Turbo Activation 19-Plus*, (Scott Air Force Base, Illinois: TRANSCOM, December 16, 2019), p. 10, available at <https://www.ustranscom.mil/foia/docs/USTRANSCOM%20Turbo%20Activation%2019-Plus%20AAR.pdf>.