

# Merchant Mariners



## Occupational Brief Title Codes:

- D.O.T.: 911., 197., 193., 350.
- G.O.E.: 05., 09.
- S.O.C.: 53-
- O\*NET™: 53-
- N.A.I.C.S.: 483
- H.O.C.: No Code

## Occupational Subtitles:

- Able Seamen
- Boatswains
- Captains
- Chief Engineers
- Helmsmen
- Mates
- Ordinary Seamen
- Qualified members of the Engine Department (QMED)
- Stewards

## Work Classification Based Related

### D.O.T. Occupations:

- Boat Loaders
- Lock Operators
- Tugboat Dispatchers

## Interests Based Related

### G.O.E. Occupations:

- Dock Hands
- Material Handlers
- Shipyard Laborers
- Wharf Workers

## Skills Based Related

### O\*NET Occupations:

- Freight Inspectors
- Industrial Truck and Tractor Operators
- Locomotive Engineers

## Noteworthy Quote:

*“U.S. Merchant Mariners are a vital part of America’s national and economic security. Although they are civilians, since World War II they have been known as the nation’s ‘fourth arm of defense’ because they often sail in support of U.S. troops. Their jobs vary, but in general, mariners handle work that is uncommon and challenging. In some cases that work offers a chance to see the world.”*

– Jordan Biscardo, Seafarers International Union, Camp Springs, Maryland

*Merchant mariners* (ˈmer-chant ˈmar-i-ners) operate ships and other water craft that move commercial cargo, and sometimes passengers, on international or domestic waterways. A variety of dry cargo ships, tankers, freighters, special vessels such as liquified natural gas (LNG) carriers, and tug-barge systems carry cargo and goods along world sea lanes, and along the rivers, bays, coastal waterways, and 25,000 miles of inland waterways of the United States. They carry oil, raw materials, manufactured goods, food, and other cargos vital to the economy.

Workers on these ships are part of the commercial shipping industry, also known as the U.S. Merchant Marine. These workers have specific skills and may serve as officers or may be part of the deck crew, the engine crew, or the steward department. This brief uses the terms pumpmen, seamen, and helmsmen. These terms are commonly used to describe merchant mariner occupations. Used here, they refer to both women and men.

## Work Performed

*Captains* or *masters* are in charge of all the operations on the ship. Captains give orders to deck officers and other workers who relay them to the crew. Captains maintain order and are responsible for the safety of the crew, passengers, cargo, and vessel. They determine the course and speed of the vessel, maneuver the vessel to avoid hazards, and continuously monitor the vessel’s position with charts and navigational aides. At sea, captains have the authority to take whatever action is needed to deal with emergencies.

Captains and their department heads ensure that proper procedures and safety practices are followed, and check to make sure that machinery and equipment are in good working order. They maintain logs and other records tracking the ships’ movement, efforts at controlling pollution, and cargo and passengers carried. They oversee the loading and discharging of cargo or passengers. While in port the captain may act as the shipowner’s agent. They may confer with customs officials, and may order supplies and services.

## Deck Department

*Mates* or *deck officers* serve as assistants to the captain during the shifts when they are on watch. All mates stand watch on the navigation bridge for specific periods. They help the captain navigate the ship, keep track of the speed and course of the ship, and assign lookouts who watch for other ships. Deck officers supervise crews who clean and maintain decks, the superstructure, and the bridge. Working with the deck crew, mates plan and supervise the loading and unloading of cargo. They inspect the ship cargo spaces to make sure the crew and shore gangs stow cargo according to specifications and regulations. They keep track of cargo-handling gear, and order repairs or replacements.

On smaller vessels, there may be only one mate who alternates watches with the captain. When more than one mate is necessary aboard a ship, they typically are designated *chief mates* or *first mates*, *second mates*, or *third mates*. Second mates work on all oceangoing ships. They are in charge of the navigation equipment and charts. Third mates are in charge of lifesaving equipment, including lifeboats and all fire-fighting and safety equipment. If the captain ever became

incapacitated (unable to command), the first mate would assume command of the ship.

**Boatswains** or **bosuns** are head seamen and carry out work details on the orders of the chief mate. Bosuns are directly in charge of the entire unlicensed crew. They direct work crews in tasks such as cleaning, scraping, and painting the decks or splicing rope and wire for rigging.

**Helmsmen** steer the ship under the direction of the navigation officer. They may also direct the crew in their assignments.

**Able seamen** carry out general duties including serving as helmsmen or boatswains. They have a comprehensive knowledge of the ship and its parts and know how to operate all gear, rigging, and deck equipment. They maintain and operate deck equipment such as lifeboats and anchors. They rig cargo booms and break out gear for loading or discharging cargo. When docking or departing, they handle lines. They do general maintenance work in non-engineering areas, such as repairing lines and cleaning decks. Able seamen also stand watch. They look out for other vessels and obstructions in the ship's path, as well as for navigational aids such as buoys and lighthouses, and measure water depth in shallow areas.

**Ordinary seamen** sign on as unskilled workers. They scrub decks, paint and clean the ship, coil and splice rope, and do other general upkeep work.

## Engine Department

**Chief engineers** supervise the engine department. They oversee workers who operate and maintain the engines and other machinery on the ship. Chief engineers keep records of fuel use, engine performance, and orders for changes in speed. **First assistant engineers** are in charge of engine room crews. They supervise crews who start, stop, and control the speed of the main engines. They also oversee the maintenance of the main power plant and auxiliary power plants. **Second assistant engineers** are in charge of the boilers, main diesel or gas turbine engines, and related equipment. They monitor fuel and water consumption, steam pressure, and oil and water temperatures. **Third assistant engineers** typically operate the propulsion systems and supervise the lubrication of engine room equipment and the distillation of salt water to fresh water. They also may be responsible for the electrical and refrigeration systems.

**Qualified members of the engine department (QMED)** and **marine oilers** assist the engineers in the operation and maintenance of the ship's powerplant and auxiliary systems. **Electricians** are responsible for the electrical distribution system and often assist in troubleshooting electronic control systems. **Wipers** are unskilled laborers who perform general tasks in the engine room. They clean and paint machinery, and help repair equipment. Tanker vessels may also have **pumpmen**. These workers handle systems that control the movement of fuel, oil, ballast, liquid, and cargo. They hook up hoses, operate pumps, and clean tanks. On tugboats or tow vessels, they tie barges together into two units, inspect them periodically, and disconnect them when the destination is reached.

## Steward Department

**Stewards** prepare and serve meals and maintain living quarters. The **chief steward** oversees this department, orders food and other supplies, and plans menus. Other workers in this department include the **chief cook**, a **baker**, and **galley utility** or **mess workers**. These workers do the actual preparing and serving of meals. They perform cleaning and setup work in dining and living quarters, including bathrooms. They are also in charge of laundry services.

## Working Conditions

A typical deep-sea merchant ship has a captain, three deck officers or mates, a chief engineer and three assistant engineers, plus six or more unlicensed seamen, such as able seamen, oilers, QMEDs, and cooks or food handlers. The size and service of the ship determine the number of crew members for a particular voyage. Small vessels operating in harbors, on rivers, or along the coast may have only a captain and one deckhand who also has cooking responsibilities.

Modern ships have clean, comfortable quarters. Space is limited on older ships, and crews share quarters. They take meals in the mess hall, which also serves as a recreation room on older ships. Modern vessels may have electronic entertainment areas, exercise rooms and even swimming pools. Deck personnel work in all kinds of weather, from the heat of the tropics to the cold winds of winter. Engine room workers may work around hot equipment and engines and in air-conditioned control rooms. Merchant mariner crews are away from home for extended periods of time. Although seafarers travel worldwide, they do not have many opportunities for sight-seeing because the time in most ports is very short.

## Hours and Earnings

Merchant mariners spend extended periods at sea. Most deep-sea mariners are hired for one or more voyages that last for several months. Those on smaller vessels, however, are normally assigned to one vessel for all voyages. Most seafarers are at sea six to nine months out of the year.

When at sea, most merchant mariners work seven days a week. Generally the schedule is 4-hours on duty followed by 8-hours off duty for each of three shifts, not including overtime. Those employed on Great Lakes ships work 60 days and have 30 days off, but do not work in the winter when the lakes are frozen. Workers on rivers, on canals, and in harbors are more likely to have year-round work. Some work 8- or 12-hour shifts and go home every day. Others work steadily for a week or a month and then have an extended period off. When working, they usually are on duty for 6 or 12 hours then off for 6 or 12 hours. Overtime is very common.

Workers aboard United States' vessels are some of the highest paid merchant mariner personnel in the world. Wages vary and are influenced by the mariner's job classification, as well as the kind, size, cargo, and destination of the

ship. Yearly income is also determined by the number and length of voyages made. According to the Bureau of Labor Statistics, average base salaries (excluding overtime and bonuses) for merchant mariner captains, mates, and pilots ranged from \$37,000 to \$64,000 a year in 2004. Those on larger vessels may earn more than \$100,000 a year, but only after many years of experience. Water transportation engineers averaged salaries ranging from \$42,000 to \$72,000 a year. Earnings for seamen and other unlicensed positions, such as stewards and marine oilers, ranged from the minimum wage for beginning positions to more than \$20 an hour for more experienced workers.

Overtime and vacation pay increase salaries for all merchant mariner occupations as much as 150 to 200 percent. They receive additional bonuses for working on vessels that carry dangerous cargo or explosives. Ship employees get free room and board while aboard ship. Their uniforms, special work clothing, laundry services, and transportation to and from the ship are free. Employees also usually receive medical benefits, guaranteed pensions, and disability pay.

### **Education and Training**

The U.S. Coast Guard regulates the training, entry, and educational requirements for most water transportation occupations. There are over 1,000 maritime courses offered by over 175 training providers approved by the U.S. Coast Guard. Harbor pilot training usually consists of an extended apprenticeship with a towing company or a pilots' association. Entrants may be able seamen or licensed officers.

Most deck officers and mariner engineers are graduates of accredited maritime academies. Currently there are six state maritime academies in addition to the U.S. Merchant Marine Academy. These schools offer four-year programs in maritime studies leading to a bachelor-of-science degree, and a license (issued only by the Coast Guard) as a third mate or third assistant engineer.

Majors include marine transportation, marine engineering, intermodal transportation and logistics, shipyard management, and systems engineering. These schools also offer continuing education courses. The Maritime Administration, which operates the U.S. Merchant Marine Academy, offers additional courses in marine specialties like diesel mechanics and fire fighting training for merchant seamen, as well as advanced studies. With experience and additional training, third officers may qualify for higher ranks.

While no experience or formal schooling is required for entry-level and unlicensed positions, training at a union-operated school is helpful. Some vocational-technical schools and community colleges also offer training for maritime work. Beginners are classified as ordinary seamen and may be assigned to any unlicensed positions in the three departments, such as wipers or mess workers. High school and vocational courses useful to this occupation may include industrial arts, mechanics, pre-engineering, computer

science, electronics, broadcasting, English, physics, social studies, cooking, or a foreign language. Work experience as a dock hand, long-shore worker, or food service worker is also appropriate to the field.

Ordinary seamen must have a combination of twelve months of school and seetime to take the qualifying test for the position of able seaman. In some cases, the combination of school and sea time may be substituted with twelve months of straight seetime. There are different categories of able seamen (ratings form part of a navigational watch) for which qualified applicants may test, provided they have met certain requirements related to sea service.

### **Licensing, Certification, and Unions**

All officers and operators of commercially operated vessels must be licensed by the U.S. Coast Guard, which offers various kinds of licenses, depending on the position and type of vessel. To qualify, applicants must accumulate seetime and meet regulatory requirements, or graduate from one of the merchant marine or maritime academies. Successful candidates must then pass a written exam, a physical exam, a drug screening, and a National Driver Register Check.

Every person working on a large U.S. commercial ship, or when working aboard liquid-carrying vessels, must have at least a merchant mariner's document from the Coast Guard. To get this document, applicants must be at least sixteen years old, must pass a drug test, and must be a U.S. citizen or an alien with resident status. For higher-level deckhands and unlicensed engineers, a medical certificate of excellent health is required. Crew working in the steward's department must have a certificate from a medical officer of the U.S. Public Health Service. Mariners must also obtain STCW (Standards of Training, Certification, and Watchkeeping for Seafarers) certification if traveling beyond the U.S. boundary line of seagoing service.

The water transportation industry is highly unionized. Unions whose members are merchant mariners include the Seafarers International Union, the National Marine Engineers Beneficial Association, and the International Organization of Masters, Mates, and Pilots.

### **Personal Qualifications**

Merchant marine personnel must be able to tolerate being away from home for long periods of time. They should be able to work closely with others. Captains and officers must have good judgment, a solid academic background, and leadership ability.

Occupations can be adapted for workers with disabilities. Persons should contact their school or employment counselors, their state office of vocational rehabilitation, or their state department of labor to explore fully their individual needs and requirements as well as the requirements of the occupation.

### **Where Employed**

In 2004, water transportation workers held roughly 68,000 jobs. Around 30 percent were employed on registered

U.S. ships. About half worked in inland water transportation—primarily the Mississippi River system. The other half were employed on the deep seas, along the coasts, and on the Great Lakes. Another 28 percent worked in establishments related to port and harbor operations, marine cargo handling, or navigational services to shipping. The federal government employed about 5 percent of merchant mariners, mostly on supply ships as Civilian Mariners of the Navy's Military Sealift Command. Others worked on vessels owned by private companies. Over 15 percent of captains were self-employed. They either operated their own vessels, or independently contracted out their services to ship owners.

### Employment Outlook

The Bureau of Labor Statistics expects a tight job market to continue through the year 2012. Although a Department of Transportation study noted that the United States marine transportation system can expect to double in volume within twenty years, overall employment is only projected to grow by 3.4 percent—an increase of only a couple thousand positions. Newer ships with automated controls and monitoring systems need fewer crew members to operate the vessel. For this reason, competition for merchant mariner jobs aboard ships will remain keen.

Most job opportunities in the merchant marines will occur when currently employed workers find jobs in other fields or when they retire—contributing to more than 23,000 job openings. Opportunities will be best in deep sea, coastal, and Great Lakes transportation, as well as scenic transportation and sightseeing industries. There has been a re-birth of the U.S.-flag deep sea passenger cruise line industry. Efforts are underway to increase the use of ferries to handle commuter traffic around major metropolitan areas. A growing number of merchant mariners are also taking land-based jobs with shipping companies, marine insurance companies, manufacturers of boilers or related machinery, or other related jobs.

### Entry Methods

Most shipping companies recruit seamen from union hiring halls in major ports. Jobs go to experienced union members with the most seniority. At times, applicants without experience may find it hard to get work because unemployed union members with experience may outnumber job openings.

### Advancement

Ordinary seamen may advance to become able seamen. Experienced able seamen may advance to become boatswains. They may become third mates, then second mates, and finally chief mates. Chief mates with broad experience may become ship masters, the top rank in the deck department.

Wipers may advance to become qualified members of the engine department. Some may advance to become third assistant engineer, second assistant engineer, first assistant engineer, and finally chief engineer. Promotions in the engine department are more rapid than in the deck department. It generally takes less time to become a chief engineer than it takes to become a ship captain.

### For Further Research

**Maritime Administration**, U.S. Department of Transportation, 400 Seventh Street, S.W., Washington, DC 20590.  
Web site: [www.marad.dot.gov](http://www.marad.dot.gov)

**U.S. Merchant Marine Academy**, 300 Steamboat Road, Kings Point, NY 11024. Web site: [www.usmma.edu](http://www.usmma.edu)

### Acknowledgments

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