

Midshipman Sayanna Pillay, assigned to U.S. Merchant Marine Academy, takes bearing with gyro repeater on USS *Gerald R. Ford*, underway in Atlantic Ocean, March 25, 2022 (U.S. Navy/Nolan Pennington)



# Military Sealift Command

## Joint Maritime Mobility

By David Bassett and James Regan

**M**ilitary Sealift Command (MSC) provides assured logistics to the joint force via sea during strategic competition, crisis, and conflict at the timing and tempo of demand. As the naval component to U.S. Transpor-

tation Command (USTRANSCOM), MSC deploys and sustains the joint force through a blended government-commercial solution of government owned/commercially operated sealift and commercially chartered vessels and services. Central to this logistics mission are MSC's responsibilities to man, train, and equip a force of approximately 130 vessels (government and contractor owned), 70 percent of which

are ready for tasking or on mission at any given time.

MSC provides a high-value service to the U.S. Navy and joint force (approximately 1 percent of manpower, 2 percent of budget, and about 20 percent of the Navy fleet), and this business-savvy organization is constantly evolving to meet challenges across an increasingly contested maritime environment. Long focused on efficiency in force

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employment, MSC is evolving to focus on effectiveness in force development and force generation to assure readiness for strategic competition, crisis, or conflict. The most important lines of effort to assure MSC support to joint force mobility are encouraging seafaring professions, training U.S. mariners to operate in contested environments and integrate seamlessly with allies and the joint force, and accelerating development of a blended commercial/government/allied fleet with the ability to operate in contested environments. These are crucial steps to build and reinforce the strategic advantage afforded to the United States as a maritime nation.

### Foster a Seafaring Populace

The heart of MSC's global enterprise are the Americans who sail ships in service to the fleets and joint force. MSC employs seafarers of the United States Merchant Marine (USMM) to operate commercial ships, naval auxiliaries, and other government vessels near U.S. shores and across the globe. A sector of civil transportation that can be mobilized for war efforts, the USMM has supported trade, travel, and defense of the Nation since the Revolutionary War and remains critical to national defense strategies.<sup>1</sup> In 1775, mariners ran supplies through blockades, raided British commerce under letters of marque, captured war prizes such as the HMS *Margaretta*, and seeded the nascent Continental Navy. In peace, mariners facilitate free flows of trade and commerce to enrich the United States, highlighting the dual utility of their profession. Before John Paul Jones became a naval commander, he was a ship captain in the Merchant Marine. Alfred Thayer Mahan understood and professed that merchant mariners and peaceful shipping were the "necessity" or *raison d'être* for maintaining a Navy.<sup>2</sup>

The Department of Defense (DOD) relies on USMM for military sealift and joint mobility support. These highly qualified, credentialed professionals possess years of experience and specialized training. Officers are licensed by the United States Coast Guard and typically

hold post-secondary degrees in their field. Unlicensed personnel are certified in the broad range of technical skills needed to operate and maintain complex systems afloat. The U.S. mariners who perform MSC/naval transportation support missions, enable joint force mobility, and serve the Navy's fleets are the finest in the world, highly trained, and licensed to national and international standards. Ships and individuals undergo a continuous cycle of audit, inspection, and certification by the Coast Guard and the American Bureau of Shipping, the premier global classification society. This model of third-party administration and oversight is the common denominator of contemporary maritime commerce—notably different from deploy and redeploy, self-train, and self-certify models employed by Active-duty sea Services.<sup>3</sup>

Military Sealift Command links DOD with the USMM. MSC direct-hires civil service mariners as government employees and contracts with private shipping firms for contract mariners to operate ships on government missions. The command is the largest deep-sea employer of U.S. mariners today, though this was not always the case. In the mid-20<sup>th</sup> century, the preponderance of global shipping flew the U.S. flag, and government business was a small portion of national maritime activity. Over 70 years, the U.S. flag commercial fleet shrank, and the industrial base with it—the net result of legislation, policy, and market competition. As international trade and U.S. gross domestic product exploded throughout the 20<sup>th</sup> century, the USMM paradoxically lost both ships and market share, shrinking from nearly 6,000 ships to fewer than 200.<sup>4</sup> In 2020, U.S.-flagged vessels engaged in international trade comprising less than 0.2 percent of global capacity. Over decades, steady-state government maritime activities became a larger portion of the smaller maritime industrial base, and the DOD-USMM link appreciated in importance to both joint mission assurance and survival of the profession.

The number of U.S. merchant ships and merchant mariners has reached a critically low level. Government and

private corporations are increasingly challenged to find enough qualified personnel to meet day-to-day shipboard requirements. In this environment, large-scale sealift operations may come under significant risk as the "ability of the U.S. Merchant Marine to respond to major military contingencies worldwide is dependent on adequate U.S. flag resources, including a skilled U.S. maritime labor pool."<sup>5</sup> Competition for talent is fierce across many industries in 2022, seafaring included. Mariners are heavily recruited into cabotage-protected activities including petrochemical exploration/extraction and offshore wind power generation, which diverts candidates from the career tracks that enable joint mobility and fleet Service functions.

With the decline in USMM numbers, the ability to fulfill DOD functions is at risk. The Government Accountability Office, Department of Transportation, Center for Strategic and Budgetary Assessments, and RAND have published reports highlighting the issues associated with a shrinking number of U.S.-flagged ships and U.S. mariners. In 2020, the U.S. Maritime Administration assessed the USMM's ability to meet wartime mobilization needs, finding that Ready Reserve Force sealift manning had no surge margin. They warned, "Any further decline of the mariner workforce increases the risk of not having a sufficient number of mariners with appropriate experience and credentials to support sustained operations."<sup>6</sup> The subsequent effects of the COVID-19 pandemic, the "Great Resignation," and intensifying competition for seafaring talent suggest the supply-and-demand gap in mariner labor has not corrected course—and may not do so without concerted action. If the United States is to remain a maritime nation capable of projecting power across the seas, decisive steps are needed to assure a seafaring populace adequate for trade, travel, and national requirements.

The United States Merchant Marine Academy (USMMA), located at Kings Point, New York, is one of five Federal Service academies and the sole Federal maritime college with a postgraduation service obligation. USMMA graduates

are commissioned into uniformed service and/or obligated to sail on their license. In June 2022, Secretary of Transportation Pete Buttigieg addressed the graduating class at USMMA, calling it a “deeply and enduringly important part of economic and national security.” This school is an essential component of the future U.S. flag merchant marine. Strategic competition is under way, with China, the world’s largest maritime nation, as the pacing threat. We cannot achieve and sustain long-term advantage without an adequate USMM and a robust maritime industry.

As the U.S. maritime industrial ecosystem inches toward government monopoly and recruitment challenges intensify, the lessons of history and the influence of seapower on it must be remembered. Alfred Thayer Mahan described six fundamental elements of national sea power: geographical position, physical conformation, extent of territory, size of population, character of the people, and character of the government.<sup>7</sup> The United States enjoys nearly unparalleled advantage in Mahan’s first five elements—and therefore its status as a maritime nation and a global seapower is principally vested in the sixth. The United States identifies as a maritime nation and has underscored that commitment with legislation on several occasions in history.<sup>8</sup> When the United States fosters an environment for the USMM, its seafaring populace thrives, yielding sustainable strategic advantages in trade, travel, and defense while assuring sealift and global power projection.

### **Train U.S. Mariners**

The U.S. mariner workforce must be properly trained to function safely at sea, serve effectively in contested environments, and integrate seamlessly with the joint force when needed. Responsibility for this function was assigned to the Department of Transportation’s Maritime Administration (MARAD) in the 2020 National Defense Authorization Act. MARAD, in coordination with USTRANSCOM and MSC, is responsible to draft and publish a 5-year plan “to recruit, train, and retain merchant mariners” in the Federal Register.<sup>9</sup> MSC

recognizes the importance of this assignment and supports the MARAD effort.

Throughout most of American history, the Nation benefited from a capable and effective mariner force ready to move cargo; conduct logistics; and resupply forces in peace, conflict, and crisis. U.S. mariners are Coast Guard-credentialed seafarers who work at sea—often internationally. MSC’s hybrid model encompasses training to satisfy domestic requirements, international standards, and Navy-specific skill sets. Beginning in the 1960s, MSC trained mariners at a facility in Bayonne, New Jersey, proximate to the port of New York. In the 1970s, training shifted to Earle, New Jersey, to collocate with the Naval Weapons Station. The Earle training facility supported a wide range of activities, from cargo handling to firefighting and underway replenishment evolutions.<sup>10</sup> In addition, naval Reservists in the Merchant Ship Naval Augmentation Program were trained to perform and work with consolidation at sea (CONSOL), vertical replenishment, the modular cargo delivery system, the modular fuel delivery system, and astern refueling.<sup>11</sup> To be effective in their tasking, U.S. mariners have long blended core professional skills with those required by specialty missions.

Today, MSC mariners are trained at a variety of venues, including in-house training, military schools, and professional institutions (maritime academies, trade schools, and commercial training facilities). Following headquarters consolidation from Washington, DC, to Norfolk, Virginia, the MSC mariner training center relocated to Fort Eustis, Virginia, in 2019.<sup>12</sup> The MSC Underway Replenishment Training Center, located at Joint Expeditionary Base Little Creek–Fort Story in Virginia Beach, focuses on advanced fleet support logistics skill sets including arms, ammunition, and explosives skills such as ordnance movement, storage, administration, and equipment handling, and underway replenishment. Instruction for these unique skills is maintained organically within the organization. Experienced mariners drawn from MSC’s fleet serve as the primary instructors, and

these personnel periodically rotate back to shipboard service to ensure schoolhouse-fleet alignment is maintained.

Strategic competition requires MSC’s mariners to operate across multiple theaters in increasingly contested environments. Evolving from legacy “hub and spoke” logistics operations into a dispersed, agile, and maneuverable network requires new and revitalized skill sets. World War II-era tactics such as emission control, tactical maneuvering, and astern refueling are new again. Atop this foundation, mariners lay modern tactics, techniques, and procedures, including dynamic positioning, expeditionary vertical launch system reload, and maneuver in a communications-denied environment. Instruction and training are not only shore-based but also executed at sea. Fleet integration and command, control, and communications are critical for both Combat Logistics Force (CLF) vessels and commercial sealift and special missions.

### **Accelerate Future Fleet Development**

Since 1949, Military Sealift Command has provided sealift and ocean transportation for all U.S. military Services and other governmental agencies.<sup>13</sup> Today, many government-owned ships are at end-of-service life. Assuring sealift for national strategy and joint force sustainment requirements in a contested maritime environment requires a three-pronged recapitalization attack of service life extension, used ship purchase, and new ship construction. Industry and allied partnerships are also capable of generating logistics forces as needed to support treaties and security cooperation agreements. These ships will serve in a blended commercial-government network model to distribute logistics securely at the time and tempo of demand.

MSC’s major mission areas are combat logistics, service and command support, special missions, prepositioning, and sealift. The CLF is comprised of government-owned/government-operated oilers, dry cargo and ammunition, and fast combat support vessels; they deliver





Seaman Bobby J. Cunningham signals Military Sealift Command fleet replenishment oiler USNS *Rappahannock* (T-AO 204) during replenishment-at-sea aboard guided-missile destroyer USS *Gridley*, Philippine Sea, January 20, 2022 (U.S. Navy/Colby A. Mothershead)

at-sea sustainment to fleet combatants, allies, and partner nation vessels worldwide. Service and command support vessels provide towing, rescue and salvage support, medical support, and command and control facilities. Special mission ships enable oceanography, underwater surveillance, missile tracking, and submarine and special warfare operations. Prepositioning assets station combat cargo and ammunition in strategic global locations. Sealift vessels move military equipment (rolling stock and dry cargo) and fuel to meet joint force requirements worldwide. Collectively, these ships and mission areas serve the “5Rs” of logistics (refuel, rearm, resupply, repair, and revive).

Sixty new ships are programmed to join MSC’s fleet by 2040. At least 20 of these new vessels will be *John Lewis*-class

CLF oilers. The remaining vessels will serve varying functions across MSC’s five mission areas, including oceanography, tug and salvage, submarine tender, and intra-theater connectors. These ships will serve legacy functions with new hull designs, and many will replace ships designed and built during the Cold War.

The 49-ship organic sealift fleet currently maintained by MSC and MARAD has an average hull age of 45 years.<sup>14</sup> The over 9 million square feet of roll-on/roll-off (RO/RO) capacity that these vessels represent is a critical strategic asset to project the joint force in conflict or crisis. In fiscal year 2021, DOD directed inactivation of seven sealift ships and transfer of eight more RO/RO vessels from MSC’s surge sealift fleet to MARAD’s Ready Reserve Force. These ships, in dire

need of recapitalization, were recently USTRANSCOM’s top readiness concern.<sup>15</sup> Leading the recapitalization charge is the “buy used” approach. MARAD added two used RO/RO vessels, *Cape Arundel* and *Cape Cortes*, to the Ready Reserve Force just this year. It is authorized to purchase five more used ships, although tight market conditions for secondhand ships may present a challenge to this plan in the near term. The “build new” sealift program is another potential solution, but shipbuilding programs are often challenged by cost growth and schedule delay. Regardless of recapitalization mechanism (service life extension, buy used, build new), modern and secure communications systems will be required to achieve fleet integration and resilient command and control.



Civil Service Mariners use fire hose to extinguish simulated ship's engine room fire at Military Sealift Command Training Center East, on Joint Base Langley–Fort Eustis, Virginia, February 23, 2022 (U.S. Navy/Bill Mesta)

Equally important to vessel capacity is the capability to operate in austere, expeditionary, and contested maritime environments; this will be critical to achieve the 5Rs of secure sustainment across vast areas. Agility and resiliency are essential elements to MSC's force development, force generation, and force employment models that provide assured logistics to the joint force in peace, conflict, or crisis.

Agility with an expeditionary focus is key. Single-mission or noncommunicative ships are of limited utility in a contested and distributed maritime logistics environment. MSC, in coordination with industry and military stakeholders, continues to expand operational capability at sea. The command operates five medium-range commercial tank ships that are not only principally employed in point-to-point fuel shipments but also able to pass fuel to CLFs at sea in CONSOL operations. This capability, demonstrated in the RIMPAC (Rim of the Pacific) 2022 exercise, is a force multiplier for naval maneuver, and the MSC continues to advocate for more U.S.-flagged CONSOL-capable commercial tankers. The recent passage of the Tanker Security Program makes up to 10 U.S.-flagged commercial tankers of military utility eligible for a \$6 million annual stipend to participate in the fleet.<sup>16</sup> Organic CONSOL capability is an essential part of military utility in the TSP.

To rapidly impart CONSOL capability in crisis, MSC partnered to develop the Modular CONSOL Adapter Kit (MCAK), a bolt-on system that transforms commercial liquid cargo tankers (of a certain common design) into CONSOL-capable ships. MSC will receive 10 MCAK kits in fiscal year 2023. Similarly, to provide commercially chartered ships with secure communications capability, the Mobile Expeditionary Communications Kit can be deployed in conjunction with a uniformed tactical advisor to execute command and control capability on charters. Depending on specific mission threats, counter-unmanned aerial systems and military or commercial security teams can be embarked for force protection. Additional expeditionary



support systems are in various phases of development, including systems for fuel-over-the-shore operations, torpedo or vertical launch system reload at sea, unmanned aerial systems for high-value parts delivery, maintenance and repair shop “in a box,” and containerized hospital services. Each of these expeditionary capabilities provides options to expand government-owned and government-chartered vessel capabilities to fulfill key warfighting logistic functions.

The blended government-commercial model of MSC relies on commercial partners for joint force deployment and sustainment. American commercial shipping companies either own or operate and maintain more than half of MSC’s fleet. As a DOD head of contracting agency (12 in total), MSC uses contracting as a “weapons system” to rapidly generate and regenerate forces by agreements for charter, repair, and operation/maintenance of ships across the spectrum of conflict. Our partners are essential to this effort, including those outside of the United States. MSC regularly interoperates with allies and partners and serves as custodian of certain unique capabilities. For example, to enable U.S. defense of the Republic of Korea, the Korean Flag Shipping agreement makes 60 Republic of Korea flag RO/RO, container, and tank vessels available for transfer to MSC operational control. There may be opportunity in exploring similar defense among allies with sizable merchant fleets. Several large shipping companies in Europe could enable the rapid assembly of a vast North Atlantic Treaty Organization sealift and tanker fleet in support of conflict or crisis.

As a maritime nation, the United States projects strategic elements of the joint force via sea in peace, conflict, and crisis at the time and tempo of demand. Maritime nation status imparts a competitive advantage in an era of strategic competition. To maintain this competitive advantage, MSC will continue to support maritime academies, mariners, and partners as we look to harness innovation and the American seafaring spirit key. MSC will continue to support joint force mobility and encourage seafaring

professions, to train U.S. mariners to operate in contested environments and integrate seamlessly with allies and the joint force, and to accelerate development of a blended commercial/government/allied fleet with the ability to operate in contested environments. JFQ

## Notes

<sup>1</sup> Salvatore R. Mercogliano, “Suppose There Was a War and the Merchant Marine Didn’t Come?” *Proceedings* 146, no. 1 (January 2020), available at <<https://www.usni.org/magazines/proceedings/2020/january/suppose-there-was-war-and-merchant-marine-didnt-come>>.

<sup>2</sup> Alfred Thayer Mahan, *The Influence of Sea Power Upon History, 1600–1783* (Boston: Little, Brown, and Co., 1898).

<sup>3</sup> *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power* (Washington, DC: Department of Defense, December 2020), available at <<https://media.defense.gov/2020/Dec/16/2002553074/-1/-1/0/TRISERVICESTRATEGY.PDF>>.

<sup>4</sup> Department of Transportation, *National Transportation Statistics: Historical Compendium, 1960–1992* (Washington, DC: Bureau of Transportation Statistics, September 1993), available at <<https://rosap.ntl.bts.gov/view/dot/11971>>.

<sup>5</sup> David T. Matsuda, *State of the United States’ Merchant Fleet in Foreign Commerce*, Statement Before the House of Representatives Subcommittee on Coast Guard and Maritime Transportation, 111<sup>th</sup> Cong., 2<sup>nd</sup> sess., July 20, 2010, available at <<https://www.transportation.gov/testimony/state-united-states%E2%80%99-merchant-fleet-foreign-commerce>>.

<sup>6</sup> *Goals and Objectives for a Stronger Maritime Nation: A Report to Congress* (Washington, DC: Department of Transportation, February 2020), available at <[https://www.maritime.dot.gov/sites/marad.dot.gov/files/2020-07/Final\\_2\\_25\\_Stronger%20Maritime%20Nation%20Report\\_.pdf](https://www.maritime.dot.gov/sites/marad.dot.gov/files/2020-07/Final_2_25_Stronger%20Maritime%20Nation%20Report_.pdf)>.

<sup>7</sup> Mahan, *The Influence of Sea Power Upon History, 1600–1783*.

<sup>8</sup> “The Maritime Administration’s First 100 Years, 1916–2016,” Department of Transportation, available at <<https://www.maritime.dot.gov/history/historical-documents-and-resources/maritime-administration%E2%80%99s-first-100-years-1916-%E2%80%93-2016>>.

<sup>9</sup> *William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021*, 116<sup>th</sup> Cong., 1<sup>st</sup> sess., January 1, 2021, available at <<https://www.govinfo.gov/content/pkg/PLAW-116publ283/html/PLAW-116publ283.htm>>.

<sup>10</sup> *Underway replenishment* refers to the at-sea delivery of sustainment supplies to combatant vessels, including food, fuel, parts, arms/ammunition, and explosives.

<sup>11</sup> “Merchant Ship Naval Augmentation Program (MSNAP): Sealift Enhancement Feature (SEF),” *Global Security*, available at <[https://www.globalsecurity.org/military/systems/ship/systems/msnap.htm#:~:text=Augmentation%20Program%20\(MSNAP\)-,Sealift%20Enhancement%20Feature%20\(SEF\),during%20a%20crisis%20or%20conflict](https://www.globalsecurity.org/military/systems/ship/systems/msnap.htm#:~:text=Augmentation%20Program%20(MSNAP)-,Sealift%20Enhancement%20Feature%20(SEF),during%20a%20crisis%20or%20conflict)>.

<sup>12</sup> Bill Mesta, “Military Sealift Command Training Centers; Your Future in the Fleet Begins Here,” U.S. Navy, March 18, 2022, available at <<https://www.navy.mil/Press-Office/News-Stories/Article/2972317/military-sealift-command-training-centers-your-future-in-the-fleet-begins-here/>>.

<sup>13</sup> Prior to 1970, Military Sealift Command was known as the Military Sea Transportation Service.

<sup>14</sup> Government Accountability Office (GAO), *Navy Readiness: Actions Needed to Maintain Viable Surge Sealift and Combat Logistics Fleets*, GAO-17-503 (Washington, DC: GAO, August 2017), available at <<http://purl.fdlp.gov/GPO/gpo84248>>.

<sup>15</sup> Department of Transportation, *Posture and Readiness of the Mobility Enterprise*, Oral Statements Before Subcommittees on Seapower and Projection Forces and Readiness Joint Hearing, 117<sup>th</sup> Cong., 2<sup>nd</sup> sess., March 31, 2022, available at <<https://www.maritime.dot.gov/newsroom/congressional-testimony/oral-statements-subcommittees-seapower-and-projection-forces-and>>.

<sup>16</sup> See 46 U.S. Code, chap. 534, “Tanker Security Fleet,” January 1, 2021, available at <<https://uscode.house.gov/view.xhtml?path=/prelim@title46/subtitle5/partC/chapter534&edition=prelim>>.