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ΘΕΜΑ

“CREW RANKS AND ROLES”

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Ο ΔΙΕΥΘΥΝΤΗΣ ΣΧΟΛΗΣ : ΤΣΟΥΛΗΣ ΝΙΚΟΛΑΟΣ

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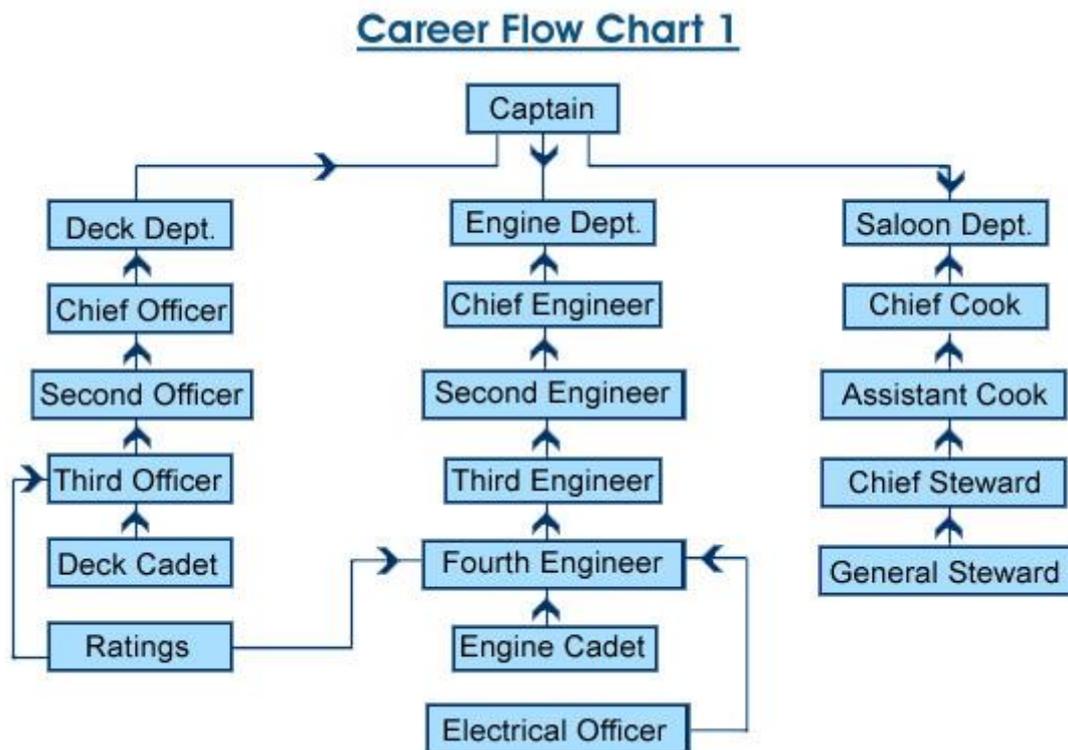
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Introduction

Seafarers hold a variety of professions and ranks, and each of these roles carries unique responsibilities which are integral to the successful operation of a seafaring vessel. A ship's bridge, filled with sophisticated equipment, requires skills differing from those used on the deck, which houses berthing and cargo gear, which requires skills different from those used in a ship's engine room, and so on.

The following is only a partial listing of professions and ranks. Ship operators have understandably employed a wide variety of positions, given the vast array of technologies, missions, and circumstances that ships have been subjected to over the years. Usually, seafarers work on board a ship between eight and fifteen years. A ship's crew can generally be divided into four main categories: the deck department, the engineering department, the steward's department, and other. Generally, there are some differences between naval and civilian seafarers. One of them is that the seafarers on merchant vessels are usually not of the same nationality, so that special cross-cultural training is required, especially with regard to a lingua franca. Moreover, administrative work has increased considerably on board, partly as an effect of increased focus on safety and security. A study shows that due to this development certain skills are missing and some are desired, so that a new degree of flexibility and job sharing has arisen, as the workload of each crew member also increases.



Captain/Master

A sea captain (also called a captain or a master or a shipmaster) is a licensed mariner in ultimate command of the vessel. The captain is responsible for its safe and efficient operation, including cargo operations, navigation, crew management and ensuring that the vessel complies with local and international laws, as well as company and flag state policies. All persons on board, including officers and crew, other shipboard staff members, passengers, guests and pilots, are under the captain's authority and are his ultimate responsibility.

Duties and Functions

A ship's captain commands and manages all ship's personnel, and is typically in charge of the ship's accounting, payrolls, and inventories. The captain is responsible for compliance with immigration and customs regulations, maintaining the ship's certificates and documentation, compliance with the vessel's security plan, as mandated by the International Maritime Organization. The captain is responsible for responding to and reporting in case of accidents and incidents, and in case of injuries and illness among the ship's crew and passengers.

Responsibilities

The captain ensures that the ship complies with local and international laws and complies also with company policies. The captain is ultimately responsible, under the law, for aspects of operation such as the safe navigation of the ship, its cleanliness and seaworthiness, safe handling of all cargo management of all personnel, inventory of ship's cash and stores, and maintaining the ship's certificates and documentation. One of a shipmaster's particularly important duties is to ensure compliance with the vessel's security plan, as required by the International Maritime Organization's ISPS Code. The plan, customized to meet the needs of each individual ship, spells out duties including conducting searches and inspections, maintaining restricted spaces, and responding to threats from terrorists, hijackers, pirates, and stowaways. The security plan also covers topics such as refugees and asylum seekers, smuggling, and saboteurs. On ships without a purser, the captain is in charge of the ship's accounting. This includes ensuring an adequate amount of cash on board, coordinating the ship's payroll (including draws and advances), and managing the ship's slop chest. On international voyages, the captain is responsible for

satisfying requirements of the local immigration and customs officials. Immigration issues can include situations such as embarking and disembarking passengers, handling crewmembers who desert the ship, making crew-changes in port, and making accommodations for foreign crewmembers. Customs requirements can include the master providing a cargo declaration, a ship's stores declaration, declaration of crewmembers' personal effects, crew lists and passenger lists. The

captain has special responsibilities when the ship or its cargo is damaged, when the ship causes damage to other vessels or facilities, and in the case of injury or death of a crewmember or passenger. The master acts as a liaison to local investigators and is responsible for providing complete and accurate logbooks, reports, statements and evidence to document an incident. Specific examples of the ship causing external damage include collisions with other ships or with fixed objects, grounding the vessel, and dragging anchor.¹ Some common causes of cargo damage include heavy weather, water damage, pilferage, and damage caused during loading/unloading by the stevedores. Finally, the master is responsible to address any medical issues affecting the passengers and crew by providing medical care as possible, cooperating with shore-side medical personnel, and, if necessary, evacuating those who need more assistance than can be provided on board the ship.

Uniform

Uniforms are still worn aboard many ships, or aboard any vessels of traditional and organized navigation companies, and are required by company regulation on passenger and cruise vessels.

In the passenger-carrying trade a unified corporate image is often desired and it is useful for those unfamiliar with the vessel to be able to identify members of the crew and their function. Some companies and countries use an executive curl (also called Nelson loop) similar to that of the Royal Navy. Captain and officers on British ships often wear the traditional diamond shape within the stripes. This represents a blade of a ship's propeller. It should be worn in the correct direction with the overlapping loop facing forward.

What Are The Different Types Of Captain Jobs?

Captain jobs might include working on a cargo ship, cruise ship, yacht, ferry, commercial fishing boat, or as a harbor pilot. In each case, the captain takes responsibility for the operation and safety of the vessel while in national or international waters.

Deck Department

Chief Officer/Mate

A Chief Mate (C/M) or Chief Officer, usually also synonymous with the First Mate or First Officer (except on passenger liners, which often carry both), is a licensed member and head of the deck department of a merchant ship. The chief mate is in charge of the ship's cargo and deck crew. The actual title used will vary by ship's employment, by type of ship, by nationality, and by trade. Informally, the Chief Mate will often simply be called "The Mate." The term "Chief Mate" is not usually used in the Commonwealth, although Chief Officer and First Mate are.

The chief mate is responsible to the Captain for the safety and security of the ship. Responsibilities include the crew's welfare and training in areas such as safety, firefighting, search and rescue.

Senior on board Operations Manager

The Chief Mate, who is the second in command of the vessel, is often equated, in corporate terms, to a senior manager for the operations on board, as the Mate is in charge of a number of departmental functions. In modern cargo vessels, the Mate holds appointments like Head of Deck Department, Head of Cargo/ Stowage Operations, Head of Safety/ Fire Fighting, Head of On-Board Security (Ship Security Officer), Head of Environment and Quality, and so forth.

Cargo officer

As cargo officer, a chief mate oversees the loading, stowage, securing and unloading of cargoes. Moreover the chief mate is accountable for the care of cargo during the voyage. This includes a general responsibility for the ship's stability and special care for cargoes that are dangerous, hazardous or harmful.

Even under the best of conditions, a ship is balanced precariously upon the water and is subject to a number of forces, such as wind, swells, and storms, which could capsize it. The cargo officer uses tools like ballasting and load balancing to optimize the ship's performance for the expected type of environment.

Watch Standing

Traditionally, the chief mate stands a "4-8" watch: from 4 AM until 8 AM and 4 PM until 8 PM, in port and at sea, the chief mate is responsible to the captain for keeping the ship, crew, and cargo safe. On watch, the mate must enforce all applicable regulations, such as the International Convention for the Safety of Life at Sea and pollution regulations. In port, the watch focuses on duties such as cargo operations, fire and security watches, monitoring communications and the anchor or mooring lines.

IMO regulations require the officer be fluent in English. This is required for a number of reasons, such as ability to use nautical charts and nautical publications, to understand weather and safety messages, communicate with other ships and coast stations, and to be able to work with a multi-lingual crew.

Sea watch

At sea, the mate on watch has three fundamental duties: navigate the ship, safely avoid traffic, and respond to any emergencies that may arise. Mates generally stand watch with able seamen who act as helmsman and lookout. The helmsman executes turns and the lookout reports dangers such as approaching ships. These roles are often combined to a single helmsman/lookout and, under some circumstances, are eliminated completely. The ability to smartly handle a ship is key to safe watch standing. A ship's draught, trim, speed and under-keel clearance all affect its turning radius and stopping distance. Other factors include the effects of wind and current, squat, shallow water and similar effects. Ship handling is key when the need arises to rescue a man overboard, to anchor, or to moor the ship. The officer must also be able to transmit and receive signals by Morse light and to use the International Code of Signals.

Navigation

Celestial, terrestrial, electronic, and coastal navigation techniques are used to fix a ship's position on a navigational chart. The officer directs the helmsman to keep tracking, accounting for effects of winds, tides, currents and estimated speed. The officer uses supplemental information from nautical publications, such as Sailing Directions, tide tables, Notices to Mariners, and radio navigational warnings to keep the ship clear of danger in transit.

Safety demands the mate be able to quickly solve steering control problems and to calibrate the system for optimum performance. Since magnetic and gyro compasses show the course to steer, the officer must be able to determine and correct for compass errors.

Weather's profound effect on ships requires the officer be able to interpret and apply meteorological information from all available sources. This requires expertise in weather systems, reporting procedures and recording systems.

Traffic management

The International Regulations for Preventing Collisions at Sea are a cornerstone of safe watchkeeping. Safety requires that one live these rules and follows the principles of safe watchkeeping. Maximizing bridge teamwork, including the practice of Bridge Resource Management, is an emerging focus in watchkeeping.

The main purpose for Radar and Automatic Radar Plotting Aids (ARPA) on a ship's bridge is to move safely among other vessels. These instruments help to accurately judge information about prominent objects in the vicinity, such as:

- range, bearing, course and speed
- time and distance of closest point of approach
- course and speed changes

These factors help the officer apply the COLREGS to safely maneuver in the vicinity of obstructions and other ships.

Unfortunately, radar has a number of limitations, and ARPA inherits those limitations and adds a number of its own. Factors such as rain, high seas, and dense clouds can prevent radar from detecting other vessels. Further, dense traffic and course and speed changes can confuse ARPA units. Finally, human errors such as inaccurate speed inputs and confusion between true and relative vectors add to the limitations of the radar/ARPA suite.

Under the best conditions, the radar operator must be able to optimize system settings and detect divergences between an ARPA system and actual conditions. Information obtained from radar and ARPA must be treated with scrutiny: over reliance on these systems has sunk ships. The officer must understand system performance, limitations and accuracy, tracking capabilities and limitations, and processing delays, and the use of operational warnings and system tests.

Emergencies

Emergencies can happen at any time. The officer must be equipped to safeguard passengers and crew. The officer must be able to take initial action after a collision or grounding. Responsibilities include performing damage assessment and control, understanding the procedures for rescuing persons from the sea, assisting ships in distress, and responding to any emergency which may arise in port.

The Chief Mate is in charge of the firefighting and damage control teams. He is scene leader and reports via radio to the Captain who is in command and coordinates the larger response from the bridge.

Second Officer

A second mate (2nd Mate) or second officer (2O) is a licensed member of the deck department of a merchant ship holding a Second Mates Certificate of Competency, which is issued by the administration. The second mate is the third in command (or on some ocean liners fourth) and a watchkeeping officer, customarily the ship's navigator. Other duties vary, but the second mate is often the medical officer and in charge of maintaining distress signaling equipment. On oil tankers, the second mate usually assists the chief mate with the Cargo operations.

The Navigator's role focuses on creating the ship's passage plans. A passage plan is a comprehensive, step by step description of how the voyage is to proceed from berth to berth or you say One port to another. The plan includes undocking, departure, the en route portion of a voyage, approach, and mooring at the destination.

The GMDSS (Global Maritime Distress and Safety System) officer role consists of performing tests and maintenance, and ensuring the proper log-keeping on the ship's Global Maritime Distress Safety System equipment. Safety equipment includes Emergency Position-Indicating Radio Beacons, a NAVTEX unit, INMARSAT consoles, various radios, Search and Rescue Transponders, and Digital Selective Calling systems.

Watchkeeping OOW (Officer on Watch)

A second mate is almost always a watch keeper (OOW). In port and at sea, the second mate is responsible to the captain for keeping the ship, its crew, and its cargo safe for eight hours each day. Traditionally, the second mate stands a "12-4" watch: from midnight until 4am and noon until 4pm. On watch, he must enforce all applicable regulations, such as safety of life at sea and pollution regulations. In port, the watch focuses on duties such as cargo operations, fire and security watches, monitoring communications, and the anchor or mooring lines.

IMO regulations require the officer be fluent in English. This is required for a number of reasons, such as to use charts and nautical publications, understand weather and

safety messages, communication with other ships and coast stations, and to be able to work with a multi-lingual crew.

In compliance with the COLREGS, a proper look-out must be maintained at all times to serve the purposes of: • maintaining a continuous state of vigilance by sight and hearing as well as by all other available means, with regard to any significant change in the operating environment; • fully appraising the situation and the risk of collision, stranding and other dangers to navigation; • detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation. Full attention to look-out duties must be given by the bridge team on watch. A helmsman while steering, except in small ships with an unobstructed all round view at the steering position, should not be considered to be the look-out. On ships with fully enclosed bridges, sound reception equipment will need to be in operation continuously and correctly adjusted to ensure that all audible sounds on the open deck can be clearly heard on the bridge.

Sole look-out

Under the STCW Code, the OOW may be the sole look-out in daylight provided that on each such occasion: • the situation has been carefully assessed and it has been established without doubt that it is safe to operate with a sole look-out; • full account has been taken of all relevant factors, including, but not limited to: • state of weather • visibility • traffic density • proximity of dangers to navigation • the attention necessary when navigating in or near traffic separation schemes; • assistance is immediately available to be summoned to the bridge when any change in the situation so requires. If sole look-out watchkeeping practices are to be followed, clear guidance on how they should operate will need to be given in the shipboard operational procedures manual

The OOW must always comply with the COLREGS. Compliance not only concerns the conduct of vessels under the steering and sailing rules, but displaying the correct lights and shapes and making the correct sound and light signals. A vessel drifting off a port with her engines deliberately shut down is not, for example, a 'vessel not under command' as defined by rule 3(f) of the COLREGS. Caution should always be observed when approaching other vessels. Vessels may not be displaying their correct light or shape signals, or indeed their signals could be badly positioned and obscured by the ship's structure when approached from certain directions. In sea areas where traffic flow is regulated, such as port approaches and traffic separation schemes, it

may be possible to anticipate movements from certain ship types. In these circumstances it is prudent to allow extra sea room, as long as it is safe to do so.

Collision avoidance action

In general, early and positive action should always be taken when avoiding collisions, and once action has been taken, the OOW should always check to make sure that the action taken is having the desired effect. VHP radio should not be used for collision avoidance purposes. Valuable time can be wasted attempting to make contact, since positive identification may be difficult, and once contact has been made misunderstandings may arise.

Collision avoidance detection

In clear weather, the risk of collision can be detected early by taking frequent compass bearings of an approaching vessel to ascertain whether or not the bearing is steady and the vessel is on a collision course. Care however must be taken when approaching very large ships, ships under tow or ships at close range. An appreciable bearing change may be evident under these circumstances but in fact a risk of collision may still remain. In restricted visibility, conduct of vessels is specifically covered by the COLREGS. In these conditions, radar and in particular electronic radar plotting can be effectively used for assessing risk of collision. The OOW should take the opportunity to carry out radar practice in clear visibility, whenever it is possible.

Officer in charge of navigational equipment and other aids to navigation

On the ship the second officer is the officer that works under the Master, i.e. the Captain of the ship and shoulders the responsibility of checking the functionality of all the navigational equipment, such as the Echo-sounder, Radar, ECDIS, AIS, and on some vessels even the GMDSS radio equipment, however recently it has been observed that Companies tend to designate the responsibility of maintaining the GMDSS equipment to the third officer. These checks are made in accordance to the companies planned maintenance system. In addition these checks are usually made prior to arrival and departure ports. Often if any navigational equipment is suspected of being faulty then it should be checked that the equipment is in working order as per the given performance standards. Correction of Navigation Charts and the duties of

keeping the charts up to date rests on the Second mate. These corrections are received in the Weekly/Monthly/Annual Notices to Mariners, if Admiralty Charts are used on board. Corrections are to be made using the standard Symbols from Chart 5011. Admiralty Publication NP 294 How to Keep Charts Up to Date, should be used as a reference to maintenance of charts. However due to the introduction of the ECDIS in a phased manner that is due to be introduced on most Merchant Vessels by 2018, manual correction of charts is fast becoming obsolete. ECDIS has ushered in the age of SENC, Vector Charts these charts can be updated remotely by the broadcasts of the service provider, provided that the ship is connected to the Internet. Corrections may also be received via email, or Correction CD's depending on the service provider and your needs.

Navigation

Celestial, terrestrial, electronic, and coastal navigation techniques are used to fix a ship's position on a navigational chart. Accounting for effects of winds, tides, currents and estimated speed, the officer directs the helmsman to keep to track. The officer uses supplemental information from nautical publications, such as Sailing Directions, tide tables, Notices to Mariners, and radio navigational warnings to keep the ship clear of danger in transit.

Safety demands the mate be able to quickly solve steering control problems and to calibrate the system for optimum performance. Since magnetic and gyrocompasses show the course to steer, the officer must be able to determine and correct for compass errors.

Weather's profound effect on ships requires the officer be able to interpret and apply meteorological information from all available sources. This requires expertise in weather systems, reporting procedures, and recording systems.

Traffic management

The International Regulations for Preventing Collisions at Sea are a cornerstone of safe watchkeeping. Safety requires that one live these rules and follow the principles of safe watchkeeping. Maximizing bridge teamwork, including Bridge Resource Management is an emerging focus in watchkeeping.

The main purpose for Automatic Radar Plotting Aids (ARPA) on a ship's bridge is to move safely among other vessels. These tools help to accurately judge information about prominent objects in the vicinity, such as:

- range, bearing, course and speed
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These factors help the officer apply the COLREGS to safely maneuver in the vicinity of obstructions and other ships.

Unfortunately, radar has a number of limitations, and ARPA inherits those limitations and adds a number of its own. Factors such as rain, high seas, and dense clouds can prevent radar from detecting other vessels. Conditions such as dense traffic and course and speed changes can confuse ARPA units. Finally, human errors such as inaccurate speed inputs and confusion between true and relative vectors add to the limitations of the radar/ARPA suite.

The radar operator must be able to optimize system settings and detect divergences between an ARPA system and reality. Information obtained from radar and ARPA has to be treated with scrutiny: over reliance on these systems has sunk ships. The officer must understand system performance. Examples include limitations and accuracy, tracking capabilities and limitations, and processing delays, and the use of operational warnings and system tests.

Emergencies

Emergencies can happen at any time, and the officer must be equipped to safeguard passengers and crew. After a collision or grounding, the officer must be able to take initial action, perform damage assessment and control, and understand the procedures for rescuing persons from the sea, assisting ships in distress, and responding to any emergency which may arise in port.

The officer must understand distress signals and know the IMO Merchant Ship Search and Rescue Manual.

Cargo Handling

The ship's officer must be able to oversee the loading, stowage, securing and unloading of cargoes. Requirements include understanding the care of cargo during the voyage.

Of particular importance is knowledge of the effect of cargo including heavy lifts on the seaworthiness and stability of the ship. The officer must also understand safe handling, stowage and securing of cargoes, including cargoes that are dangerous, hazardous or harmful.

Controlling ship operations

The officer has special responsibilities to keep the ship, the people on board and the environment safe. This includes keeping the ship seaworthy during fire and loss of stability, and providing aid and maintaining safety during man overboard, abandoning ship, and medical emergencies.

Understanding ship's stability, trim, stress, and the basics of ship's construction is a key to keeping a ship seaworthy. Competencies include knowing what to do in cases of flooding and loss of buoyancy. Fire is also a constant concern. Knowing the classes and chemistry of fire, fire-fighting appliances, and systems prepares the officer to act fast in case of fire.

An officer must be expert in the use of survival craft and rescue boats, their launching appliances and arrangements, and their equipment including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids. It's important to be expert in the techniques for survival at sea techniques in case it's necessary to abandon ship.

Officers are trained to perform medical tasks and to follow instructions given by radio or obtained from guides. This training includes what to do in case of common shipboard accidents and illnesses.



Third officer

A Third Mate (3/M) or Third Officer is a licensed member of the deck department of a merchant ship. The third mate is a watch stander and customarily the ship's safety officer and fourth-in-command (fifth in some ocean liners). Other duties vary depending on the type of ship, its crewing, and other factors.

Duties related to the role of safety officer focus on responsibility for items such as firefighting equipment, lifeboats, and various other emergency systems.

WATCHSTANDING

In port, the watch focuses on duties such as cargo operations, fire watches, security watches, monitoring communications, and monitoring the anchor or mooring lines.

International Maritime Organization (IMO) regulations require the officer be fluent in the English language. This is required for a number of reasons. Examples include the ability to read charts and nautical publications, understand weather and safety messages, communicate with other ships and coast stations, and to successfully interact with a multi-lingual crew.

Emergencies

Emergencies can happen at any time. The officer must be ready at all times to safeguard passengers and crew. After a collision or grounding, the mate must be able to take initial action, perform damage assessment and control, and understand the procedures for rescuing persons from the sea, assisting ships in distress, and responding to any emergency which may arise in port.

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Sea watch

At sea, the mate on watch has three fundamental duties: to navigate the ship, to safely avoid traffic, and to respond to any emergencies that may arise. Mates generally stand watch with able seamen who act as helmsman and lookout. The helmsman executes turns and the lookout reports dangers such as approaching ships. These roles are often combined to a single helmsman/lookout and, under some circumstances, can be eliminated completely. The ability to smartly handle a ship is key to safe watch standing. A ship's draught, trim, speed and under-keel clearance all affect its turning radius and stopping distance. Other factors include the effects of wind and current, squat, shallow water and similar effects. Ship handling is key when the need arises to rescue a person overboard, to anchor, or to moor the ship.

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In-port watch

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The ship's officer must be able to oversee the loading, stowage, securing and unloading of cargoes. He must also understand the care of cargo during the voyage.

Of particular importance is knowledge of the effect of cargo including heavy lifts on the seaworthiness and stability of the ship. The officer must also understand safe handling, stowage and securing of cargoes, including cargoes that are dangerous, hazardous or harmful.

SAFETY OFFICER

The third mate is usually responsible for the upkeep of lifesaving and firefighting equipment. This includes a responsibility for some or all of the ship's boats, and particularly the lifeboats. The third mate is also generally an active participant in fire and boat drills.

Deck Cadet

While still in a maritime college, a deck cadet often wonders as to what his shipboard duties exactly are. The common answer to this intriguing question at college is that a cadet must assist the deck officers in the day-to-day operations of the vessel.

Maritime books don't really outline the duties expected from a trainee officer and rather harps on the theoretical aspects of onboard training.

Indeed, there are excellent books on the theory and practice of seamanship but the practical experience gained as a cadet onboard ship is better than any bookish knowledge.

It is therefore important that deck cadets have a general overview of the duties that are performed when on board ships. Of course, these are general guidelines and the jobs may vary from ship to ship.

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Maritime books don't really outline the duties expected from a trainee officer and rather harps on the theoretical aspects of onboard training.

Indeed, there are excellent books on the theory and practice of seamanship but the practical experience gained as a cadet onboard ship is better than any bookish knowledge.

It is therefore important that deck cadets have a general overview of the duties that are performed when on board ships. Of course, these are general guidelines and the jobs may vary from ship to ship.

Below mentioned are ten important duties that are required to be performed by deck cadets on almost every type of ship.

1. **Tank Soundings:** Almost all deck cadets are asked to check tank soundings on a regular basis. Generally taken after the 0400-0800 watch (before or right after breakfast), soundings are very crucial for ensuring the stability of the vessel. The fact that the ship's stability is dependent on the total ballast being carried, makes a deck cadet realize the high level of responsibility given to him.

Taking soundings must be learnt to the highest degree of precision so that the job becomes easier and executed swiftly. Knowing the depth of all the tanks also saves a lot of time. At ports, soundings are extremely crucial to the loading and/or discharging of the cargo and should not be meddled with at all. Fabricating the readings can be detrimental to the safety of the ship and its crew.

2. **Ship Maintenance:** All cadets who have served onboard will know that an area within the ship is designated to the deck cadet for maintenance and upkeep. Generally, one deck (or a part of it) of the superstructure is assigned to the cadet. Maintenance of that includes overall cleanliness and reporting of any abnormalities within the area.

3. LSA/FFA Maintenance: Thorough maintenance of the lifesaving appliances (LSA) and firefighting appliances (FFA) is extremely important. Generally a part of the 3rd Mate's duties and responsibilities, this work is assigned to the cadets so that they learn the procedures of noting down expiry dates, carrying out repair work, checking for any defects, emailing the company for ordering new products etc. In the process, a cadet ends up learning a great deal about how each equipment functions and also a lot about the lifeboats, life rafts, pyrotechnics, SOLAS Regulations etc. All such information ends up being extremely useful when appearing for the 2nd Mates examination.

4. Deck Work: Assisting the ship's bosun in everyday deck work is embedded into any cadet's daily schedule. This is basically grounding work, seemingly unimportant at the start, but builds the framework for the coming years as an officer. Work on deck including chipping, painting, grinding etc. is carried out to maintain the structural integrity of the deck, along with some rope work (e.g., splicing) that gives cadets the right aspect towards good seamanship.

Also, as all cadets will tell you, the job of stenciling various parts on deck is the universal designated duty of a cadet!

5. Berthing/Unberthing Operations: When a vessel goes alongside (or casts away), it's normally "all hands on deck". The entire deck populace is present at their respective stations to get the vessel to berth/cast off close to perfection. A cadet starts out at the stations as a sort of a rating, doing mainly the physical work. As time goes by and experience is gained, his job switches to more of a supervisory nature, wherein the cadet is expected to relay the orders of the Master to the ratings, ensuring that the operation runs smoothly and in order.

6. Pilotage Operations: A cadet's role during pilotage varies with the time he has spent onboard. Initially, a cadet assists the ratings in rigging the pilot ladder and lowering the gangway for the pilot to board, along with other related processes during pilotage. The process also involves learning, first hand, the precise construction of the pilot ladder as per Regulations (important when appearing for the 2nd Mates examination). Gradually, once the Master deems the Cadet to be relatively well versed with the vessel's operations, he is called on the Bridge to assist the duty officer with the different pilotage paperwork, e.g. printing out and filling the pilot card, plotting the position, filling the radio log (under supervision), observing the steering etc.

7. Port work and Cargo Operations: Being a trainee officer slated to sail as a 3rd Mate upon completion of the training period, a cadet is expected to be vigilant while in port. Work in port includes assisting the 3rd Mate with paperwork (Bond

store, crew declaration etc.), i.e. keeping them stamped, signed and ready with a fair number of photocopies.

Watches also have to be kept in port; this includes monitoring the cargo being loaded/unloaded (involves noting down precise timings of the start and end of loading/unloading, every time it happens). Normally, the cadet is made responsible to keep a tab on the tank soundings with continuous feedback to the duty officer on the portable VHF handheld/ walkie-talkie.

8. ISPS Watch: A very integral part of the port watch, an ISPS watch is pivotal to the security of the ship. With the norms pertaining to ship security getting stringent by the day, the ISPS watch has become one that has to be taken rather seriously.

A cadet is normally assigned to monitor the entry and exit points of the vessel. Usually stationed at the gangway, it is expected from a cadet to keep a log of all the persons entering and leaving the vessel; this includes all shore personnel as well as the ship's crew (going on shore leave). IDs must be checked and logged in the ship's 'Visitor's Log'. If such a system exists onboard (differs from company to company), a ship's numbered ID must be provided to keep a track of the person even more precisely. Bags and suspicious objects must be checked thoroughly. A cadet, being an officer in the making, is also expected to usher in various officials (PSC Surveyors, Coast Guard, Medical/Health Inspectors etc.) to the ship's office. Informing the duty officer of the particulars of the person being brought in is crucial and comes naturally after having spent enough time onboard.

9. Paperwork At Sea: All seafarers will agree that paperwork has increased many times over and so has the stress and irritation that comes with it! A cadet is expected to be a helping hand to the Chief Mate when it comes to the different checklists, familiarization lists, key logs etc.

Updating of the Muster lists and the cabin key log are generally handed over to the cadet when there are new on signers. Making photocopies of various lists are almost always the sole job of a cadet! (And sometimes the number is extremely large). Not to forget the thing that has become ubiquitous on almost all vessels- The Watch & Rest Hours- to be distributed to all on time; another universally allotted job of the deck cadet.

Although not directly part of mainstream paperwork, the numerous discontinued charts that are used for stenciling are also to be cut out, close to perfection by the deck cadet!

10. Navigation: Perhaps the most important aspect of being a cadet, navigation is the very purpose that the ship is in business and officers/ratings are employed!

Not having a valid Certificate of Competency (COC), a cadet is naturally not allowed to keep a bridge watch independently. However, under the guidance and supervision of a certified officer (almost always it is the Chief Mate), a cadet is expected to learn the science and art of navigation. Theoretical knowledge of the COLREGS, Celestial Navigation, Bridge Equipment, Seamanship, Chart work etc. all culminate into this one grand attempt at safe navigation of the vessel.

Normally, the Chief Mate takes time out during the bridge watches (0400-0800 and 1600-2000) to teach a cadet about the on goings in the bridge and also tests his knowledge of the myriad aspects of the merchant navy. Gradually, the Chief Mate and eventually the Master develops a trust factor (provided the cadet is worth the salt), which enables them to delegate work to the cadet.

As daunting as it may seem, cadetship actually is the most fun part of one's shipping career. With no responsibility at hand and not being answerable under legal bindings, cadetship is the time to learn and imbibe. Everyone that has gone through will look back at their time fondly (except the extreme cases!) and with pride. Donning the uniform as a young 20 something is a matter of respect. Provided a cadet is diligent in his duties, he can be assured that he'll be respected by all onboard and the time he spends as a cadet will be full of lifelong memories.

Boatswain

A boatswain (/ˈboʊsən, formerly and dialectally also /ˈboʊtsweɪn/), bo's'n, bos'n, or bosun, is the senior crewman of the deck department and is responsible for the components of a ship's hull. The boatswain supervises the other members of the ship's deck department, and typically is not a watch stander, except on vessels with small crews. Other duties vary depending on the type of ship, her crewing, and other factors.

HISTORY

The word boatswain has been in the English language since approximately 1450. It is derived from late Old English *batswegan*, from *bat* (boat) concatenated with Old Norse *sveinn* (swain), meaning a young man, a follower, retainer or servant. The phonetic spelling *bosun* has been observed since 1868. This latter spelling was used in Shakespeare's *The Tempest* written in 1611, and as *Bos'nin* in later editions.

Royal Navy

The rank of boatswain was until recently the oldest rank in the Royal Navy, and its origins can be traced back to the year 1040. In that year, when five English ports began furnishing warships to King Edward the Confessor in exchange for certain privileges, they also furnished crews whose officers were the master, boatswain, carpenter and cook. Later these officers were "warranted" by the British Admiralty. They maintained and sailed the ships and were the standing officers of the navy.

NAVAL CADETS

The rank of Cadet Boatswain, in some schools, is the second highest rank in the combined cadet force naval section that a cadet can attain, below the rank of coxswain and above the rank of leading hand. It is equivalent to the rank of Colour Sergeant in the army and the royal marines cadets, it is sometimes an appointment for a senior petty officer to assist a coxswain.

JOB DESCRIPTION

The boatswain works in a ship's deck department as the foreman of the unlicensed (crew members without a mate's license) deck crew. Sometimes, the boatswain is also

a third or fourth mate. A bosun must be highly skilled in all matters of marlinespike seamanship required for working on deck of a seagoing vessel. The bosun is distinguished from other able seamen by the supervisory roles: planning, scheduling, and assigning work.

As deck crew foreman, the boatswain plans the day's work and assigns tasks to the deck crew. As work is completed, the boatswain checks on completed work for compliance with approved operating procedures.

Outside the supervisory role, the boatswain regularly inspects the vessel and performs a variety of routine, skilled, and semi-skilled duties to maintain all areas of the ship not maintained by the engineering department. These duties can include cleaning, painting, and maintaining the vessel's hull, superstructure and deck equipment as well as executing a formal preventive maintenance program. A boatswain's skills may include cargo rigging, winch operations, deck maintenance, working aloft, and other duties required during deck operations. The boatswain is well versed in the care and handling of lines, and has knowledge of knots, hitches, bends, whipping, and splices as needed to perform tasks such as mooring a vessel. The boatswain typically operates the ship's windlasses when letting go and heaving up anchors. Moreover, a boatswain may be called upon to lead firefighting efforts or other emergency procedures encountered on board. Effective boatswains are able to integrate their seafarer skills into supervising and communicating with members of deck crew with often diverse backgrounds.

Originally, on board sailing ships the boatswain was in charge of a ship's anchors, cordage, colours, deck crew and the ship's boats. The boatswain would also be in charge of the rigging while the ship was in dock. The boatswain's technical tasks were modernized with the advent of steam engines and subsequent mechanization.

A Boatswain also is responsible for doing routine pipes using what is called a Boatswain's Call. There are specific sounds which can be made with the pipe to indicate various events, such as emergency situations or notifications of meal time.

NOTABLE BOATSWAINS

A number of boatswains and naval boatswains' mates have achieved fame. Reuben James and William Wiley are famous for their heroism in the Barbary Wars and are namesakes of the ships USS Reuben James and USS Wiley. Medal of Honor recipients Francis P. Hammerberg and George Robert Cholister were U.S. Navy boatswain's mates, as was Navy Cross recipient Stephen Bass. Victoria

Cross recipients John Sheppard, John Sullivan, Henry Curtis, and John Harrison were Royal Navy boatswain's mates.

There are also a handful of boatswains and boatswain's mates in literature. The boatswain in William Shakespeare's *The Tempest* is a central character in the opening scene, which takes place aboard a ship at sea, and appears again briefly in the final scene. *Typhoon* by Joseph Conrad has a nameless boatswain who tells Captain MacWhirr of a "lump" of men going overboard during the peak of the storm. Also, the character Bill Bobstay in Gilbert and Sullivan's musical comedy *H.M.S. Pinafore* is alternatively referred to as a "bos'un" and a "boatswain's mate." Another boatswain from literature is Smee from *Peter Pan*. Lord Byron had a Newfoundland dog named Boatswain. Byron wrote the famous poem "Epitaph to a Dog" and had a monument made for him at Newstead Abbey.

Pumpman

A pumpman is an unlicensed member of the Deck Department of a merchant ship. Pumpmen are found almost exclusively on tankers, and on oil tankers in particular. Variations on the title can include chief pumpman, QMED/pumpman, and second pumpman.

A pumpman performs all work necessary for the safe and proper operation of the liquid cargo transfer system. This includes but is not limited to: liquid cargo transfer pumps, liquid cargo stripping pumps, liquid cargo coalesces and separators, strainers, filters, associated piping, valves, fittings, and deck machinery directly related to the transfer of liquid cargo.

MAINTENANCE

The pumpman's job is to keep the liquid cargo system on a tanker running. The liquid cargo system consists of several components. A major component is the pumps themselves, including not only the liquid cargo transfer pumps but also the liquid cargo stripping pumps. Another component consists of the equipment that conditions the cargo, including liquid cargo coalesces and separators, strainers, and filters. The third component consists of all the piping, valves, fittings, and deck machinery directly related to the transfer of liquid cargo. The pumpman's job has three aspects: repairing equipment when it breaks, monitoring equipment to ensure it is working, and maintaining equipment to prevent breakage. Many organizations, such as the

United States Navy use planned- and preventive-maintenance systems to guide the pumpman in identifying and scheduling required maintenance actions.

Some common activities include rebuilding valves pumps and correcting leaks in the cargo system. Pumpmen also often repack valves and glands. Pumpmen also spend a lot of time lubricating parts, such as glands, bearings and reach rods.

On some ships, pumpmen are responsible for the ballast system, room heating systems, and other engine department duties.

GENERAL DUTIES

Those that work aboard ships have general duties, in addition to their job-specific duties. For the pumpman, this largely translates to proficiency during drills and actual emergencies. The pumpman will participate in shipboard drills such as engineering casualty drills, fire drills, and collision drills, and must be able to perform assigned duties and carry out instructions safely and efficiently. As a non-entry level rating, the pumpman is expected to take the initiative in emergencies without specific orders or instructions, and have a complete knowledge of safety policies and practices. Some policies that are particularly important to the pumpman rating include handling of flammable/dangerous liquids, confined space entry procedures, and the ship's tag-out program.

WORKING CONDITIONS

Merchant mariners spend extended periods at sea. Most deep-sea mariners are hired for one or more voyages that last for several months; there is no job security after that. The length of time between voyages varies depending on job availability and personal preference.

At sea, a pumpman will usually work 8 to 12 hour days, 7 days a week.

People in water transportation occupations work in all weather conditions. Although merchant mariners try to avoid severe storms while at sea, working in damp and cold conditions often is inevitable. While it is uncommon nowadays for vessels to suffer disasters such as fire, explosion, or a sinking, workers face the possibility that they may have to abandon their craft on short notice if it collides with other vessels or runs aground. They also risk injury or death from falling overboard and hazards associated with working with machinery, heavy loads, and dangerous cargo. However, modern

safety management procedures, advanced emergency communications, and effective international rescue systems place modern mariners in a much safer position.

Most new vessels are air conditioned, soundproofed from noisy machinery, and equipped with comfortable living quarters. For some mariners, these amenities have helped ease the sometimes difficult circumstances of long periods away from home. Also, modern communications, especially email, link modern mariners to their families. Nevertheless, some mariners dislike the long periods away from home and the confinement aboard ship and consequently leave the occupation.

In the United States, the rate of unionization for these workers is about 36 percent, much higher than the average for all occupations. Consequently, merchant marine officers and seamen, both veterans and beginners, are hired for voyages through union hiring halls or directly by shipping companies. Hiring halls rank the candidates by the length of time the person has been out of work and fill open slots accordingly. Hiring halls typically are found in major seaports.

Pumpmen 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-hour 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 and off for 6 or 12 hours. Those on smaller vessels are normally assigned to one vessel and have steady employment.

A.B(Able seaman/Able bodied seaman)

An able seaman (AB) is an unlicensed member of the deck department of a merchant ship. An AB may work as a watch stander, a day worker, or a combination of these roles.

WATCHSTANDER

At sea an AB watchstander's duties include standing watch as helmsman and lookout. A helmsman is required to maintain a steady course, properly execute all rudder orders and communicate utilizing navigational terms relating to heading and steering.

A watchstander may be called upon to stand security-related watches, such as a gangway watch or anchor watch while the ship is not underway.

DAYWORKER

An AB day worker performs general maintenance, repair, sanitation and upkeep of material, equipment, and areas in the deck department. This can include maintenance of the ship's metal structures such as chipping, scraping, cleaning, priming, and painting. Areas frequently in need of such maintenance include the hull, decks, superstructure, cargo gear, and smoke stack. Day workers also frequently perform maintenance on lifeboats, rescue boats and life rafts, and emergency and damage control gear. For many vessels, being a day worker is a position granted to senior AB's, since it generally allows more time for rest and relaxation.

DUTIES

- Reports to the Bosun (Boatswain)
- Performs a variety of routine maintenance duties in order to preserve the painted surface of the ship such as chipping, cleaning, painting and removing rust spots from deck and sides of ship using hand or air chipping hammer and wire brush
- Responsible for keeping the vessel in a clean, tidy condition
- Responsible in conjunction with the Bosun for the on-the-job training of the ship's deck ratings with Ordinary Seaman rank
- Handles ropes and cables during mooring, berthing and departing operations
- Overhauls and operates emergency and safety equipment such as lifeboats and lifeboat gear
- Performs all operations connected with the launching of lifesaving equipment, lowers and raises tender boats, lifeboats or rescue boats
- The AB may be a member of the ship's firefighting party
- Stands watch at the bow or on wing of the bridge to look for obstructions in path of the vessel
- Participates in crew safety drills
- Operates tenders, lifeboats and rescue boats

Cruise Ship Able Seaman Job Requirements:

- Minimum of 3 years of experience aboard ships in the role of Able Seaman (AB) or Ordinary Seaman (OS)
- AB Able Seafarer (Deck) or the older Able Seaman endorsement (certificate of proficiency)
- Candidates must hold STCW basic safety training certificate
- Lifeboat man (LB) / Proficiency in Survival Craft and Rescue Boats certificate
- Fair command of the English language
- Ability to work under pressure in multicultural environment



O.S (Ordinary Seaman)

An ordinary seaman (OS) is an unlicensed member of the deck department of a merchant ship. The position is an apprenticeship to become an able seaman, and has been for centuries. In modern times, an OS is required to work on a ship for a specific amount of time, gaining what is referred to as "sea time." Once a sufficient amount of

sea time is acquired, the OS can apply to take a series of courses, and then a series of examinations to become certified as an able seaman.

An OS is generally not required to stand watch, but must pass examinations on watchstanding skills such as performing lookout duty and being a helmsman. Thus an OS will often be found on a ship's bridge after working hours taking a turn at the ship's wheel or being familiarized with bridge equipment.

During the apprenticeship, an OS performs a variety of duties concerned with the operation and upkeep of deck department areas and equipment. These duties vary with the type of ship, the type of voyage, the number of crewmembers, the weather, the supervisor, and any number of other variables. However, in most cases, one can expect an ordinary seaman to clean, to perform maintenance, to work with deck equipment, and to undergo on-the-job-training under the supervision of senior deck department members.

DUTIES

Scale, buff, and paint decks and superstructure. A ship's metal structure is under constant attack from the corrosive properties of seawater. Members of a ship's deck department spend a good deal of time identifying and removing rust accumulations, and refinishing affected areas with sealants, primers, and paints to slow the oxidation process.

Sweep and wash deck. Excess water and salt on deck can lead to slipping hazards as well as accelerated rusting of the deck and equipment affixed to it. Ordinary seamen often bear the brunt of the swabbing duties, and many look forward to earning their able seaman's ticket and being done with swabbing.

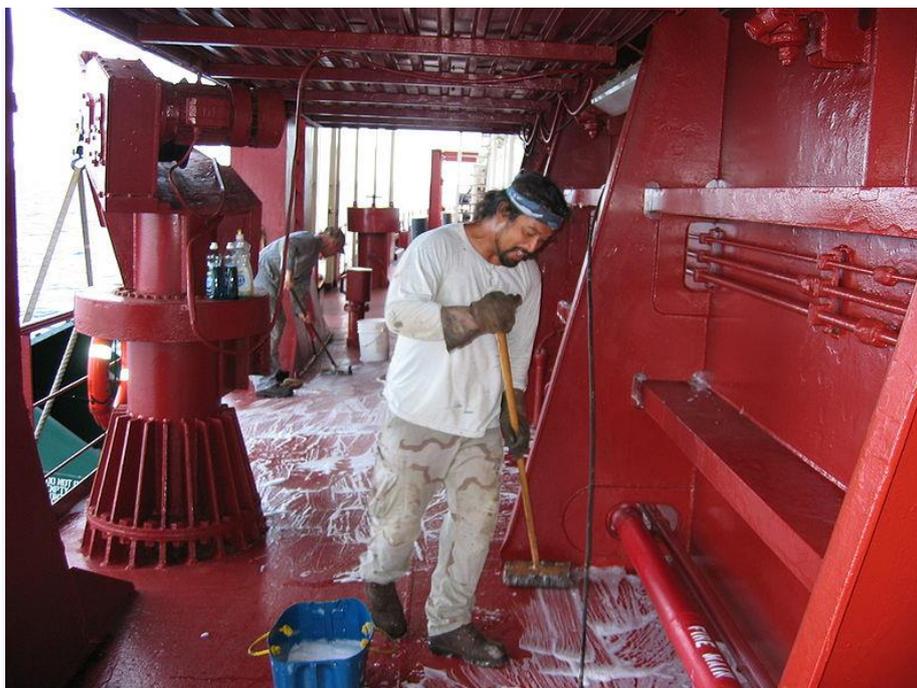
Splice wire and rope. A proficiency at splicing, knotting, and marlinspike seamanship have identified able seamen for centuries. In the modern merchant fleets, proficiency for this sort of work is a requirement for certification as an able seaman. Thus, during the period of apprenticeship, it is customary for the crew to challenge an ordinary seaman, and call upon the OS to demonstrate these marlinspike seamanship skills at regular intervals, under the guidance of senior members of the deck department.

Break out, rig, overhaul, and stow cargo-handling gear, stationary rigging, and running gear. Depending on the type of ship, it may undergo routine cargo on loads

and offloads. On container ships and roll-on roll-off ships, this requires the staging of large amounts of equipment, such as twist-locks, braces, ratchet-straps, tie-down rods, and so forth. These are generally kept in storage during a voyage, so that they won't get thrown by the ship's movement. Thus, the ordinary seaman is often called upon to move this sort of equipment from storage areas to cargo areas.

Secure cargo. Cargo must be secured, or fastened to the ship, when it is brought on board. Depending on the type of ship and the type of cargo, this process may be nearly automatic or a much customized operation. During a voyage, cargo is regularly checked to look for wear and tear, broken or compromised securements, shifting, or any other sort of noncompliance. If irregularities are found, the deck crew must respond by resecuring the cargo. Finally, near the end of the voyage, securements may be exercised or loosened to avoid problems with discharge.

Launch and recover boats. One of the proficiencies that must be demonstrated to pass the examination for able seaman is a proficiency in all aspects of work with lifeboats. International regulations require merchant ships to run regular lifeboat drills, and the ordinary seaman is customarily given a variety of duties during these drills to become familiar and comfortable with launching, commanding, and retrieving a lifeboat.



Engine department

Chief Engineer

A Marine Chief Engineer is a key member of the onboard crew, overseeing the entire Marine engineering department on the vessel and responsible for the maintenance and operation of all engineering equipment onboard the vessel.

Working in Marine Engineering as a licensed mariner, a Marine Chief Engineer job is of high rank onboard the ship, and in some cases shares equal rank with the Captain. Often the duties are split between these two posts, with the Marine Chief Engineer taking responsibility for all machinery and onboard maintenance. The Marine Chief Engineer must ensure that the engine room is suitable for inspection by coastguard authorities and ensures that there is a surplus of fuel and spare parts. In an emergency the Marine Chief Engineer will assume complete control of the engine room.

What does a Chief Engineer job description include?

- A Marine Chief Engineer holds complete responsibility for the operation of the engine room and any maintenance of machinery onboard the vessel.
- As head of Marine Engineering on board ship, the Marine Chief Engineer works closely with the Captain, occasionally holding equal rank, to ensure that the physical aspect of the vessel is completely under control.
- You must work within a small team to ensure that all maintenance is completed efficiently and in depth.
- The Marine Chief Engineer must maintain inventory for any spare parts, extra fuel and oil. This inventory must be kept up to date.
- The Marine Chief Engineer must also ensure that the engine room is well kept and prepared for inspection by higher authorities, and it is the Marine Chief Engineer's responsibility in the event that the inspection finds the room unsatisfactory.
- You must also determine the volume of oil, fuel and lube required for each voyage and ensure that substantial quantities of each is on board.
- The Marine Chief Engineer delivers general daily operation of the engine room to their primary assistant.

ESSENTIAL DUTIES

Repair and Maintenance:

- Maintains the ship in a state of readiness at all times.
- Maintains potable water and auto chlorination system.
- Maintains black water/gray water/waste tanks, treatment, and testing program.
- Monitors and ensures completion of all deficiencies noted in Cabin Maintenance Notebook.
- Oversees all bunkering operations and ensures safety and environmental compliance.
- Oversees and maintains systems including engineering, deck and hotel following preventative maintenance program on daily, weekly and monthly basis with the support of the Assistant Engineer.
- Actively participates in shipyard repair and maintenance periods.

Safety and Security:

- Follows company safety and pollution prevention policies and procedures and will request supervisory assistance/guidance when necessary.
- Conducts periodic inspections to ensure that crew observes regulations pertaining to safe vessel operation.
- Prepares the vessel for all U.S. Coast Guard annual dry-docks and other inspections.
- Participates in shore side and on board training as required by the company.
- Maintains familiarity with all duties under the company Safety Management System including Emergency Response Activities.

Key skills and qualifications of a Marine Chief Engineer:

- You must be educated to degree level and hold any other qualifications associated with Maritime engineering.
- You must have a Class 1 Certificate of Competency – Marine Chief Engineer.

- A Marine Chief Engineer must have experience in both mechanical and electrical engineering as well as experience in the oil refinery industry.
- A Marine Chief Engineer must be organized to efficiently maintain the engine room and must also be able to work under pressure and within time constraints in the event of an emergency. Man management skills are essential for a role in Marine Engineering at a senior level.
- The Marine Chief Engineer must also be able to communicate well as part of a small team, and work cooperatively with other colleagues.
- You must be proficient in any software associated with engineering.



Second Engineer

The 2nd engineer provides utmost assistance to the Chief engineer for running the ship efficiently. Moreover, second engineer is also in-charge of all the operational engineers and the crew of the engine room he ensures for their personnel safety and routine duties. He also plans the overall maintenance of all the machinery present in the engine room of the ship.

Duties of 2nd Engineer

A brief description of the duties of second engineer is as follows:

Safety

1. **Safety of Personnel:** Second engineer is responsible for risk assessment, briefing and safety training of the entire engine crew, especially for the junior engineers and fresh crew.
2. **LSA and FFA:** He is responsible for operation and maintenance of life saving appliances and firefighting appliances.
3. **Emergency equipment:** All the emergency machinery and equipment under SOLAS are responsibility of second engineer.
4. **Rest hours:** The rest hour of all the individual working in the engine room has to be taken care of by the second engineer as per STCW.

Pollution Prevention

1. **Pollution Prevention Machineries:** He is the person in-charge of Pollution prevention equipment onboard like OWS, Sewage plant, incinerator etc.
2. **Oil transfer:** He is responsible for all oil transfer operations carried out onboard including bunkering.
3. **Pollution prevention plan:** He is responsible for implementation of SOPEP and other the equipment involved with the same.
4. **Sludge and bilge:** Second engineer has to keep the engine room bilge clean of oil and oily water. All tank parameters are to be recorded for sludge and bilge system.
5. **Regulations:** All the rules and regulation related to MARPOL has to be applied and implemented by the second engineer.

Engine Room Management

1. **Responsibility:** He is the in-charge for managing the engine room staff and carrying out duties of the engine room.
2. **Assistance:** He directly reports to the chief engineer and also becomes the in-charge of the engine room on his absence/behalf.
3. **Job distribution:** He distributes and assigns duties to all the engine crew members and acts as supervisor to them.
4. **Housekeeping:** He is also the in-charge of engine room housekeeping and engine room garbage management.
5. **Spares and inventory:** Second engineer is responsible for storing all the spares properly and keeping and maintaining record of the spares' inventory.

Operation and Maintenance of Machinery

1. **Engine room and deck machinery:** The second engineer is responsible for the maintenance of all the engine room and deck machinery.
2. **Safe operation:** He is responsible to make sure all the machineries and safety systems are working safely, efficiently and within the provided parameters.
3. **PMS and BMS:** Planned maintenance system(PMS) is to be implemented by the second engineer and in case of any breakdown maintenance (BMS), should be immediately taken care of by him.

Documentation

1. **Record keeping:** Different records of the engine room have to be maintained and updated regularly. This is the responsibility of the second engineer. A few examples of important records are logbook, bell book, Saturday or Monday routine book etc.
2. **Spare Inventory:** All the spares for engine room machineries like pumps, auxiliary engine are to be stored and inventory to be maintained and updated regularly.
3. **Oil inventory:** The quantity for oil present in the tanks for machinery operation like lube oil, fuel or diesel oil has to be recorded in an oil record book. A track for the next bunker order also needs to be maintained.
4. **PMS:** The planned maintenance system paper work like updating the maintenance data etc. is to be completed under the second engineer supervision.

Training

1. He is responsible for familiarizing the crew member with safety features of the ship such as emergency escape, life boat, sopep etc.
2. He should supervise the engine crew for training them to operate pollution prevention machineries like OWS, sewage plant etc.
3. He is responsible to train the crew members for various emergency situations like flooding, fire, pirates attack and abandon ship etc.

This is a general overview of the duties of second engineer on board a ship. Second engineer is the most influencing personality in the engine room and needs to have great leadership quality apart from stoic and cool mindset.

Third Engineer

A candidate for the 3rd Engineer position should be a qualified specialist in accident-free technical and equipment maintenance; have a higher engineering education: qualified mechanic with not less than 3 years of experience of accident free services.

- The 3rd Engineer reports to the Senior Engineer on duty, who then reports to the Chief Engineer
- Coordination with AB's, Motorman
- Subordinate positions: Nil
- During absence: duly appointed person substitutes the 3rd Engineer and accrues the correspondent rights and responsibility for the duties he is appointed for

The main task of the 3rd Engineer is: To assist the Chief Engineer and 2nd Engineer in accident free technical maintenance of the vessel and equipment; to perform vessel technical services in accordance with the International Conventions, local regulations and all the normative documents concerning navigation safety.

The 3rd Engineer must know:

1. Resolutions International Marine Organization Convention
2. Marine Shipping Register rules
3. Ship's manual & Regulations
4. Marine Shipping Code of RK
5. Convention on International Regulations for Preventing Collisions at Sea (COLREG), 1972
6. ISM Code
7. ISPS Code
8. The company QHSE-MS and policies
9. Understand and adhere to BLACK llp PTW Procedures and Lock-Out/Tag-Out Procedures)

10. Possess valid Medical First Aid Training Certificate

JOB RESPONSIBILITIES

The 3rd Engineer of the vessel should fulfill the following tasks:

1. Assist with reliable performance, proper maintenance and servicing of the equipment under the engine department's control
2. Monitors fuel, lubricants, water supplies and maintenance supplies
3. Comply with the implementation of BLACK llp HSE Policies, as well as those of our Clients and local authorities
4. Ensure proper use of BLACK llp equipment assigned to the engineering department. Inform the Senior Engineer on duty, of any malfunctioning equipment;

Engine cadet

In the Merchant Navy, a cadet is an officer under training in much the same way as the military context. All Cadets receive training in firefighting, first aid and survival techniques.

Cadets choose either one of two branches for professional development. Deck cadets train in the fields of navigation, ship handling and cargo handling as well as maritime law. Engineering cadets train to become marine engineers, and as such their fields encompass a range of theoretical and practical engineering subjects, including Mechanical engineering, thermodynamics, control engineering, applied mathematics, welding and fabrication. Engineering practice is mostly learned during the cadet's assignment to a ship.

The cadet training scheme differs from country to country, but the learning objectives are always the same. In the UK for example, cadets undergo training in a block-release format, spending a shorter time in college before going to sea for a short assignment after which the cadet returns to college. Other countries allow the cadet to finish his/her degree before going to sea, but most countries seem to prefer a system

where a cadet completes all of his/her sea time before returning to college for the final year of their degree.

The engine cadet closely follows the instructions of the First Engineer and attends the engine control room usually as part of the First Engineer's watch. The Engine Cadet assists in the maintenance and repair of engine room equipment, as well as other mechanical equipment throughout the ship. As part of the training process duties that are customary to the engine department will be assigned to the Engine Cadet by the Chief Engineer. Although on training the professional performance of the Engine Cadet will be evaluated for continued long-term career with the cruise line. Upon attainment of a National License and completion of at least one assignment aboard a cruise ship the most qualified candidates with the best performance evaluations could be promoted to Third Engineer position depending on current openings in the company's fleet. Requirements: completion of a four year Maritime Engineering program OR current enrolment in an accredited Maritime Engineering program. National License (STCW III/1) and valid medical certificate required. Excellent verbal and written command of the English language required.

Electrical Engineer

All the machinery onboard ship is a combination of mechanical and electrical systems. The modern day shipping is more reliable on automations and electronics whose knowledge and maintenance can only be handled by an engineer expert in the electrical field. Marine electrical officer engineers are perfect for such jobs and that's why they hold an important role on ship and in offshore industry.

Electrical engineer is one of the most vital positions in the technical hierarchy of a ship and engineer is responsible for his assigned work under the chief engineer's instructions.

Some shipping companies do not carry electrical officers on their ship to cut down the manning cost and the electrical duties are carried by someone from the engineer's side, normally third engineer. However, many companies realized that electrical and electronic system requires some extra attention and therefore require an expert to attend them.

As the technology is advancing, more and more automations and electronic circuit is replacing conventional and electrical systems. Hence the international Maritime Organization (IMO) amended STCW 95 on 25th June 2010 known as Manila amendment, to introduce a certified position of Electro-technical officer in place of electrical officer.

The general duties of electrical engineer or Electro-technical officer are:

- He is responsible for maintenance of all the electrical motors on ship i.e. in engine room and on deck.
- He is in charge of maintenance of all switchboard including main switchboard and emergency switchboard.
- He is responsible for maintenance of fire detectors and fire alarm system.
- He has to maintain all the ship's alarm system.
- He is responsible for the electronic system fitted onboard ship.
- He is responsible for the ship's navigational lights and other navigational equipment.
- He is responsible for all the batteries that are connected to machineries onboard. It includes:
 - Emergency batteries for alarm and lights
 - Lifeboat batteries
 - Batteries for emergency generator
 - Other batteries fitted onboard
- He is responsible for maintaining refrigeration unit in the engine room
- He has to take care of air conditioning unit of the vessel.

- Electrical officer is responsible for maintaining refrigerated containers carried on container ship.
- He is responsible for cargo and engine room cranes electrical system.
- He has to carry out routine maintenance for main engine alarms and trips along with the chief engineer.
- During the time of maneuvering, he has to be present in the engine room along with other engineers to tackle any kind of electrical and other emergencies.
- Electrical officer can assist in watch keeping routines at desired time by the chief engineer.
- He has to assist ship's engineer and deck officer in all kind of electrical problems.

Even the post of electrical officer is not a compulsion on a ship, but due to technicalities and complex knowledge requirement of the electrical and electronic system, they are extensively present in the shipping industry.



Wiper/Oiler

A wiper is the most junior crewmember in the engine room of a ship. The role of a wiper consists of cleaning the engine spaces and machinery, and assisting the engineers as directed.

The basic duties and responsibilities of the oiler/wiper are:

- A. To obey all lawful commands.
- B. To have the training and experience necessary to fill the billet or berth for which employed.
- C. To report on board at agreed times.
- D. To perform all duties in a seamanlike manner.
- E. To submit to normal discipline.
- F. To stand engine room watches.
- G. To assist the deck crew as required
- H. To carry out vessel and equipment cleaning, maintenance and painting duties.
- I. To assist in loading, unloading, discharging, or receipt of any and all equipment, supplies and cargo.
- J. To be thoroughly familiar with assigned duties for drills and emergencies.
- K. To report promptly the existence of all potentially hazardous conditions and to cause or effect the commencement of proper remedial or emergency actions to handle or correct the situation.
- L. To maintain personal hygiene, including clothing, and keep living areas in a clean and sanitary condition.
- M. To report promptly to the Master or Mate the existence of any personal medical problem or injury.
- N. To assist in the maintenance of proper order and discipline on the vessel.

Physical Requirements for the Oiler/Wiper

The Oiler/Wiper must be physically and mentally able to perform their duties in all weather conditions. The Oiler/Wiper must also:

- o be able to perform his duties under any weather and sea conditions
- o be able to work in confined spaces

- o be able to work outdoors in all weather conditions
- o be able to work aloft
- o be able to work over head (painting, chipping, etc.)
- o be able to work with pneumatic and power tools
- o be able to work bent over or squatting for long periods of time
- o be able to lift 30 pounds and carry it 50 feet
- o be able to walk up a ships ladder while the vessel is rolling and/or pitching
- o be able to climb a 30 foot mast
- o be able to enter a tank opening 18 inches in diameter
- o be able to throw a mooring line 15 feet
- o be able to stack 1.25" anchor chain in a confined chain lock
- o be able to wear and use oxygen breathing apparatus
- o be able to wear the following safety equipment:
 - a. safety steel toe shoes
 - b. safety goggles
 - c. wear protectors (in the engine room)
 - d. protective gloves



Saloon Department

Chief Cook

The third mate is also generally an active participant in fire and boat drills. A chief cook (often shortened to cook) is a senior unlicensed crewmember working in the steward's department of a merchant ship.

The chief cook directs and participates in the preparation and serving of meals; determines timing and sequence of operations required to meet serving times; inspects galley and equipment for cleanliness and proper storage and preparation of food. The cook may plan or assist in planning meals and taking inventory of stores and equipment.

A chief cook's duties may overlap with those of the steward's assistant, the chief steward, and other steward's department crewmembers.

JOB RESPONSIBILITIES

The Chief cook is responsible for the following:

1. Cooks quality meals in sufficient quantities taking into account crew and clients demands
2. Utilizes and maintains properly all the items in their control
3. To report to the Captain in timely manner about any inadequacy and observations of the area under their control
4. To prepare and submit to the Captain the request for foods, supplies as well as write off documents for items in their control
5. Ensure the galley and mess are clean and hygienic, that all trash is removed daily and that regular pest control is conducted
6. Implement and control the company waste segregation policies as applicable in the Galley and Mess Room
7. Facilitate weekly hygiene inspections, either internally or by means of any Client Representative

8. To comply with the implementation of the Company HSE policies, as well as those of our Clients and Local authorities
9. Ensure any deficiencies in the QHSE program are reported to enable corrective measures to be taken
10. Familiarize themselves and those under their supervision with the contingency and emergency response plan

Chief's Cook Assistant

A steward's assistant (SA) is an unlicensed, entry-level crewmember in the Steward's department of a merchant ship. This position can also be referred to as steward (the usual term on British ships), galley utility man, mess man, supply or waiter.

The role of the SA consists mainly of stocking, cleaning and assisting with the preparation and serving of meals.

The SA often assists the steward by removing stocks such as food, linen, and utensils and making sure they arrive where they're needed. Closely involved with the storeroom operations, the SA will assist in taking inventory. The SA also is typically in charge of the ship's linens, not only sorting, counting, and stocking but also issuing them to the crew.

The SA is a food handler, and perhaps most visible while assisting the chief cook with the serving of meals. Depending on the ship, this can include taking orders and delivering the food to the tables in the ship's mess room and officer's saloon. The SA also customarily sets out the "night lunches" for watch standers preparing to start late night watches, as well as setting and clearing tables.

A ship's galley, pantry, and eating areas are notoriously hard to keep clean and sanitary, and this activity keeps the SA busy for much of his time. The SA must clean the ship's mess and officer's saloon, and the gear in both. This includes keeping the decks clean by sweeping and scrubbing. The SA disposes of trash and garbage and keeps garbage cans clean. Other tasks could include defrosting and cleansing refrigerators, cleaning bright work and woodwork, and removing grease and finger marks from paintwork.

Depending on the ship and crewing, the SA may be responsible for other cleaning duties, such as stairways and passageways, laundry rooms, refrigerated spaces, storerooms, linen lockers, the ship's office, the radio room and any other areas assigned to the steward's department. An SA may be responsible for making up bunks and cleaning rooms, toilets, and showers of officers and others.

In the United States Merchant Marine, in order to be occupied as an SA a person has to have a Merchant Mariner's Document issued by the United States Coast Guard. Because of international conventions and agreements, all SA's who sail internationally are similarly documented by their respective countries.

Manila Amendments

Key new training requirements

Changes to Competence Tables

Various changes to the STCW Competence Tables are included in the Manila Amendments. Important examples include the need for deck officers to be competent in the use of ECDIS and for engineer officers to be able to operate pollution prevention equipment. More generally, additional emphasis is given to environment management.

Leadership and Teamwork

For deck and engine officers, substantial new competence requirements related to leadership, teamwork and managerial skills have been added. Assertiveness training for all seafarers has also been included, given its importance not only for those who have to direct operations but also for those in lower grades who may have to communicate on safety matters with senior officers, the master and/or shore personnel.

Training Record Books

It will be mandatory for all deck and engine rating trainees to demonstrate competence through the use of on board training record books, with completion to be supervised by officers responsible for on board training (in addition to the existing requirements applicable to officer trainees).

Mandatory Security Training

As well as specific training and certification requirements for Ship Security Officers, new security familiarization and training requirements have been introduced for all grades of

shipboard personnel. Seafarers may already comply with these new security requirements through seagoing service or previous training. Refresher Training An important feature of the Manila amendments is the additional emphasis given to the need for seafarers' standards of competence to be maintained throughout their careers. All seafarers are now required to provide evidence of appropriate levels of competence in basic safety training (including survival, fire-fighting, first aid, and personal safety) every five years. Much of this refresher training can be conducted on board, but some will require training at shore based institutions

Seafarers who hold certificates of proficiency in survival craft, rescue boats (CPSC) and fast rescue boats or advanced firefighting will also have to show that they have maintained their levels of competence in these skills every five years.

Tanker Training

STCW now contains new, comprehensive Competence Tables for training in oil, chemical and gas tanker operations, at both basic and advanced levels. (New guidance has also been developed for crew on offshore support vessels and all ships in polar waters.)

New Seafarer Grades and Certification

STCW 2010 introduces extensive training and certification requirements for the new grades of 'Able Seafarer Deck' and 'Able Seafarer Engine'. These are in addition to the current navigational and engine watch rating requirements which are otherwise unchanged. New competence standards and certification for the position of 'Electro-Technical Officer' and 'Electro-Technical Rating' have also been established, in recognition of a position already widely established, particularly in the passenger ship industry. It should be noted that there are many interchangeable competences between the Able Seafarer Engine and the Electro-Technical Rating. It is therefore possible to consider the Electro-Technical Rating aspects as a supplement to the Able Seafarer Engine training, which should contribute to career development for such seafarers and might enhance the flexibility of their role on board.

Medical Standards

Additional medical fitness standards and requirements for certification have been introduced.

Prevention of Unsafe Alcohol Use

These include a specific limit of 0.05% blood alcohol level or 0.25mg/l alcohol in the breath.

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