

Deck Officer's Handbook -

**A Resource Guide to
Nautical Science**

Marine Insight[©]

A Resource Guide to Nautical Science

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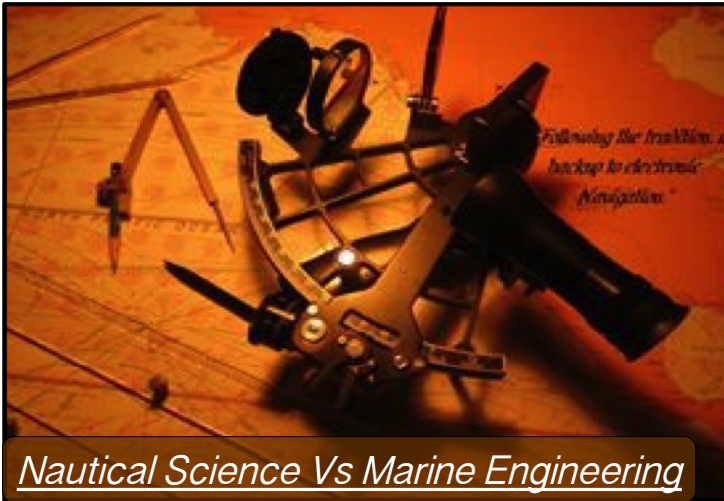


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1. Nautical Science vs. Marine Engineering
2. Deck vs. Engine Department
3. How to Become Deck Officer?
4. Hierarchy in Deck Department
5. Important Documents for Deck Officers
6. Important Courses for Deck Officers
7. Important Books for Deck Officers
8. Further Studies Option for Deck Officers
9. Ship Navigation & Operation Resources



Nautical Science Vs Marine Engineering



Students interested in joining merchant navy are often confused between deck department and engine department – the two functioning entities on board ships.

In order to have a successful career at sea, it is important you make the right decisions at the start. Degrees in nautical science or marine engineering are two ways in which one can get a job on ships. However, choosing between engine and deck side departments is one such decision that bothers students greatly.

There have been several cases wherein students have taken up deck or engine side just to realize later that they are more inclined towards something else. Thus, it is extremely important that one knows in advance what field they are going to pursue and what job they would be doing later on ships.

So what is the difference between nautical science and marine engineering degrees? How would you know which one to choose and what to expect from each?

Difference between Marine Engineering and Nautical Science Degrees

Marine Engineering

[Marine engineering](#) is a field that deals with the engineering aspect of the maritime industry. Like any conventional engineering course, marine engineering is a four year course which prepares an individual to become an engineer on ships.

Marine engineering is all about machinery on ships, boats, yachts, or any sea going vessel. There are several other technical streams that sprout out from this field.

The curriculum of the course focuses on teaching specialized knowledge of both theoretical and practical marine and mechanical engineering.

Greater importance is given to impart skills and competencies that are required to operate and maintain machinery on board ships.

The subjects taught in the first and second year of the course are almost the same as those taught in conventional mechanical engineering.

However, the main aim is to introduce engineering sciences to the students and to make them understand the applications of those sciences in various aspects of marine engineering.

The third and fourth years are totally dedicated to impart marine technical knowledge. Both theoretical and practical aspects of marine machinery are covered with special focus on ship's operation and maintenance of marine machinery.

Practical knowledge through laboratory and workshop training is provided throughout the four years of the program, so that students get hands-on knowledge of dismantling and maintenance of machines on ships.

Nautical Science

While marine engineering makes an individual a ship's engineer, nautical science prepares a person to become a deck officer. Nautical science is a three years course after which the student joins a ship as a trainee deck officer.

After completing sufficient time at the sea and clearing required competency exams, the officer climbs the hierarchy level.

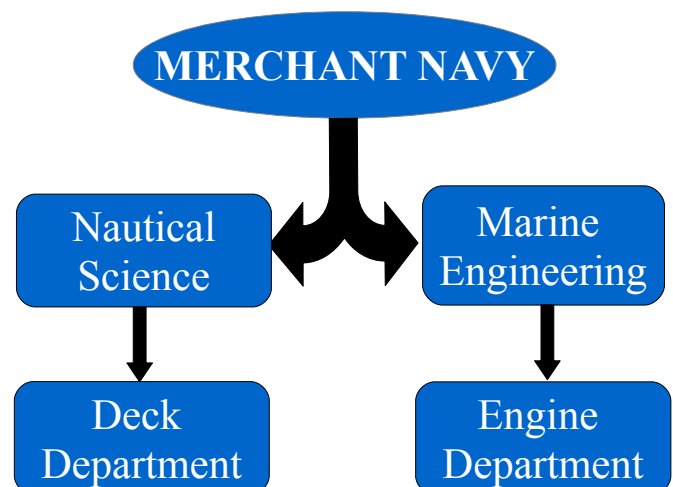
Nautical science imparts naval technology knowledge which is important to become a deck officer on board ships.

Theoretical and practical knowledge required for navigation, [cargo operation](#), and ship maintenance and operation is taught during the three years course, along with exposure to some areas of humanities and social sciences.

Hands-on training is extremely important as a deck officer and thus detailed procedure and maintenance techniques of importance deck machinery is an integral part of this course.

Emphasis is also given on providing specialized knowledge on subjects such as seamanship and working in [marine environment](#).

Several modular courses that are required to join a ship are also included in the syllabus of nautical science, along with special training on sailing, boat handling, rope and rope ladder climbing.





Deck Vs Engine Department



People planning to join Merchant Navy often ask us what is better – engine department or the deck department? Though there is no specific answer to this question, we try to explain them about the important aspects of both the sides.

Before deciding between engine and deck departments, we ask students to keep [these five things in mind before joining merchant navy](#).

Anyone who is confused between engine side and deck side, it is important that he or she first understands the difference between Nautical Science and Marine engineering. (People who study nautical science become deck officers and those who study marine engineering become marine engineers).

Knowing about various subjects one has to learn in each of these streams helps to get rid of most of the doubts involved with deciding between the two departments.

A career in merchant navy is unlike any other career and every person planning a career in the same would know about it.

In case you don't, read them here - [Reasons as to why a career in merchant navy is unlike any other](#).

People confused between engine and deck sides, often have queries regarding the following aspects:



Let's look at each aspect individually.

Salary structure

Salary structure of both engine and deck departments is almost the same. This means that officers at corresponding rank in both the departments earn almost equally. The article on [average range of salaries of officers on ships](#) would help to resolve the doubt.

Job profile

Though the job profile and nature of duties of officers in both the department are different, at the end it is an individual's choice as to what side to choose. Work profile in both engine and deck departments is challenging and rewarding. It's the person's prerogative to decide between engine side and navigation side.

Future prospects

A ship cannot run without engine officers and deck officers. Thus the need of both the type of officers will always be there (Unless they come up with totally unmanned ships). Both the sides have bright and respectable futures.

Placement and job market

This is one aspect which bothers the most especially to those who are just entering the field. Though there are [several reasons because of which deck cadets and junior marine engineers are not getting jobs](#), the situation is expected to improve soon.

However, it is to note that employment problems are prominent in every field at the starting level and it's the same with merchant navy as well.

Officers of higher ranks from both engine and deck departments are always in demand.

Onshore opportunities

For those who also consider on shore job prospects must note that there are [several opportunities on shore of merchant navy officers](#).

Experienced marine engineers and deck officers can get jobs in the management department of shipping companies.

Marine engineers can take up shore based jobs as Design, Seismic, and Maintenance Engineers. They can also take up the job of trainee surveyors. Nautical officers as well as marine engineers are also required in Chartering / Ship Brokerage firms

However it is advisable to sail for certain years and take good amount of experience before shifting to shore jobs.

Those who are interested in future studies can [do an MBA in Shipping](#) and improve their job options on shore.



How to Become a Deck Officer?

Thus, a career in both engine and deck department is rewarding and challenging. At the end, it is up to the individual to decide what he or she is more passionate about and interested in.

The Merchant Navy is a lucrative and an enjoyable line of work that demands a great deal of hard work right from the day you step into a maritime academy, whether it is nautical science or marine engineering.

The role of a Deck Officer in merchant navy is indispensable on board and it is important for a prospective Cadet to know what a deck officer does on board ships.

A Deck Officer works in the execution of a variety of tasks- namely navigation and maneuvering of the vessel, handling of all safety equipment on board, and handling cargo, communications, and safety.

All of this seemingly daunting work is designated, divided, and handled among the Trainee Cadet, 3rd Officer, 2nd Officer,

Chief Officer, under the supreme supervision of the Captain of the vessel.

The prerequisites to join a maritime course pertaining to the Merchant Navy are generally kept low, except the [physical fitness and medical requirements](#).

However, it is advised that an interested individual inquire with the respective institute offering the course in order to get the exact criterion.

The following courses outlined are those that will help an individual a great deal in determining what's best for a chosen path to becoming a Deck Officer.

1. B.S. Nautical Technology

This is a 3+1 years course that is available only in India. The degree in question here is offered by the Birla Institute of Technology and Science, Pilani, and is offered in two of the institutes in India. The first 3 years of the merchant navy course is spent in the institute where a variety of subjects are

taught extensively. The final year is devoted to an internship on board a vessel as a deck cadet for a minimum period of 12 months.

The internship period is extremely crucial as the degree is only conferred when an individual finishes his sea time.

The 2nd Mate license is obtained after finishing the mandatory sea time, upon clearing the MMD (Mercantile Marine Department) examinations.

There are a total of 48 subjects covered in the study period of 3 years, a detailed list of which can be obtained from the website/brochure of the institutes concerned.

Following are the institutes in India that offer this merchant navy program to become a deck officer:

- [Tolani Maritime Institute \(TMI\), Pune](#)
- [RL Institute of Nautical Sciences \(RLINS\), Madurai](#)

2. B.Sc. Nautical Science

This is a 3 years course that is available in India. In the UK, this is a 4 years course. However, the method incorporated in the completion of this course varies between India and the UK.

In India, a deck cadet spends his entire 3 years in a Maritime Institute and gets a degree after the course ends. Following that, he seeks employment and gets on board a

ship as a Trainee Deck Officer. In the UK, work and learning are incorporated together within the course, with the core modules and work based learning divided aptly within the four years of study.

There are a host of Institutes offering this merchant navy program, the notable ones being:

- [Academy of Maritime Education and Training \(AMET\), Chennai](#)
- [Liverpool John Moores University \(LJMU\), Liverpool](#)

3. HND Nautical Science

HND stands for the Higher National Diploma. This is a 2 years course that is conducted between an Indian Institute and one in the UK in liaison with each other.

The first 39-40 weeks of the course is spent studying at an Institute in India whereas the next 39-40 weeks is spent at an Institute in the UK.

Deck cadets must sail for a minimum period of 15 months after the completion of the course. Thereafter a 3 months 2nd Mate Preparatory course must be undertaken at the deck cadets' respective Institute.

Upon clearing the examination conducted by the MCA (Maritime and Coastguard Agency), the Cadet is awarded the 2nd Mate UK license to become a certified deck officer. The notable HND courses of merchant navy are conducted by:

- [AMET University, Chennai in collaboration with South Tyneside College, UK](#)
- [International Maritime Institute, Noida in collaboration with Glasgow College of Nautical Studies, Scotland](#)

4. *Diploma in Nautical Science*

This is a 1 year course under the [Indian Maritime University](#). Prospective deck cadets undergo a year long period of study followed by a sailing period of a minimum of 36 months.

There are many merchant navy institutes offering this course. It is advisable to check the Directorate General of Shipping and the Indian Maritime University websites for institute approvals and course details.

In the United States, the Merchant Marine is a civilian auxiliary of the US Navy.

The system followed in the US is a very intensive one. Candidates should refer to one of the Academy websites for a methodical procedure with regard to the US Merchant Marine.

[Check the list of best maritime colleges of the United States for more information](#)

The most important aspect of choosing the right merchant navy Institute and course to become a deck officer is to ensure that the course is approved by the respective Government Authority of the country.

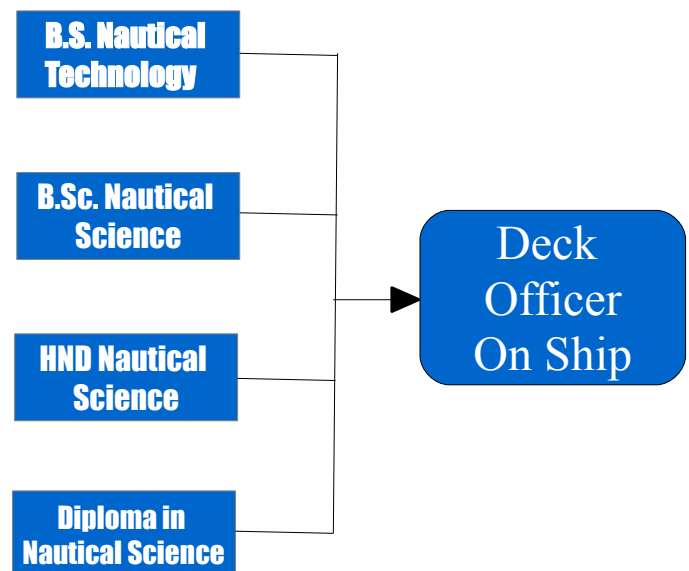
It is also advisable to know the nation issuing

the Continuous Discharge Certificate (CDC) to prevent any confusion later on.

In addition to the above mentioned courses, several shipping companies also conduct sponsorship programs for deck officers.

Choosing the right path to becoming a Deck Officer in merchant navy can play a vital role in having a solid kick-start to the career.

Apart from good memories and an unforgettable college life, a proper institute catered to your requirements, can help an individual develop the right attitude towards this line of work.





Hierarchy Level in Deck Department

As mentioned earlier, the crew on a ship is divided mainly into two departments; the Deck and the Engine department. The deck department is concerned with the watch keeping on the bridge and maintenance and repair of ship's cargo gear, accommodation and also the ship's lifesaving equipment.

Getting confused with all the various ranks and their duties is quite easy. So in order to understand ranks in the deck department and their job a little better, here is a lowdown of the ship's deck department.

Captain: The highest authority on the ship, the rank of the captain is the most responsible on the vessel. All the key operations and decisions have to be taken with the consent and knowledge of the captain.

Chief Officer: The [Chief Officer](#), or Chief Mate as he is often called, is second in position to the Captain. He is in charge of the deck department and also the deck crew. He oversees all the cargo operations

including its handling and stability. He is also responsible for training the deck crew in safety and rescue operations besides other emergency procedures.

Second Officer: Second Officer or second mate is responsible for all the navigation jobs and holds his rank below the Chief Mate. A second mate has the responsibility of maintaining the charts and also plots the routes for navigation. Although on various oil tankers a second mate may assist the chief officer for tank cleaning and maintenance as well.

Third Officer: A rank below the Second mate, a Third Mate may not be present on all ships, although all big vessels generally do have this rank onboard. The third mate is mainly responsible for all the safety related operations onboard which include regular maintenance of all the firefighting equipment and lifeboats.

Deck Cadet: A deck cadet is more of a nautical science graduate or trainee who

works directly under the chief mate on the ship. Normally a deck cadet has to complete one full year of training on board under the senior ranks before he can apply for examination/promotion.

Boatswain: A Boatswain, pronounced as Bosun, is in charge of all the deck crew and he supervises the crew on board. Working in association with the chief mate, a bosun plans the tasks for the crew and oversees the work given.

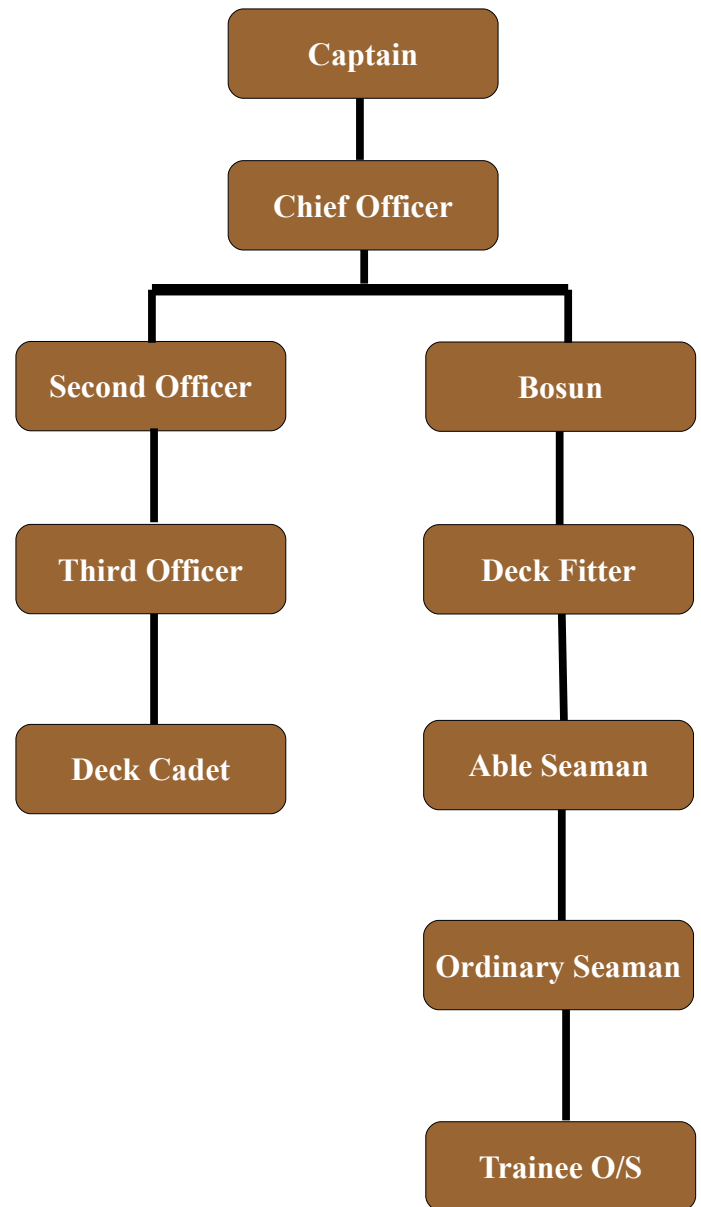
Deck Fitter: A deck fitter is responsible for hot work and repairing/ fitting operations required and works under the chief officer.

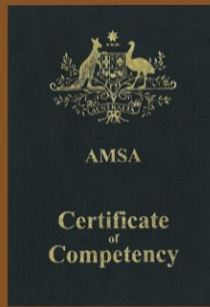
Able Seaman: ABs, as they are fondly called, are the members of the deck department who keep watches along with the officers on the bridge. While sailing, the job of an AB is to carry out navigational duties on bridge, like maintaining the course and standing as a lookout during night watch.

Ordinary Seaman: The ordinary seaman, or the OS, is the lower rank on the deck side and is responsible for variety of duties on the deck. An OS is often required to wash and sweep the deck besides doing various deck side jobs like painting, scaling and buffing.

Trainee OS: He is a fresher in the deck department who works as a trainee and

performs all the work required for an ordinary seaman.





Important Documents for Deck Officers

For those young cadets who don't have any immediate association with the Merchant Navy field, the time after graduation from a maritime academy can be rather confusing.

With all the maritime courses and other processes required under protocol, it is justified that a fresh deck cadet would find it difficult to deal with the huge load of documentation and paperwork required after passing out.

Also, in the quest for seeking employment, deck cadets often forget to get their important documentations ready. It is therefore important that deck cadets do not ignore the necessity to keep all documentations ready, in order that they may produce them to the employer whenever required.

Also, prior to seeking employment, during the visits to Mercantile Marine Department (MMD) to get a variety of work done, these documents must be kept assorted in folder at all times.

CDC (Continuous Discharge Certificate):

Perhaps the most important thing for a seafarer, this booklet must be kept handy at all times. The CDC number is always required when filling out application forms for a job, to do maritime courses, for endorsement etc.

INDoS (Indian Database of Seafarers):

Another important document that must be carried at all times. [Read more about INDoS number here](#). Every country has their own system of maritime database and fresh deck cadets must apply for their number as soon as possible.

STCW (Standards of Training, Certification and Watch keeping)

Certificates: The mandatory [STCW certificates](#) comprising of PST (Personal Survival Techniques), PSSR (Personal Safety and Social Responsibility), EFA (Elementary First Aid), FFFF (Fire Prevention and Fire Fighting). All these are mandatory courses

which are to be carried out by sea going professionals.

Passport: The ultimate proof of identity for seafarers apart from CDC. Seafarers are always advised to keep passport with them when getting documentation related work done. Deck cadets must carry this everywhere.

Photographs: It is always necessary to carry a few extra copies of passport sized photographs while going for documentation.

Course Completion Certificate: The proof of having completed the tenure of study at college. A certificate of degree/diploma is required for all documentation processes.

Xth/XIth mark sheet: These may be required for proof of age and to verify other important details.

As mentioned earlier, a few visits to the MMD is required to get a variety of necessary work done. Following are the procedures to be completed before setting sail for which, the above mentioned documents shall be required:

1. Yellow Fever Vaccination: This vaccination is required for individuals traveling to South American and African countries. The shot can be obtained from the MMD (Mercantile Marine Department) for a fee of INR 300/- (Will vary according to the country).

For this, documents required are photocopies of front and back pages of the CDC and Passport. Prior booking for the vaccination has to be done from the office of the Port Health Officer. The vaccination is valid for 10 years. This can be obtained even without an offer letter from a company.

2. OTF/GTF/CTF: Depending on the vessel the cadet will be sailing on, the respective course needs to be done for the particular type of vessel (Oil/Gas/Chemical).

Always check for DG approval status on the website (www.dgshipping.com) before choosing the course at an institute.

3. Dangerous Cargo Endorsement (DCE): The OTF/GTF/CTF certificate completed can be rendered invalid if it is not endorsed at the MMD.

Depending on the ship the Cadet will be sailing on, the necessary certificate (OTF/GTF/CTF) should be endorsed for a fee.

Remember to include each and every document mentioned in the DCE checklist. The medical certificate is a bit tricky so it is advised to go through the exact tests and checkups required for the medical certificate to be considered appropriate.



Important Courses for Deck Officers

Merchant Navy is a line of work that requires constant up-gradation of knowledge, primarily professionally. The end of maritime college just marks a slight beginning in a long tenure of academic correlation because in a highly professional field such as this, the necessity to remain at the top of the game is indispensable.

Most colleges make the cadets undergo the mandatory [STCW courses](#). Upon graduating, there's a host of other courses that need to be completed by cadets, for example, Oil Tanker Familiarization. There's also a fair number of courses to be completed at the end of the cadet-ship on board such as [GMDSS](#) course.

Below is a comprehensive list of the courses required to be completed by a junior officer:

Global Maritime Distress Safety System (GMDSS) Course: It's about radio communication and distress situations; Communication in times of distress and emergency, the equipment used and how

they're used. Urgency, distress, safety and routine communication with radio equipment on board and their overall operation.

GOC is the General Operator's certificate given to the person who successfully finishes this course.

Radar Observer Course (ROC/ARPA): This course deals with usage of the [ship radar](#) and the plotting system. Details about the user-functions of the radar are also included.

Elementary First Aid (EFA): Includes knowledge of basic first aid equipment and skills required on ships.

Medical First Aid (MFA): It includes detailed first aid knowledge required for ships, i.e, an enhanced version of EFA.

Basic Fire Fighting (BFF): Teaches skills and requirements of basic fire fighting techniques on ships (basic fire fighting equipment and its use/operation).

Advanced Fire Fighting (AFF):

Advanced fire fighting skills are taught in this course (Includes advanced fire fighting equipment and its use. An enhanced version of BFF).

Personal Survival Techniques (PST):

Officers are taught personal survival techniques that are required at the sea (basic survival techniques and life saving appliances available on ships).

Proficiency in Survival Craft and Rescue Boat (PSCRB): Provides knowledge on survival craft and rescue boat of ships (It's an enhanced version of PST. details of lifeboat/rescue boat, MOB-boat).

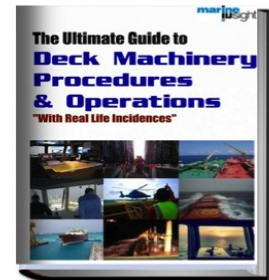
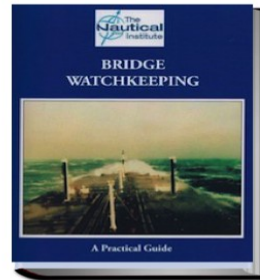
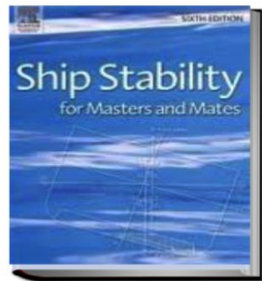
CTF/OTF/GTF: Container/Oil/Gas tanker familiarization course - Deals with all the important aspects of each type of ship.

PSSR- Personal Safety and Social

Responsibility: Provides knowledge required by seafarers to ensure their personal safety and social responsibility on ships.

ECDIS Training: As per the [new STCW](#),

the use and operation of [ECDIS](#) and its features as an enhanced navigational equipment are mandatory. This course teaches all the aspects of ECDIS course.



Important Nautical Books

In today's scenario, no maritime book can be deemed as less worthy, especially if they are published by some of the most prominent maritime organizations.

Considering this fact and taking inputs from several deck officers presently working at the sea, the following list of nautical books is extremely important for deck officers.

1. Safety of Life at Sea (SOLAS)

SOLAS or Safety of Life at Sea is one of the most important maritime conventions dealing with safety of seafarers at sea and listing requirements for all merchant ships to comply with the minimum safety norms.

2. MARPOL

MARPOL or Marine pollution regulation deals with prevention of marine pollution by harmful substances discharged from ships. It consists of six annexes for controlling and eliminating marine pollution that can be caused as a result of variety of shipping activities. These rules must be thoroughly known by all deck officers.

3. Collision Regulation (COLREG)

The convention of International regulation for prevention of collision at sea is an essential guide for ship navigation. The regulations, known as the “rules of the road” or navigation rules, are to be followed by ships and other sea-going vessels for preventing collision and accidents.

4. Load Lines Convention

The international convention on load lines deals with freeboard and stability of ships and describes potential hazards of different zones and weather conditions. One of the main purposes of this code is to ensure water tightness integrity of the ship's hull below the freeboard deck. This is a very important nautical book for all deck officers.

5. STCW – Standards of Training, Certification, and Watch-keeping

The STCW Convention deals with standards of competence required by seafarers to join merchant vessels. It includes new training and certification requirements and methodologies, requirements of hours of

work and rest, medical fitness standards for seafarers, and prevention of drug and alcohol abuse.

6. Admiralty Tide Tables

Admiralty Tide Tables detail the times and heights of high and low waters for over 230 standard and 6000 secondary ports in the UK and Ireland, Europe, the Indian Ocean, South China Sea and Pacific Ocean for each day of the year. The tables outline methods of prediction, the effect of meteorological conditions on tides and provide additional information on exceptional tidal factors in each area.

7. Ship's Routeing Guide

Ship's Routeing Guide includes traffic separation scheme, areas to be avoided, deep water routes and other important information for navigation of vessels. The publication deals with all routeing measures for controlling and monitoring navigation of vessels. A must have nautical book for all deck officers.

8. MSBC Code and Supplement

The International Maritime Solid Bulk Cargoes Code and Supplement provides information on safe stowage and shipment of solid bulk cargoes. It also informs on the dangers associated with the shipment of certain types of solid bulk cargoes and gives instructions on the procedures to be adopted when the shipment of solid bulk cargo is contemplated.

9. Cargo Storage and Securing (CSS) Code

The Cargo Storage and Securing (CSS) Code provides guidance for safe working conditions for securing of containers on deck of the ship. It also deals with safe stowage procedures and storage of vehicles on ships. This is important for all deck officers working on container ships.

10. International Maritime Dangerous Goods Code (IMDG)

The International Maritime Dangerous Goods (IMDG) Code deals with transport of dangerous goods by sea and covers matters as packing, container traffic and stowage, with particular reference to the segregation of incompatible substances.

11. The Ship's Captain Medical Guide

The Ship Captain's Medical Guide is intended primarily for use on ships where no doctors are present and the ship officers have to assess and treat injuries and to diagnose and treat ill health. This is an important nautical guide to be made available on ships.

12. International Grain Code

The International Grain Code deals with Safe Carriage of Grain in Bulk on ships. The grain code replaced the original chapter VI of the 1974 SOLAS Convention, which contained detailed regulations on the carriage of grain in bulk, with more general requirements and

placed the detailed provisions on grain in a separate mandatory code.

13. Ocean Passages of the World

The Ocean Passages of the World is an important nautical book for planning offshore passages of merchant vessels, towing rigs and structures and sailing craft. The guide includes information on currents, winds, and weather at sea, along with climatic and routing charts.

14. Life Saving Appliances (LSA) Code

The International Life-Saving Appliances (LSA) Code provides international requirements for the life-saving appliances that are required by chapter III of the 1974 SOLAS Convention, including personal life-saving appliances (for example, lifebuoys, lifejackets, immersion suits, anti-exposure suits and thermal protective aids), visual aids (parachute flares, hand flares and buoyant smoke signals), survival craft (life rafts and lifeboats), rescue boats, launching and embarkation appliances and marine evacuation systems, line-throwing appliances; and general alarm and public address systems.

15. Fire Safety Systems (FSS) Code

The International Code for Fire Safety Systems (FSS Code) provides international standards for the fire safety systems and equipment required by chapter II-2 of the

SOLAS Convention.

16. Symbols and Abbreviations Used on Charts

Symbols and Abbreviations used on navigation charts provide descriptions and depictions of the basic elements and symbols used on nautical charts provided by Admiralty. A must read for all deck officers.

17. Admiralty List of Radio Signals

The Admiralty List of Radio Signals series provides comprehensive information on all aspects of Maritime Radio Communications.

18. The Nautical Almanac

The Nautical Almanac provides information on celestial navigation, listing the celestial bodies used for navigation, a sight reduction table, and other information valuable to the offshore navigator.

19. Mariner's Handbook

The Mariner's Handbook is a compendium of essential maritime information on charts; operations and regulations; tides, currents and characteristics of the sea; basic meteorology; navigation in ice, hazards and restrictions to navigation; and the IALA Buoyage system

20. Annual Summary of Notices to Mariners

The annual summary of admiralty notices to mariners, also popularly known by its publication number NP 247 (1) and (2), is a

publication issued by [admiralty \(UKHO\)](#) on yearly basis. The notices advise mariners on important matters related to [ship's navigation](#), hydro graphic information, aids to navigation, and changes in shipping channels. All deck officers working on ships must know about these nautical guides.

21. International Safety Guide for Oil Tankers and Terminals

The International Safety Guide for Oil Tankers and Terminals is a definitive guide to the safe carriage and handling of crude oil and petroleum products on tankers and at terminals.

The guide takes account of recent changes in recommended operating procedures, particularly those prompted by the introduction of the International Safety Management (ISM) Code, which became mandatory for tankers on 1st July 1998.

The Guide provides operational advice to directly assist personnel involved in tanker and terminal operations, including guidance on, and examples of, certain aspects of tanker and terminal operations and how they may be managed.

22. The International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)

The International Code for the Construction and Equipment of Ships Carrying Dangerous

Chemicals in Bulk (IBC Code) is for chemical tankers constructed on or after 1 July 1986.

Under regulation 11 of Annex II to MARPOL 73/78, chemical tankers constructed before 1 July 1986 must comply with the provisions of the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code).

23. Bridge Team Management – The Nautical Institute

The Bridge Team Management is a nautical book which provides information on passage planning, coastal and estuarial navigation and bridge organization using paper and electronic charts.

It also offers detailed information on how to prepare a navigational plan and navigator's notebook and ways to monitor progress in safe water are covered. It includes: team management, error chains, casualties and causes, passage appraisal, situational awareness, executing the plan, monitoring the ship's progress, navigating with a pilot on board, GPS.

24. International Medical Guide for Ships

The International Medical Guide for Ships shows designated first-aid providers how to diagnose treat and prevent the health problems of seafarers on board ship. The International Labour Organization's Maritime Labour Convention 2006 stipulates that all ships shall carry medicine chest medical

equipment and a medical guide.

The International Medical Guide for Ships supports a main principal of that convention: to ensure that seafarers are given health protection and medical care as comparable as possible to that which is generally available to workers ashore.

25. Inert Gas Systems

The Inert Gas Systems provides guidelines on current general practice used in the design and operation of inert gas systems and incorporates amendments adopted by the Maritime Safety Committee at its forty-second, forty-eighth and fiftieth sessions.

26. Star Finder and Identifier (NP 323)

The nautical guide consists of a Star Chart (Northern and Southern Hemispheres) and eight transparent templates. (Latitudes 0, 10, 20, 30, 40, 50, 60, 75 degrees). The Star Chart shows the 57 stars tabulated in the Nautical Almanac.

27. Bridge Procedures Guide

Bridge Procedures Guide by the International chamber of Shipping brings together the good practice of seafarers with the aim of improving navigational safety and protecting the marine environment.

This nautical book takes account of regulatory changes since the late 1990s, including the IMO Convention on Standards of Training, Certification and Watchkeeping,

the ISM Code and Radio Regulations, as well as the introduction of new equipment such as ships' Automatic Identification Systems (AIS).

28. Guide to Helicopter-Ship Operations

This guide by International Chamber of Shipping has been published to encourage safe and efficient helicopter/ship operations. It is intended principally for the use of ships' masters, deck officers and crew, but also offers advice to helicopter pilots and operators. The objective is to promote standardized procedures and facilities for helicopter/ship operations worldwide.

30. Ship Construction – David J. Eyres

Ship construction by David J. Eyres is a comprehensive nautical book on shipbuilding and shipyard practices. It also provides latest developments in the construction of different types of ships and safety practices. This is an essential book for both maritime students and professionals working in the field of ship construction and maintenance.

31. BCH Code (Code for Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk)

BCH Code includes amendments which were adopted by the MEPC by resolution MEPC.41(29) for chemical tankers constructed before 1 July 1986. Ships built

on or after that date must comply with the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) for the purposes of MARPOL 73/78 and the International Convention for the Safety of Life at Sea (SOLAS 74).

32. Dr. Verweys Tank Cleaning Tables

Dr. Verwey's Tank Cleaning Guide contains advice on the correct tank washing procedures from one product to the other. The nautical guide lists around 400 liquid Chemical Substances.

33. How to Keep Admiralty Charts up to Date

How to Keep Your Admiralty Products Up-to-Date (NP294) A comprehensive nautical book for deck officers for updating all Admiralty products.

34. Code of Safe Practices for Ships Carrying Timber Deck Cargoes

The Code of Safe Practice for Ships Carrying Timber Deck Cargoes, 2011 is a non-mandatory code and applies to all ships of 24 m or more in length carrying a timber deck cargo.

The Code aims to ensure that stowage and cargo securing arrangements for timber deck cargoes enable a safe yet rational securing of the cargo so that it is

satisfactorily prevented from shifting.

35. Code of Practices for Safe Loading/Unloading on Bulk Carriers (BLU Code)

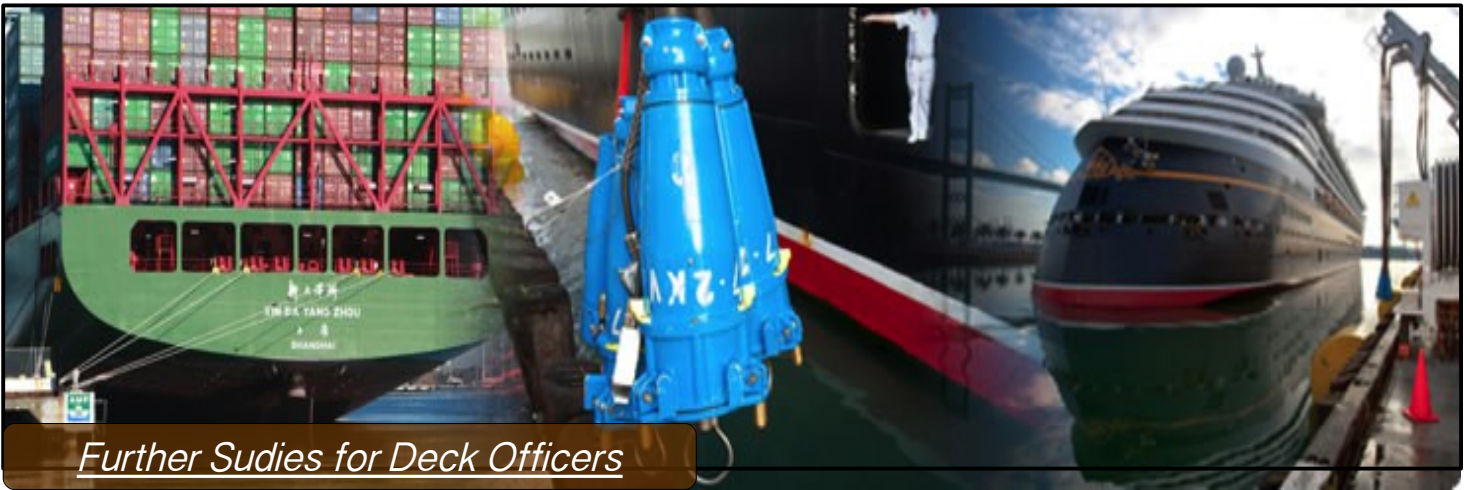
BLU Code includes Code of Practice for the Safe Loading and Unloading of Bulk Carriers adopted by the Maritime Safety Committee . It also includes amendments to the manual on loading and unloading of solid bulk cargoes for terminal representatives adopted by the Maritime Safety Committee at its eighty seventh session in May 2010.

36. Admiralty Sailing Directions

Published in 74 volumes covering all the navigable waters of the world and complementary to Admiralty charts and other nautical publications.

The nautical books provides comprehensive information on navigational hazards, buoyage systems, pilotage, regulations, general notes on the countries, port facilities, seasonal currents, ice and climatic conditions.

[A complete list of recommended nautical books for deck officers can be found here.](#)



Further Studies for Deck Officers

No matter how attractive the profession may sound, the career path as a deck officer in merchant navy requires long periods of stay away from home and a rigorous work environment. Life on board ships is not all hunky-dory, for the sea is a mighty force and extremely unpredictable, [making the life of seafarers challenging](#).

It is for these reasons and many others, that an individual, at some point of his or her life, is driven to leave the career at sea and pursue further studies. Also, some individuals just want to study further and hone themselves academically for personal enhancement. For such deck officers/seafarers, there comes a point where research into maritime courses for further studies becomes a very hectic affair.

With a recognized undergraduate degree in the arsenal, it is relatively easy for a deck officer to get admission in the desired maritime course, than it is for an individual who has just done his pre-sea training and gone for sailing on board a vessel.

For most maritime courses pertaining to 'further' studies for deck officers, the basic prerequisite is an undergraduate degree. However, there are certain maritime courses that might waive off that requirement based on the experience at sea in the specific department.

Exact entry requirements can be found from the websites of particular colleges providing maritime courses. Following are some of the maritime courses that have been charted out to help deck officer in Merchant Navy to choose and pursue a program for their further studies:

Maritime Law

Maritime law is one of the most sought out courses by maritime professionals who want to do further studies and become a [maritime lawyer](#). The entire world relies on the shipping industry for a variety of needs and it is thus natural to have so many options with regard to the managerial, legal and organizational aspects of the law.

Owing to the importance of the shipping

industry, it is very well known that Maritime Law is a line of work that is in great demand. Most post graduate courses in law require a basic knowledge of law at undergraduate level. However, experience in the field may be deemed as qualification good enough for the respective course. Foundation courses are also in place to get accustomed to the legal studies. An individual may decide to join a law firm and learn the tricks of the trade the hard way, step by step, but an education ensures that the same process is put on a speedy gear.

Institute Providing Maritime Law:

City University, London is an institution that is at the forefront of academic excellence and known for the same all across the world. The Maritime Law course at City University is a very coveted one. Ranked as one of the top Universities in the UK as well as the world, City University London offers a course that is aimed at individuals seeking to pursue a career in Maritime Law. [Details of the course can be found here.](#)

This course can also be done in U.S at Tulane University. Tulane University is where all the action is with respect to Admiralty law in the US. This is the only major Maritime Law course in the US and a very rigorous one at that. [Details of the course can be found here.](#)

Marine Policy

A post graduate course in Marine policy offers a career as a manager in areas such

as international shipping, ports, harbors, or sea trade in either private sector or for government agencies.

Institute Providing Marine Policy Course:

Cardiff University is an excellent University that provides a course in marine policy and is recognized all over the world for an amazing academic environment. [Details of the course can be found here.](#)

Maritime Affairs

A post graduate course in Maritime affairs is a specialized course which teaches every aspect and changing needs of the maritime industry.

Institute Providing Course in Maritime Affairs:

World Maritime University (WMU) in Sweden is an institution founded by the International Maritime Organization (IMO), a specialized agency of the United Nations.

Established in 1993, the WMU is known to be a prime leader in research and excellence in the maritime field. With liaisons in China, WMU is an excellent option for deck officers looking to stay at par with a promising career in the maritime industry. [Know more about the course here.](#)

MSc in Shipping, Trade & Finance

MSc in shipping, trade and finance deals with the business and commerce of the maritime industry. It is an interesting course for deck officer and maritime professionals who wants to make a mark in the shipping

business sector.

Institute Providing Msc in Shipping, Trade & Finance:

The Cass Business School at the City University, London is an extremely prestigious college which provides MSc in shipping.

Also, London being the hub of shipping, choosing this course and University puts a prospective cadet right in the middle of all the action! [Details of the course can be found here.](#)

MSc in International Transport and Logistics

The Merchant Navy broadly comes under the business of International Transport and Logistics. To have a thorough understanding of the management and organizational aspects of such business is extremely important for an individual and for innovation in the maritime sector in general.

Institute Providing MSc in International Transport and Logistics:

Deck officers/maritime professionals can opt to complete this MSc course over a period of two years.

Conducted in liaison with the World Maritime University, the maritime course is an extremely interesting one. [The details of this course can be found here.](#)

MBA in Shipping

Masters in Business Administration (MBA) is by far the most famous post graduation course not just by maritime professionals but also for people in almost all the fields.

[A MBA degree in Shipping](#) would definitely open several gates of opportunities for deck officers who are looking for an onshore job. However, it is to note that most of the reputed MBA universities ask for minimum 2-5 years of working experiences to become eligible for the course. Though there are some colleges which do take maritime professionals with less experience on the basis of their academic performance.

Institutes providing MBA in Shipping:

[Indian Maritime University](#)

[Australian Maritime College](#)

[University of Greenwich](#)

[Liverpool John Moores University](#)

This list is not exhaustive and there are many more courses all across the globe to choose from. The above list just outlines some of the more known maritime courses, which deck officers and maritime professionals can pursue to increase their horizon of opportunities.

It is also to note that the institutes mentioned herein are not the only ones to provide a particular course. They have been mentioned just to give deck officers/ maritime professionals the right direction to research.



Ship navigation is one of the most crucial tasks on ships. Deck officers and crew members involved with the important task of navigation have to consider several aspects in order to ensure safe maneuvering and passage of the ship.

From operating navigation equipment to carrying of watch and preparing charts, deck officers have to be adept at what they do in order to ensure the safety of the ship and its crew.

A safe and smooth journey of a ship starts with properly [understanding the Principles of Passage Planning](#), along with knowing the basics of ship navigation.

A general overview of the basics of ship navigation can be found below:

[Mastering Ship Navigation – Part 1](#)

[Mastering Ship Navigation – Part 2](#)

[Mastering Ship Navigation – Part3](#)

[Mastering Ship Navigation – Part 4](#)

However, in order to master the navigation techniques, it is important to know and understand different [types of Navigation Equipment and Resources Used Onboard Modern Ships](#).

Personnel working on bridge must also know answer to the following questions:

[What is Automated Mutual Assistance Vessel Rescue System \(AMVER\)?](#)

[What is Integrated Bridge System \(IBS\) on Ships?](#)

[What is Bridge Navigational Watch and Alarm System \(BNWAS\)?](#)

[What are Navigational Aids?](#)

[What is Electronic Chart Display and Information System \(ECDIS\)?](#)

[What is Automatic Identification System \(AIS\)?](#)

[What is Vessel Monitoring System?](#)

[What is Vessel Tracking System?](#)

Understanding ship navigation systems is not enough. It should be backed by the correct procedures of navigation watch practices.

A deck officer on deck must know:

[Important Points Officer on Watch Must Consider While Handling Ship's Radar](#)

[What are Primary Duties of Officer on Watch \(OOW\) on Ship's Bridge?](#)

[What is Ship Routeing?](#)

[Different Entries to be Made in Bridge Log Book of the Ship](#)

[How to do Intentional Grounding or Beaching of a Ship?](#)

Navigating a ship is not an easy task. There is no room for errors. A minor mistake can lead to disastrous accidents and fatal situations.

As a deck officer, it is your duty to learn and understand every aspect of safe navigation of ships. It is only through experience and knowledge that one would gain skills to master the art of safe

ship navigation.

Important articles to help you understand various aspects of ship navigation

[Marine Navigation Systems and Electronic Tools Used by Ship's Pilot](#)

[The Importance of Pilot-Master Relationship on Ships](#)

[Why is BNWAS Important on Modern Ships?](#)

[How to Handle a Ship in Congested \(High-Traffic\) Waters?](#)

[How Bow Thruster is used for Manoeuvring a Ship?](#)

[How Marine Fenders are used for Ship Berthing?](#)

Articles on navigation tools and equipment

[Marine VHF Radios, Marine GPS, and Marine Autopilots](#)

[What is Foghorn on Ships?](#)

[What is a Binnacle on Ships?](#)

[What is a Tide Clock?](#)

[What is Deck Prism on Ships?](#)

[How Celestial Navigation Helps in Ship Navigation?](#)

[Understanding Importance of Marine Navigation Lighting](#)

[Understanding Nautical Charts](#)

[Marine Radars](#)

[Fluxgate Compass](#)

[Radar Reflectors](#)

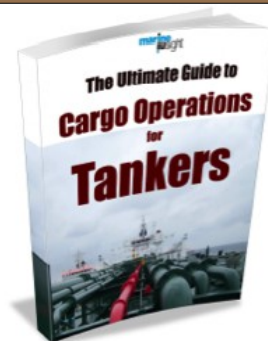
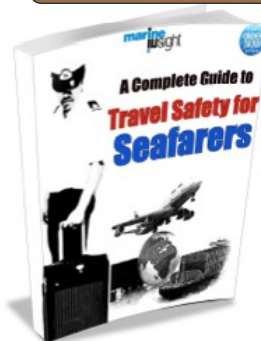
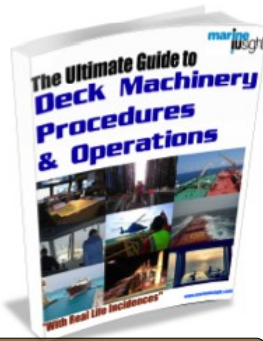
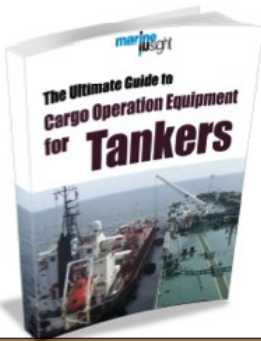
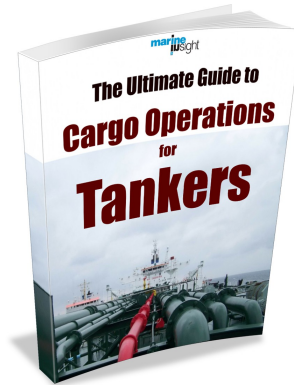
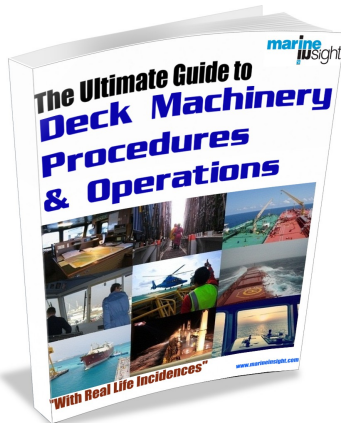
[Basics of Engine Order Telegraph](#)

[Nautical Almanac](#)

[Deck Reckoning Navigation Technique](#)

[Sextant](#)

Click here for the complete resource of navigation techniques and cargo operation resources. We will be continuously updating this page in our future editions. Stay tuned!

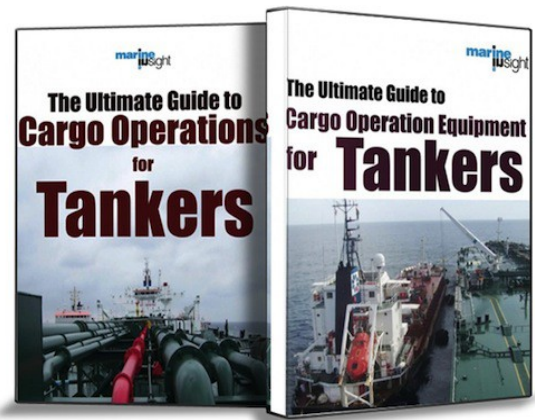
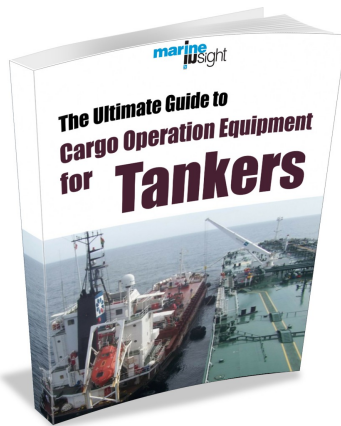
The best practice eBooks*Premium Guides for Deck Officers*

“This eBook has been long awaited by seafarers. Finally, hands-on experience of the best from the maritime industry come assimilated in one book. The handy format and the precise content are the promising features, which make this e book efficacious for all my fellow seafarers including myself, who on numerous occasions have felt the need for an expert's advice and righteous guidance. The elaborations in this book are exactly what a seafarer looks for. A must read and keep for all those who are a part of the maritime industry.”

“ The Ultimate Guide to Cargo Operations for Tankers offers a comprehensive explanation of all operations that are required to handle cargo on tanker ships. The guide features real life incidences and expert tips to help you understand each cargo handling operation with practical solutions.

This guide is must-read for not only those who are working on tankers but also for those who wants to understand how dangerous cargo is transported by tanker ships.”

BUY NOW**BUY NOW**



“Maritime industry has witnessed far reaching developments from wooden boats to underwater cameras. Restructuring itself commercially, technically and operationally, the tanker industry has been constantly updating size, capacity and structure of oil tankers. Getting sophisticated each day, this sector needs seafarers to be on their toes with regards to the equipment they use and to ensure their fail safe operation. This guide will prove to be a very useful aid and will be far effective scoring upon its counterparts in terms of size, content and handiness. A must read and keep for all those who are working on tankers and those who are willing to join the tanker industry.”

“While the eBook “The Ultimate Guide to Cargo Operations for Tankers” features comprehensive explanation of all important operations and procedures that are used to handle cargo at the sea and at ports, our another eBook on Tanker Operations - “The Ultimate Guide to Cargo Operation Equipment for Tankers” explains cargo machinery systems, their importance, and working. If you want to thoroughly understand the cargo operations on tankers, along with all the important systems provided on board, the “Cargo Operations for Tankers Pack” , consisting of both the eBooks is a must-have reference guide.”

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