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ENGLISH IN MARITIME VOCATION

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PT. GLOBAL EKSEKUTIF TEKNOLOGI

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PREFACE

All praise and gratitude for the presence of Allah Almighty on all occasions. Sholawat along with our greetings and prayers are conveyed to the Prophet Muhammad SAW. Thank God for His Mercy and Gifts the author has completed this Book of English in Maritime Vocation.

This book discusses about maritime in general, the background of maritime, ship knowledge, the activites in ship, the purpose of studying about ships, shipping, navigation, marine communication, emergencies, and also the importance of english in maritime vocation.

The author would like to thank all those who have supported in the completion of this book. Especially those who have helped publish this book and have entrusted encouraged, and initiated the publication of this book. Hopefully this book can be useful for the people of Indonesia.

Padang, March 2023

Author

TABLE OF CONTENT

CHAPTER I
MARITIME IN GENERAL

By Andri Kurniawan

1.1 Maritime in General

Maritime English is said to be a product of life in the ocean itself. This can be considered as the birthplace of what is currently known as the ESP (English for Specific purpose) type of maritime communication purposes.

It is undoubtedly no accident that English has taken over as the preferred language for maritime communications, including commerce and intercultural and multilingual crew members aboard ships all around the world. Although Maritime English has a long history of use in British sailing, its communicational function has evolved over time to become more appropriate for a particular field of human endeavor. It simultaneously uses General English while also extending its influence to other ESP kinds that it encounters. Depending on their individual demands, the crew members on board use it in a variety of ways, but one thing they all have in common is the necessity for effective oral and written communication, which improves navigational safety.

According to the results of the Ancient Human Occupation of Britain study (AHOB)1, the area that is now known as Great Britain was connected to the European continent long before the human era, which began approximately 500,000 years ago. Climate changes drove ancient populations into and out of what is now Britain as the land connection to the continent grew. As a result, if the residents wanted to communicate with nearby locations and their residents, they had to first get in touch with the sea. They had to travel across the ocean to live on the Islands and then back again for a variety of reasons.

The origins of the Britons who lived in the region of the Island south of the Firth of Forth during the Roman Iron Age are unknown. Armenia, which is assumed to be an incorrect transcription of Armorica, a region in North-Western Gaul, is where they are claimed to

have traveled from to get to the Island. Additionally, they have a history of relocating to continental Europe on occasion, when they established the communities of Brittany in France and the lesser-known Britonia in what is now Galicia in northwest Spain.

Rafts, coracles, and canoes carved from tree trunks are thought to have been the first watercraft used by the Britons. They are thought to have been primarily employed for river transportation and fishing. The earliest known ocean-going boat connected to the British Isles, according to archaeological evidence, dates to the Bronze Age, or roughly 1600 BC. After the location where it was discovered in 1992, it was given the name Dover Bronze Age Boat. It is estimated that a crew of between 4 and 16 paddlers pushed the 9.5 m long, 2.3 m wide vessel at a top speed of 5 knots. Additionally, it might have some cargo.

Maritime excursions to the Island were common during the Roman era, as were invasions and trade contacts with Britain and then, from there, with Europe.

The Picts and Scots, as well as the Germanic tribes of the Angles, Saxons, and Jutes, frequently attacked the coasts of Britain in the second half of the third century. The latter were even employed by the British rulers as mercenaries. They finally took over command of the southernmost regions of England. Many trade routes from Britain's east coast crossed the North Sea, while those from the west coast continued to trade with the Mediterranean.

Therefore, migration from southern England to Brittany and northern Spain was sparked by seaborne trade.

As early as in 730s ships that used the port of London for trading had to pay a toll6 that would later become what is known as harbour dues.

With the use of their longships driven by both oars and sails, the Vikings repeatedly assaulted Britain beginning in the ninth century while conducting trade. They had a steering oar (or board) at the back on the right side, which would subsequently lead to the terms starboard (designating the right side in Maritime English) and port (designating the left side). After launching a seaborne assault and

engaging in extensive trade over the English Channel, the Normans later conquered Britain in 1066.

The British needed maritime transport for the army and its support because they were also engaged in combat with the French, Portuguese, and Irish. The longship is thought to have influenced the cog, a subsequent ship design. The rudder was now fixed to the stern post, thus facilitating the steering. There were also more masts and a more abundant sail wardrobe to increase the ship's speed.

When warehouses were built for the League in English and Scottish ports during the Late Middle Ages, the trading guilds expanded their trade over the Baltic and a portion of the North Sea. Seamen's guilds, the forerunners of modern seamen's clubs, were created across Britain at roughly the same time. Thus, following the dissolution of the League, the English merchant fleet began to grow.

The British journeyed all over the world between the 15th and the 17th centuries in quest of new markets and trading partners. They also developed new trade routes, which helped advance the discovery of uncharted regions and peoples. As soon as the British created colonies all over the world, they established trade ties supported by their growing merchant fleet. The English ships needed a large crew despite being seaworthy.

As a result, they were unable to compete in the just developing maritime shipping sector. They added numerous Dutch merchant ships they had seized during the wars they fought to their own merchant fleet before using newly learned building methods to construct their own new ships. The results were ships with a larger stowage area due to a longer keel, but with a reduced number of crewmembers. Thus, the first part of the 17th ct. was a period in which the English maritime shipping flourished due to trading relations with the Mediterranean, East Indies and North America.

After routing the Vikings, Alfred the Great's English maritime fleet deteriorated, but when the Norman invasion looked imminent in the 10th century, it rebounded. Despite this, the Normans captured England because the English fleet had been crippled by a storm and was unable to defend itself. In the 12th and 13th centuries, when the

Normans had taken control of England, they built a maritime fleet with a total of about 500 ships; the following century, the number rose to over 700. The construction of specialized warships larger than commerce ships began in the 15th and 16th centuries. By the 1550s, there were 40 of them, and they were distinguished by gunports built to accommodate large guns.

New shipyards had been established with this goal in mind. However, the navy was underfunded, which made it harder to defend the British coast. The English naval fleet underwent further reform and improvement in the succeeding decades, and the institution of the Admiralty was established in 1545 since the fleet had previously been under the direction of admirals for two centuries. As a result, the position of Lord Admiral of England was created in 1408. The key distinction was that the First Lord of the Admiralty was now a civilian and a member of the Government, and that the Admiralty now had jurisdiction over naval operations and ship officers. In the 17th ct. the first Fighting Instructions were issued, and in 1673 the first Sailing Instructions appeared.

The cargo boat discovered at Graveney, Kent, is the earliest evidence of shipbuilding in England, which dates to the ninth or tenth centuries. The boat, measuring around 14 per 4 meters, was used to transport the cargo of quarnstones from the Middle Rhine to the Thames, according to Fenwick and Morley (Fenwick and Morley, 1978). Another 13th century boat was discovered on the Severn River, demonstrating the existence of early British boatbuilding in streams and rivers close to the coast.

Ship design changed over time; by the beginning of the 13th century, stern-mounted rudders had replaced decks, which had been added to create enclosed space. In the centuries that followed, both the quantity and size of sails as well as the number of masts also rose. There were over 60 different types of vessels in use by the 16th century, with the cog and carvel—developed under Portuguese influence—being the most well-known. They were escorted by an English galleon with gunports dating to the middle of the sixteenth

century. During this time, the area around the Thames River rose to prominence as a shipbuilding area.

General English may be perceived as the starting point for different specific jargons as all of them arise on the basis of the General incorporating its lexical units and basic grammar. This marks the beginning of the process of diversification, which calls for a separation from the General while simultaneously enhancing it with fresh interpretations of the present structure. These diversifications can occasionally become so intricate and specific that they are difficult for speakers of general English to understand.

To ensure maximum comprehension and the least chance of misunderstanding, Maritime English prefers some vocabulary elements above others with synonymous meanings for specified reasons. Therefore, it prefers to change course rather than change it (although both are acceptable in the General), as the more obscure lexical item is undoubtedly harder to misunderstand, especially in the shipping environment, which has been made to become increasingly hectic and communication has become a babel due to a large number of world Englishes used by again increasingly multinational crews, for some time now.

Additionally, there are lexical items whose fundamental meaning adopts jargon-specific characteristics. Thus, e.g. the sailing manoeuvre known as tacking derives from the General English verb to tack dating back to the 14th century Middle English takken related to tak meaning something that fastens one thing to another and probably related to Old French tache for a clasp, large nail. The noun comes in its first meaning a small, sharp broad-headed nail, followed by a North American meaning of a drawing pin, next by the meaning of a long stitch used to fasten fabrics together temporarily, prior to permanent sewing. After that comes the meaning which is more abstract: a method of dealing with a situation or problem; a course change of tactic as proposed in the meaning to modify one's policy or attitude abruptly. Likewise, the verb to gybe, alternatively spelt to jibe, deriving possibly from the late 17th century obsolete Dutch verb gijben, present-day gijpen, is used with the General English meaning to make a sailing manoeuvre shifting a fore-and- aft sail from one side of a vessel to the

other while sailing before the wind so as to sail on the opposite tack or from the Middle French giber, meaning to shake or handle with force1. Jibe, as a noun, is a versatile word with several meanings, including to be in harmony or in agreement (e.g. let's see if our calculations jibe). There is of course a rich array of terms arisen from the General language which have gone through different processes of specification of meaning to become proper Maritime English terms.

The effects of Maritime English on General English are extensive since sailors and mariners carry their experiences with them even after disembarking, and their actions while at sea had a big impact on how they formed their worldview. Examples like the following serve to demonstrate this:

All at sea (Br.E.) / at sea (Am.E.) meaning *completely confused, lost and bewildered* as in:

It was his first day at the University, so he felt *all at sea / completely at sea.*

Sea legs meaning first the *ability to keep one's balance when walking on a moving ship and not feel ill* as in:

It took me a while to *get my sea legs*, but I feel fine now.

A second meaning can be *to get used to a new situation* as in:

After graduating from college he went *to Chicago to get his sea legs* by working in radio.

To batten down the hatches deriving from a nautical expression meaning *to seal the hatches against the arrival of a storm* but having also a figurative meaning *to prepare for difficult times* as in:

When you're coming down with a cold, all you can do is *batten down the hatches* and wait for the body to fight it off.

Feeling blue or *feeling sad* also derives from the age of deepwater sailing ships, which on e.g. losing their Captains or Officers during a voyage would fly a blue flag and have a blue band painted along the entire hull when returning to home port.

To know/learn/show/teach the ropes deriving from the early days of sailing when the phrase *He knows the ropes*. written on seafarer's discharge meant that he was still a novice and all he knew

about the job was theory, or the names and uses of the principal ropes or lines. But the phrase has changed meaning and at present it means that the *person fully knows and understands the operation,* as in:

It'll take some time for the new receptionist to *learn the ropes.* or in:

The new secretary started today so I spent most of the morning *showing her the ropes*.

The above mentioned idioms and phrases are just the tip of the iceberg. Fortunately, further discussion of the kind could only be enlightening.

The English language has a lengthy marine tradition, making it the language of the seven seas. General English and Maritime English can have mutual or antagonistic influences. Undoubtedly, a wide variety of the jargons that are currently in use have their roots in general English. On the other hand, jargon's vividness, which is supported by its deep roots in certain contexts, makes a considerable contribution to General English's semantic variety and versatility. Regarding the status of Maritime English, it is important to note that standardization of its use in referencing both established and emerging areas of interest in shipping, along with increased efforts to teach Maritime English at maritime colleges and universities around the world, have all helped to reduce the number of maritime accidents. A possible future development might also include ship's rating ranks as it would definitely ease both their lateral/horizontal and hierarchical/top-down, bottom- up communication.

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CHAPTER II
THE BACKGROUND OF MARITIME

By Ratna Kurnia Dewi

2.1 Maritime History

Thousands of years have passed in the history of the sea. In ancient maritime history, there is proof of maritime trade between societies dating back at least two millennia. Varieties of Stone Age tribes separately developed the first prehistoric boats such as dugout canoes. Different types of watercraft were employed for coastal travel and fishing in antiquity. British archaeologists have discovered a mesolithic boatyard on the Wight o Britain.

Austronesian peoples employs diverse technology including multihulls, outriggers, crab-claw sails, and tanja sails. Due to this, the Austronesian expansion—also known as the fast spread of Austronesians across the islands of the Indian and Pacific Oceans—was made possible. By roughly 1000 to 600 BC, they established the foundation for the maritime trade routes into South Asia and the Arabian Sea, which would later develop into the Maritime Silk Road.

The "Land of Punt" and Arabia were sources of spices that the Egyptians imported via trading routes across the Red Sea. By the time of Julius Caesar, a number of well-established land-sea trade routes were dependent on water transport across the sea to get around the challenging inland topography to the north. Between the 4th and the 3rd millennia BC, navigation was practiced in Sumer. These maritime trade routes later gave rise to the Age of Exploration as a result of the quest to find the source of spices.

Maritime Prehistory

It's possible that early hominids crossed the ocean and made their way to the Philippine Island of Luzon as early as 777,000 to

631,000 years ago, based on evidence such being traces left on a rhinoceros bones and stone utensils.

Anatomically modern humans traveled by sea from the Sundaland peninsula to the Sahul landmass (current Australia and New Guinea) between 53,000 and 65,000 years ago. The entire lengths involved at the potential crossing places are all over 55 miles, thus even with the then-lower sea level, this crossing would have required traveling far from land. Large bamboo rafts, perhaps equipped with a sail of some kind, were most likely used. During the Northern Australian wet season , the winds were very conducive for accomplishing this trip up until 58,000 BP. After that time, there were less favourable winds, which coincides with Australia's only prehistoric colonization era.

Humans were said to have started whaling in Korea at least 6,000 years ago. The earliest known method of capturing whales is to simply force them ashore by spotting numerous small boats between the whale and the ocean and attempting to frighten them with tumult, activity, and possibly small, non-lethal weapons like arrows. (Knapp et al., 2022).

Austronesian Expansion

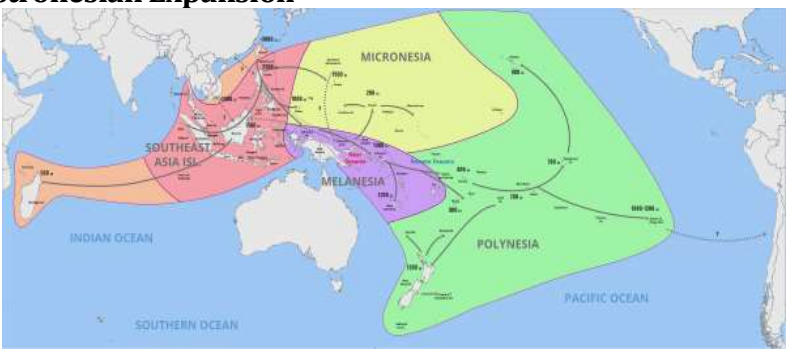

Figure 2.1 Map Showing the Migration and Expansion of the Austronesians which Began at about 3000 BC from Taiwan

The catamaran, the outrigger boat, the tanja sail, and the crab claw sail are examples of unusual sailing technologies utilized by Austronesians. As a result, they were able to colonize a significant portion of the Indo-Pacific region during the

Austronesian expansion, which lasted from around 3000 to 1500 BC to the expansion of New Zealand and the Easter Island during the tenth and thirteenth centuries AD. The majority of the world's population, from the Easter Island in the eastern Pacific Ocean to Madagascar in the western Indian Ocean, belonged to the Austronesian ethnolinguistic group before the start of the Colonial Era in the sixteenth century. They also created extensive maritime commercial networks, including the Neolithic forerunner of the Maritime Silk Road.

The non-Austronesian populations of Sri Lanka and southern India developed the catamaran and outrigger boat technology as a result of the first Austronesian contact with the region, particularly with the Maldives and Laccadive Islands. This is thought to have taken place sometime between 1000 and 600 BC, and it resulted in the growth of maritime commerce networks in both India and Sri Lanka. This might have involved a little amount of colonization that was afterwards integrated. South Indian and Sri Lankan languages still show this. For instance, Proto-Hesperonesian *padaw, "sailboat," is the root of Tamil patavu, Telugu padava, and Kannada padahu, all of which imply "ship." Other Austronesian cognate include Javanese perahu, Kadazan padau, Maranao padaw, Cebuano paráw, Samoan folau, Hawaiian halau, and Māori wharau (Tatte et al., 2022).

Similar to this, the Han dynasty (220 BC–200 AD) trade with Southeast Asian Austronesian ships (possibly Javanese or Sumatran) is when the Chinese first encountered enormous seagoing ships, according to Chinese historian Wan Chen. (萬震) in his 3rd century AD book "Strange Things of the South" (Nánzhōu Yìwùzhì — 南州異物志). Due to this, China later developed its own marine technologies between the 10th and 13th centuries AD, during the Song dynasty. By roughly 500 AD, colonists from Borneo to the Indian Ocean to the west and settled in Madagascar and the Comoros, marking the furthest reaches of Austronesian expansion.

The colonization of the Northern Mariana Islands of Micronesia from the Philippines was the first true ocean journey in the east. More migrations southern and eastward to Island

Melanesia up to islands outside the inter-island visibility range, such as Tonga and Samoa, then occurred in response to this. The Austronesian Lapita civilisation lived in this area. By roughly AD 700 to 1200, the first Polynesians resumed their eastward expansion after a lapse of almost two thousand years, entering the Cook Islands, French Polynesia, Hawaii, Easter Island, and New Zealand.

Austronesian peoples have a reliable navigational system: Various natural indications are used for orientation at sea, as well as "star path navigation," an astronomical approach that is highly distinctive. Basically, navigators utilize the location of specific stars as they rise and set above the horizon to find the bow of the ship to known islands (Fitzhugh, 2022).

2.2 Maritime Transport

Transporting goods (freight) or people (passengers) on waterways is referred to as waterborne transport, maritime transport (or ocean transport), or hydraulic effluvial transport. Transportation that involves moving goods (or people) over waterways is known as maritime transport. Pre- and post-shipment operations may occasionally be included in maritime transit. Throughout recorded history, shipping has been a common method of moving freight. Sea travel has become less significant for passengers with the development of aviation, however, short excursions and leisure cruises continue to use it frequently. Despite changing exchange rates and a payment known as the currency adjustment factor added to freighting costs for carrier businesses, transporting by water is still less expensive than shipping by air. Around 80% of global trade will be carried out by maritime transport by 2020, according to UNCTAD.

Any distance can be travelled by ship, sailboat, boat, or barge through seas and lakes, through canals, or along rivers. One can ship for pleasure, business, or even the military. The world's major waterways, including many canals, are still of utmost importance and are essential to the economies of all countries, even though extensive inland transit is less necessary today. Although water may

transport any substance, it becomes impractical when the delivery of an item must be made quickly, as is the case with several types of perishable goods. However, for regularly scheduled shipments, sea transportation is quite cost-effective, such trans-oceanic consumer product shipping, and particularly for big loads or bulk cargoes like coal, coke, ores, or grains. The industrial revolution may have happened most successfully in areas with modest bulk transportation via canal, navigations, or shipping by all kinds of watercraft on natural waterways. (Gonzalez et al., 2019).

People and goods have been transported by waterways for millennia. As a result, the growth of international trade and the ongoing movement of goods between countries are responsible for the development of maritime transport. The primary mode of transportation at this time utilized to carry raw resources (oil, coal, cereals, etc.) over huge distances is sea transport.

The development of maritime containers in the middle of the 1960s enormously benefited the development of maritime transportation. These uniform boxes pile one on top of the other and may easily convey a wide range of goods. Other benefits of maritime containers include limiting the danger of damage, breakage, and theft (as the goods are hidden) and reducing transportation expenses. It should be mentioned that the race to gigantism over the past few years has slightly slowed as ships have become more and more capable of carrying more cargo. Ship owners are having difficulty entering the various trade ports across the world and loading their boats. (Sirimanne et al., 2019).

Characteristics of Maritime Transport

As was already established, a significant aspect of global logistics is maritime transportation. It is not a coincidental event; rather, it results mostly from the alluring qualities that characterize it. The attributes of maritime transportation that support the following functions..

1. Large capacity: Ships are notable for their high tonnage capacity, which is highly challenging to match for other

modes of transport. One of maritime logistics' greatest benefits is this tremendous capacity.
2. International transportation: A large number of goods can be transported worldwide for less money using ocean freight.
3. Versatile transport: Maritime logistics is quite adaptable; there are a variety of vessel designs that can accommodate any type of cargo.
4. Competition. There is a wide range of supply in maritime transport since, despite some instances, the principle of free competition govern about it.

These qualities highlight how appealing this sort of logistics is since it can be customized to meet every business's demands.

Types of Maritime Transport

There are numerous different ship kinds, and the differences between them are mostly based on the type of cargo the ship transports. Since each ship is different from the others while sharing many similarities, understanding many types can be highly useful. Portocargo will give a brief summary of the most important marine vessel types now navigating the world's oceans in this post. The most popular kinds of maritime transportation are listed below.

1. Container ships

They are the most typical kind of vessel utilized for the transportation of cargo. It is feasible to maintain greater control and a significant amount of cargo thanks to container organization. They are substantial, cutting-edge vessels that even have zero emission technology.

2. General cargo vessel

This form of vessel is simpler and does not support the use of containers. Dry cargo transportation is its most popular application. For the purpose of loading and unloading cargo, this kind of vessel features on-board cranes.

3. Bulk-carrier

They are also known as bulk carriers due to their use in the marine transportation of enormous amounts of freight (e.g. minerals, fertilizers, etc). They are a very flexible kind of transportation, accommodating various items and serving a variety of needs.

4. Reefer vessel

It is a vessel with refrigerated capability, as its name implies, making it perfect for the transportation of perishable commodities. This kind of vessel travels at a faster speed than other types of vessels because to the type of cargo it transports. Another fascinating aspect of reefer ships is that, in order to reflect the sun's rays as much as possible and prevent overheating, they are typically painted white.

5. Heavy lift cargo vessels

Specialized ships created for the transportation of very big loads. utilized frequently in industrial projects.

6. Roll on – Roll off vessel

They are a sort of ship that carries anything with wheels, typically machinery, automobiles, trucks, etc. These vessels, which have expert immobilization components, are made to hold and fix this kind of cargo.

2.2.1 Geography of Maritime Transport

Trade networks greatly expanded after the development of Steam Engine in the middle of the 19th century because ships were no longer influenced by prevailing wind patterns. As a result, the second half of the 19th century viewed an increase in maritime traffic to and across the Pacific, which coincided with the inauguration of the Suez Canal. The development of marine transport was enormous during the 20th century as developments in international trade and seaborne trade grew connected. Like all other modes of transportation, the requirement for marine transportation results from the need to maintain business connections, which is impacted by changes in the capacity of

maritime shipping as well as the composition of maritime shipping services. As a result, commerce and maritime shipping capabilities are somewhat reciprocal. As of 2018, 70% of the total trade's value and 80% of its volume were conducted by sea. One of the most internationally varied sectors in terms of ownership and operations is maritime shipping (Dominioni et al., 2018).

Similar to how land and air transportation operate in their own spaces, maritime transportation similarly operates in a geographically-based space that is strategically managed and used for commercial purposes. With the exception of seasonal weather patterns, geographic elements have a tendency to remain consistent throughout time, but strategic considerations, particularly commercial forces, are significantly more dynamic. The two fundamental elements of the maritime transportation physiography are rivers and oceans. Each one represents a different region of marine circulation despite their links. The basis of the idea of maritime transportation is regular routes, often known as maritime routes..

A few kilometer wide corridors connect ports, which are the main elements of the maritime/land interface, in an effort to bridge the gaps in land transportation. Maritime routes depend on strategic locations, physical limitations (coasts, winds, maritime currents, depth, reefs, and ice), and political borders as mandatory points of passages. As a result, intercontinental maritime traffic tries to follow the enormous circle distance, drawing arcs on the earth's surface of the oceans. In order to provide maritime shipping services, maritime routes connect the key commercial areas represented by maritime ranges. (Alvarez et al., 2021).

The latest technological upgrading in water transport water transport have been concentrated on altering water channels, such as dredging port channels to greater depths andexpanding the capacity of transoceanic crossings like the Panama and Suez. It has also been emphasized to increase size, automate, and specialize boats (such as cargo ships, tankers, and bulk carriers). Due to the technical requirements of maritime transportation, this called for the construction of large port terminal facilities. The placement of

important grain markets, the transfer of raw materials, the rise in commerce in intermediate and completed commodities, and not least, the rising demand for energy (mostly from fossil fuels) have all required adaptations in maritime traffic. However, the process is not consistent, and different degrees of linkage to international shipping networks have been noted. When oil tanker accidents have the potential to cause catastrophic ecological disasters, massifying transportation into regular flows over great distances has drawbacks (e.g. Amoco Cadiz, Exxon Valdez). Risks associated with ship asset immobility, such as the Ever Given's grounding in the Suez Canal in 2021, are also connected to the growing importance of container shipping (Duscruet et al., 2019).

Even though it is sluggish and rigid, river transportation has a large capacity and a steady flow. It is more acceptable for dependent activities to be located at the fluvial/land interface because it frequently has fewer infrastructures for transshipment. Although ports are less important for river transportation, fluvial hub towns are becoming more integrated with maritime and terrestrial traffic, particularly with containerization. From fully separated distribution systems to those with good integration, the degree of integration for river transportation varies. Fluvial transport can be a preferred means of shipment between economic operations in places with well-developed hydrographic networks. As a matter of fact, a number of industrial areas have developed alongside the main fluvial axis because this method was originally a crucial vector for industrialization. Recently, river-sea navigation has also given fluvial transportation a new dimension by directly integrating marine and fluvial systems (Mondo et al., 2021).

The majority of naval movements occurs along the coasts, and only a little amount of trade flows through three continents—Africa, Australia, and Asia—via rivers (except for China). Significant fluvial circulation occurs over vast fluvial waterway systems in North America, Europe, and China. From the networks of rivers and streams to the ocean, ships can travel immediately. Even with regular services on some fluvial arteries, like the Yangtze, the prospective of waterways for passenger transit is still only fluvial

tourism (river cruises). In order to create more direct routes, the majority of significant maritime infrastructure projects entail maintaining or altering waterways (canals and channel of navigation). It is so expensive that this tactic is only used when absolutely necessary. Significant investments have been created to increase ports' transshipment capabilities, which has also been quite expensive because ports are major space consumers.

Not all areas have easy access to the sea and marine transportation. Unlike coastal nations, maritime enclaves (also known as landlocked nations) face challenges doing maritime trade since they are not immediately connected to an oceanic realm of maritime circulation. To access a port facility via a road, a rail line, or a river, agreements with adjacent nations are necessary. Though being landlocked is able to result in significantly greater transportation costs that could impede economic growth, it does not necessarily mean that one is excluded from international trade. Being somewhat landlocked can also be a relative idea, as a coastal nation may be if its port infrastructure is insufficient to accommodate its maritime trade or if its importers or exporters are using a port in a third nation. For instance, despite France's significant nautical accessibility, Antwerp, Belgium, is the main port handling containerized trade. (Schwanen, 2019).

With advancements in technology and the economy, maritime routes' significance and layout have altered. Among these, containerization altered the design of freight lines by offering cutting-edge services. Before containerization, it was expensive and time-consuming to load or unload a ship, and cargo ships frequently waste more time docked than at sea. For traditional break-bulk ships, sailing time used to make up around 25% of the yearly ship time; for containerships, it currently makes up about 70%. Inter-range routes have become the dominant format of containerized maritime networks due to speedier and less expensive port operations.

2.2.2 The Importance of Maritime Transport

A tale of a cargo ship that became trapped in the Chesapeake Bay went viral, shocking the public. According to reports, on March 13, 2022, the Ever Forward ship, a part of the Evergreen Marine Corp.'s fleet, became stranded in the Chesapeake Bay's shallow seas. NPR reported that the crew of Ever Forward made a navigational error as the ship was leaving Baltimore after loading its cargo. The Ever Forward eventually made it to the Chesapeake Bay, where it spent four weeks trapped in shoals close to the shore. Many attempts have been made to liberate this cargo ship so that it can resume normal operations and follow the trade routes. The ship is currently trapped in the Chesapeake Bay and shows no sign of being able to resume sailing as of this precise day (Koukaki & Tei, 2020).

Despite the fact that it did not harm or lose any other cargo ships, the time-consuming ship rescue operations created a delay in the delivery of raw materials and products for necessities of life. According to CBS News, the Ever Forward ship is currently carrying 5000 containers on its deck, and because it has been stationary for a month, it has lost $1 billion USD daily. The crew and Chesapeake Bay coastal guards decided to evacuate the containers using another ship so that they could be distributed right away to the intended recipients in order to prevent further loss (Tijan et al., 2021).

The Ever Forward incident once more brought to light for the public the importance of sea transportation in facilitating export and import economic activity. In order to get the manufactured goods to consumers so they can meet their daily needs, export and import activities are crucial processes in worldwide trade. To improve the effectiveness of the entire process, transportation facilities are required, especially sea transportation, which has been regarded as the most effective mode of transportation for several types of products at once.

Former UN Secretary-General Ban Ki-Moon stressed the value of maritime transportation in the context of global trade during a speech on September 29, 2016, which also happened to be World Maritime Day, according to a press release on the UN's official website. Maritime transportation, according to Ban Ki-Moon,

is essential to international trade. Due to its large capacity and generally lower costs when compared to other forms of transport, maritime transportation aids in ensuring that the advantages of commerce are dispersed more fairly. Additionally, the shipping sector has been crucial in raising global living standards, which have recently helped millions of people escape extreme poverty..

Few economic endeavours or industrial sectors can endure for all time without using maritime transportation for their export and import operations. This assertion was corroborated by the International Chamber of Shipping (ICS), which observed that international maritime transportation is used to convey nearly 90% of the items produced by operations involving international trade. Eighty percent of the items in this number are goods for import and export. The remark implies that trade is entirely dependent on shipping, which is a crucial factor in driving their economic operations.

According to ICS, among the 90%, cargo ships move 11 billion tons of goods annually, or 1.5 tons, of which are the basic essentials for each and every person on the planet. The shipping industry transports over 2 billion tons of crude oil, 1 billion tons of iron ore, and 350 million tons of wheat per year. These raw materials are used to produce nearly all of the necessities for human life, including clothing, food, and shelter. This demonstrates how essential commercial activities—particularly the process of exporting and importing via sea transportation—are to human survival. (Linstad et al., 2020).

Additionally, ICS claimed that currently, there are already more than 50,000 international cargo ships that carry any kind of commodity in their cargo capacity. As a means of transferring goods throughout the economy, 150 nations around the world operate a fleet of registered cargo ships. Additionally, every fleet that is now in operation employs more than a million people from virtually every nation. According to the assertion, the maritime transportation sector is highly backed by its ongoing need to carry out international trade activities.

2.2.3 The Future of Maritime Transport

The amount that alternative low or zero carbon fuels that would provide the requisite "quantum leap" vis-à-vis BAU would be adopted will substantially influence the future of maritime transportation. If these fuels are to have any chance of being used in the future, they must become technically and—more importantly—economically viable. This section discusses how economic viability can be achievable, among other things. As it is, one thing is obvious, at least to this author: Economic viability will not occur on its own and will be influenced by a number of variables, many of which are political in nature.

There is no doubt that the adoption of the Initial IMO Strategy in 2018 was a historic choice, coming nine years after the adoption of the Energy Efficiency Design Index (EEDI), which is still (along with the Ship Energy Efficiency Management Plan- SEEMP) the only mandatory GHG emissions reduction measure. It is a significant and ambitious goal that needs to be responded very seriously by all parties engaged to achieve GHG emissions in 2050 that are not more than 50% lower than they were in 2008. At the same time, we firmly believe that any expectation that EEDI improvements will result in significant GHG reductions is completely unfounded. Danish Shipping commissioned a research that, Smith et al. (2016) demonstrated, among other things, that by the year 2050, the difference in GHG emissions caused by the presence of EEDI compared to a scenario without it is roughly 3%. The effectiveness of the short-term solutions now being considered at the IMO to reduce GHG emissions is still up in the air (Fang et al., 2019).

The covid-19 epidemic in the spring of 2020 also hindered the IMO regulatory decision-making process, and it is unclear whether the pandemic will truly have an impact (good or negative) on the possibility of future GHG reduction. Our general assumption is that once the COVID-19 situation is under control, the IMO GHG reduction conversation will pick back up. As previously noted, there is still no sense of order among the several proposed proposals that are all on the table. Market-based measures (MBMs) have been

classified as medium-term (to be decided between 2023 and 2030), but just as a possibility, despite the approaching Emissions Trading System (ETS) of the European Union (EU), which will be discussed further. The need to consider any MBM at the IMO does not seem to be urgent. Although certain business groups appear to embrace a bunker levy, no one has yet to make the suggestion explicitly.

In December 2019, the lately elected President of the European Commission said that shipping would be covered by the EU ETS as part of the "European Green Deal." ETS is, without a doubt, an MBM. So far, the EU has taken the position of aligning with the IMO's decarbonization process and essentially refraining from taking any action on the potential addition of shipping in the EU ETS before learning what the IMO plans to do with GHGs. The EU ETS, a crucial weapon in the EU's energy strategy, covers the production of electricity as well as various other significant companies (not for shipping purpose). The European Commission has been closely following the IMO process from the moment the initial strategy was decided in 2018 until 2023. The Commission had until recently declined to rule out the ETS option or even to say what would prompt action on its behalf. But everything has changed as of December 2019, and the European Green Deal blatantly recommends the ETS approach for shipping.

Eight shipping industry organizations (ICS, BIMCO, WSC, Intertanko, Intercargo, Interferry, CLIA, and IPTA) publicly announced to IMO a project to be jointly funded for a 5 billion USD fund that would be used to finance R&D for technologies and fuels toward decarbonization one week after the announcement of the European Green Deal (EU, 2019). An obligatory premium of 2 USD per ton on bunker fuel would increase this (ICS, 2019).

This plan, which the shipping industry had really been working on for some time but had effectively kept under wraps until its latest public release, is neither categorized as an MBM nor is it even close to becoming one. It is obvious that paying two dollars per ton will not, either immediately or later, reduce GHG emissions. A fortiori, there is at best a tenuous connection between any future R&D activities and any potential decarbonization that may arise

from such activities. According to the authors, the R&D fund would only support applied research; commercial development of fuels and other technologies would be the responsibility of other parties, such as engine manufacturers, shipbuilders, energy providers, ports, etc. In addition, the proposers assert that the architecture of their proposal may be applied if the IMO moves through with a tax and that their proposal is not meant to obstruct or retard the establishment of an MBM should have an agreement among Member States on this (implying that this would be their preferred MBM) (Mocerino et al., 2018).

Whatever the issue, the European Green Deal and their connection to the shipping of decarbonisation through the EU ETS have abruptly enhanced the EU's standing as a significant party in the IMO process. Following the news's release, the IMO Secretary General raced to defend the IMO's overall strategy the IMO Secretary General rushed to protect the overall IMO approach and declared his willingness to speak with the European Commission and Parliament. It is unclear how these dialogues will develop. In terms of substance, we believe that it would be better to take a tax on bunker fuel or carbon emissions would be a far better MBM than the ETS in the effort to decarbonize shipping. This is because the European Green Deal, which naturally affects shipping, may place more pressure on the IMO to respond quickly. See Psaraftis (2012), Psaraftis and Lagouvardou (2019), and Lagouvardou et al. (2020) for a further discussions related to the pertinent topics.

Regardless of the fact that MBMs won't be on the IMO's agenda any time soon, obtruding a sizable bunker levy on a worldwide scale is a possibility that might be worth taking into account. Significant means at least one order of magnitude is more than 10 or 20 USD per ton, which is occasionally what the industry is viewing. Simply put, if society truly disapproves of fossil fuels or any other fuel that emits GHGs (and this includes LNG), it should at least attempt to implement the "polluter pays" principle by internalizing (even partially) the external costs of GHGs. This is true even if society cannot, for obvious reasons, mandate the outright prohibition of GHGs. On the other hand, there is no question that

these fuels will be used as long as they are inexpensive. The economic aspect is at the heart of every discussion surrounding LNG, hydrogen, and other alternative fuels (see section The Drive to Decarbonize Shipping above). We want to understand not only how much GHGs these alternative fuels would prevent, but also how much it would cost to produce and use them. On the other hand, unless technology makes a quantum jump, these alternative fuels won't be used as long as they are not profitable. The usage of fossil fuels will continue as long as they are affordable.

2.2.4 Advantage and Disadvantage of Sea Transport for International Trade

For much of the sector, shipping plays a crucial and essential role in the supply chain. Without including shipping in the discussion, it is quite challenging to comprehend the cycle of global trade. . A consistent and ever-increasing trend is the growth of sea transport. In particular, from the early 1990s to the present, maritime transport has emerged as one of the key fundamental players in the movement of products. The information discloses a rather startling fact: the majority of goods are believed to be transported by water, or about 80%, according to the most recent studies and estimates.

This is not a coincidence; the majority of maritime transport usage is accounted for by a number of values and characteristics that are highly advantageous to and beneficial to enterprises. But there are also drawbacks to using this mode of transportation that might be mentioned. The next section provides a quick overview of the benefits and drawbacks of maritime transportation, the most popular mode of transit for products. (Chang et al., 2019).

Advantages of maritime transport

Shipping freight via sea is referred to as maritime transport. It makes it possible to convey enormous amounts of freight effectively, making it an essential component of cross-border trade. Maritime transport is a mode of transportation that can provide a service with significant benefits to businesses. The following list of

benefits highlights the main factors that make shipping by sea one of the most popular choices for businesses worldwide.

Cheaper Rates

There is no question that the cost of any service contracting is the primary determining factor. Compared to other modes of transportation like rail or air, maritime travel is far more affordable. The maintenance cost of shipping is one of the primary causes of the significantly reduced pricing. In comparison to other modes of transportation, this is considerably less expensive. Due to this, the ultimate price of maritime transportation is significantly more appealing than other options.

Ideal for Large Volumes of Goods

Enormous volumes of goods can be transported more easily with maritime transportation than it is with other modes of transportation simply because of its structure. Actually, the best method to carry big quantities of goods is maritime transport. This method is ideal for easily moving bulky goods like industrial equipment, machinery, and auto parts.

Key to Foreign Trade

A longer-standing method of bridging several global markets, maritime transport has a lengthy history and traditions. The most significant and efficient trade routes in the world have been designed and drawn by the sea, which is a primary component of international trade.

Green and Sustainable Transportation

Shipping plays a major role in today's world of rising environmental awareness. It is because ships use less fuel than, say, airplanes, ships have a small carbon impact. Using maritime transportation is the primary option for businesses looking to reconfirm their sustainability plan.

Maximum Efficiency

The tremendous efficiency of maritime transportation is one of its main features and benefits. One of its most remarkable characteristics, which enables it to adapt to any type of shipment and goods, is the capacity to be grouped by containers. Achieving great levels of efficiency in their shipments.

Security

The ships are built with the utmost level of safety in mind when conveying any kind of cargo. A meticulous management and security standards is ensuring the safety of transportation. Safety is the primary concern throughout the whole life cycle of cargo loading by sea. It is one of the safest forms of transportation because incidents have been sharply reduced in recent decades. As can be seen, shipping across the sea has significant benefits for businesses of all sizes.

Disadvantages of Maritime Transport

After listing the benefits, it is still important to highlight a few marine transportation-related ideas that could be seen as drawbacks.

Slow Speed

This problem is a crystal-clear. For commodities with a long lead time, ocean freight is ideal but takes more time. Currently, air travel has a significant advantage.

Lack of Infrastructure

It is necessary to keep in mind that some regions of the infrastructure or ability to accommodate huge cargo ships, which may reduce the number of destinations.

2.3 History of Maritime Industry

Water has been a tool used by humans to move goods from one region to another since the beginning. The earliest "ships" were simply individual logs with modest cargo attached to them that

were floated down rivers for trade. Eventually, logs were connected to carry bigger loads. The first significant commercial routes between present-day Pakistan and India were established along the Arabian Sea some 5,000 years ago. Land travel became risky as a result of bandits attacking caravans, thus seamen started to travel on the sea. They navigated the waves with an astrolabe. A device known as an astrolabe was used to forecast the positions of the sun, moon, planets, and stars.

The Romans were also building ships that could sail the Mediterranean Sea in approximately a month at the same period. They conveyed low-value products like building supplies and grains. Transporting these commodities by sea was considerably more affordable than via land. Roman trade routes soon became more extensive and included crossing the Indian Ocean. The Arab Empire established commercial routes through Asia, Africa, and Europe from the seventh through the thirteenth centuries. Travel by sea was important because the rivers in the Islamic world were difficult to navigate. These cutting-edge ships, known as qaribs, significantly decreased the amount of time it required to convey commodities.

Europeans were able to cross the Atlantic thanks to advancements in shipbuilding and navigation during the Age of Discovery, which spanned the 15th through the 19th century. This paved the way for trade routes to Mexico and Peru for silver and to Virginia and Maryland for tobacco. Now, a wide variety of items could be traded between Asia, England, France, Denmark, Portugal, and the Americas. Trade businesses evolved and Dutch East India Company enjoyed the most success. The Suez Canal made it possible for ships to travel directly from Europe to Asia during the 19th and 20th centuries. Pacific and Atlantic Oceans were joined via the Panama Canal. Container shipping emerged in the latter half of the 20th century, resulting in the modern shipping industry.

2.4 Maritime Transport Network

Transportation networks—including those for rail, air, road, and marine transport—play a key role for the economy in terms of

production, consumption, and worlwide trade. More than 90% of global trade is transferred by maritime industry. Applied to many areas, including maritime transport, network research is a growing field. Generally, network embraces two primary components namely nodes and edges. Nodes and edges make up the two fundamental parts of a network. A node is a collection of core components, things, or things in general. An edge is a group of node pairs that show how the nodes are connected or related to one another. A network's structure determines how its nodes are linked. Nodes in transportation networks are ports or terminals that are connected by a means of transportation. Seaports, dry ports, terminals, and depots can serve as nodes or vertex in a maritime transportation network, and linkages or edges denote transportation services including shipping, road, rail, and air transport services (Ducruet, 2020).

Numerous assessments of the world's maritime flows quickly emerged, each with a distinct set of goals and results as a result of the rapid growth in computing power, the resurgence of the "science of networks," and the increasing accessibility of data on maritime traffic. For instance, it seemed very natural to physicists to look at the topological characteristics of the global marine network, which accounts for at least 90% of all world trade, with a focus on container shipping. Using common metrics from the then-vibrant research field of complex networks, they emphasized the membership in the classes of scale-free and small-world networks. Other contributions of this type included comparing the networks of various fleet types to better understand marine bioinvasions, examining the similarities and differences between the networks of container shipping and airlines, and building international port-to-port matrices to calculate the effects of various scenarios on flow distribution. By mapping the nodal regions and centrality of important hub ports for container shipping, general cargo, and in the multiplex graph, geographers also contributed to these dynamics. Departed from the conventional perspective of port nodes to examine the development of a vast region-based global container shipping network. Similar methodology-based

evaluations of local and regional maritime networks made up the majority of the other contributions to the topic (Lee et al., 2018).

This brief analysis of the question that this study aims to solve raises a number of concerns. First, the majority of the aforementioned contributions concentrated on container shipping, which is recognized as the most valuable and contemporary form of maritime transportation. Since its inception in the middle of the 1950s, and particularly after the introduction of mega-ships in the 2000s, container shipping has experienced rapid growth and transformation of its network configurations. If we omit comprehensive density maps created in recent years and solely consider other concerns without referencing networks, including environmental implications (see for instance Halpern et al. (2008)), We discover that other fleet types were given significantly less consideration from a network perspective, leaving little knowledge of the entire global maritime network. Second, and related to the first, the emphasis on container shipping encouraged academics to stay current and, as a result, to examine contemporary topologies, particularly the form of the network from the late 1990s onward. Therefore, it is impossible to explain or show how much more recent and current topologies differ from older ones. This gap in knowledge is remarkable given the efforts made to comprehend, for example, how the container revolution affected global trade between 1962 and 1990 and the countless studies on how technical advancements have affected the port and shipping industries. (Peng et al., 2018).

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CHAPTER III
SHIP KNOWLEDGE

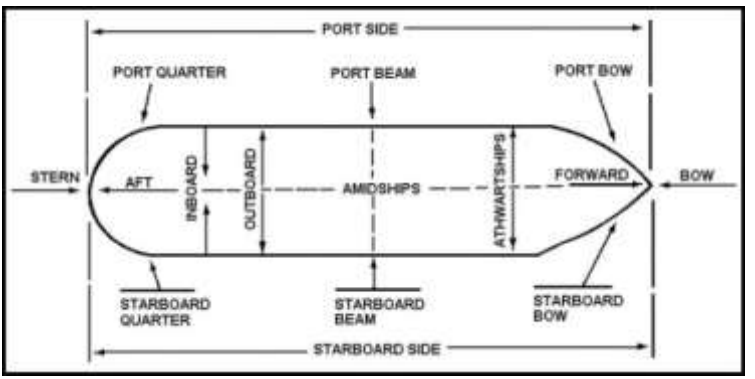
By Dhion Meitreya Vidhiasi

3.1. General Terminology

A. Directions

Various phrases unique to the maritime lexicon are used to characterize multiple directions given on board the ship. Assuming a forward motion during a voyage, a passenger standing in the ship's center would be looking forward. "Astern" means "behind" or "behind you". Starboard is the term used to describe the side of the ship on the right when looking forward; port is the term used to describe the side of the ship on the left when looking forward.

Abeam refers to a location 90 degrees off the ship's fore-and-aft (forward and aft) axis. Therefore, this location is referred to as the starboard beam on the ship's right side and the port beam on the left. Stem (or bow) refers to the very front of the structure. Amidships refers to the ship's center area. The foredeck is the area of a vessel between its midships and bows. The afterdeck is located aft of the ship's superstructure amidships, while the stern is the ship's most rearmost point.



Picture 3.1. Direction of a ship

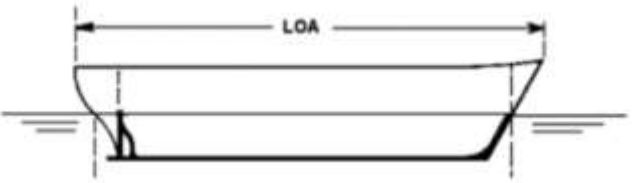
(Rosso, 2010)

Decks refer to most of the "floors" on a ship, whereas deck-heads refer to the ceilings and roofs. Room dividers (also known as bulkheads) can be found in cabins and other storage areas. Holds are numbered storage areas for various types of cargo. The hatch serves as a door to the hold. It is necessary to remove numerous cross-beams to accommodate hatches, which weakens the deck. A sturdy steel wall is erected at the hold's entrance to regain this stability. The term "hatch coaming" refers to this particular piece of trim. Any structure that prevents water from entering an aperture or entry in the deck is known as a coaming. The lower hold is the lowest level when a hatch has two decks. Tanks are located in the double bottom space, between the ship's outer and inner bottom plates. The boards forming the ceiling keep these from getting damaged.

A ship's hull refers to the vessel's outer shell and internal structure. Ships' superstructures are part of the hull, the outermost layer of the vessel. Bow thrusters or transverse propulsion units are standard on the bow of many modern cargo and passenger vessels. The main reason for their creation is the ability to navigate more easily in restricted waterways like ports. The rudder controls the ship's direction and is positioned in the very rear. Tankers, bulk carriers, and cutting-edge cargo liners include bulbous bows to improve passenger and crew comfort by decreasing pitching in rough seas and allowing for greater speed while ballasting.

B. Ship's Dimension

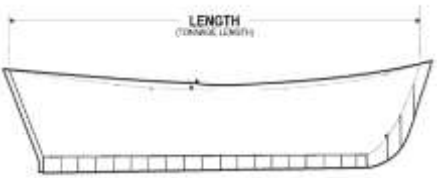
The vessel's dimensions must be known to pass the physical ship survey. The following dimensions and the overall length, length of the vessel, breadth, and depth must be checked. Length-Over-All (LOA) is the total length of a boat or ship, measured from the tip of the bow to the tip of the stern.



Picture 3.2. Length of Overall (LOA)

(Sarawak Rivers Board)

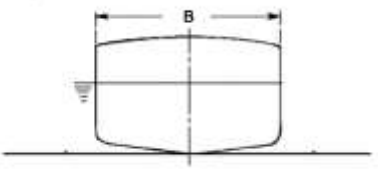
The vessel's Length (L) is determined by extending a straight line from the forward face of the stem (the vessel's primary perpendicular member at the bow) to the after face of the sternpost (the vessel's primary perpendicular member at the stern). On a waterline at 85% of the least molded depth, this is equal to 96% of the overall length or, if more, the distance from the forward side of the stem to the axis of the rudder stock on that waterline.



Picture 3.3. Length of the vessel

(Sarawak Rivers Board)

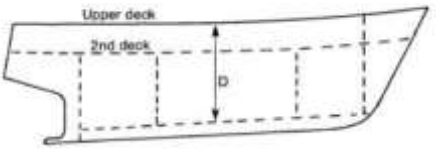
Breadth (B) or beam is measured from the most outboard point on one side to the most outboard point on the other at the widest point on the ship.



Picture 3.4. Breadth

(Sarawak Rivers Board)

Depth (D) Is measured vertically from the lowest point of the hull, ordinarily from the bottom of the keel. The depth of a vessel involves several vertical dimensions: freeboard, draft, draft marks, and load lines.



Picture 3.5. Depth

(Sarawak Rivers Board)

Length between perpendiculars (Lpp) is the distance between the Fore and the Aft Perpendicular. **Length overall** (Loa) is the horizontal distance from stem to stern.

Length on the water line (Lwl) is the horizontal distance between the stem's and stern's molded sides when the ship is on its summer mark.

Breadth (B) is the greatest molded breadth, measured from side to side outside the frames but inside the shell plating.

Breadth overall is the maximum breadth of the ship as measured from the outer hull on starboard to the outer hull on the port side.

Draught at the stem (Tfwd) is the vertical distance between the water line and the underside of the keel, as measured on the fore perpendicular.

Draught at the stern (Ta) is the vertical distance between the water line and the underside of the keel as measured from the aft perpendicular.

Down and trimmed by the head is a condition when the draft is larger at the stem than at the stern.

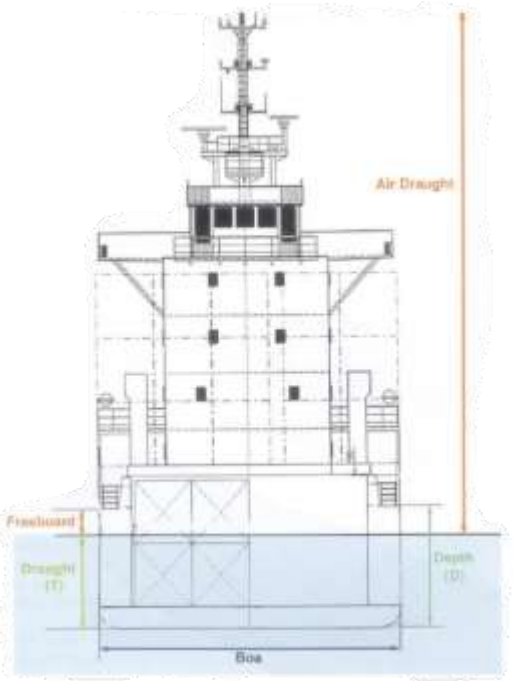
Down and trimmed by the stern is a condition when the draft is larger at the stern than at the stem.

On an even keel, in proper trim, is a condition when the stern's draft equals the stem's draft.

Depth is the vertical distance between the baseline and the continuous upper deck. The depth is measured at half Lpp at the side of the ship.

Freeboard is the distance between the water line and the top of the deck at the side (at the deck line). The term summer freeboard means the distance from the top of the S-line of the Plimsoll's mark and the topside of the deck line.

Air draught is the vertical distance between the water line and the ship's highest point. The air draught is measured from the summer mark. If the ship has less draught, one can ballast until it reaches the summer draught and obtain its minimum air draught.



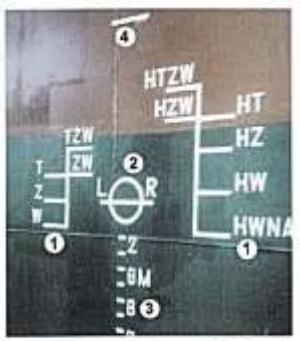
Picture 3.6. Ship's Dimension

(van Dokkum, 2011)

The Plimsoll Mark, also known as the Freeboard Mark, is a symbol that indicates the depth to which a vessel can go before it has insufficient freeboard for safe operation (van Dokkum, 2011). The symbol consists of a circle with a diameter of a foot (0.305 m), through which a horizontal line has been drawn with its upper edge passing through the center of the circle. This is the lowest safe freeboard level in the summertime on salt water. You will notice a series of horizontal lines next to the circle; these are the load mark, which denotes how much room there is above the waterline. A single vertical line joins all load traces together. Cargo can be loaded into the ship up until the highest point of the load line that applies is flush with the waterline.

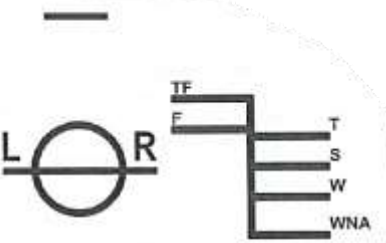
The crew should check the Plimsoll mark to ensure the safety of everyone on board. Above the mark, a reference line known as the deck line is drawn to make checking the mark's location easier. The port and starboard sides and the vessel's centerline need to have permanent markings placed on them to designate the mark line and the deck line.

Deck cargo of lumber qualifies a ship for a deeper draft if specific requirements are met (Rosso, 2010). The timber mark on the ship's freeboard is specifically designed for this function. The shell plate must be permanently marked with the draught, load lines, and Plimsoll mark.



Explanation of the picture at the right:

S = Summer (for water with a density of 1.025 t/m³)
W = Winter (ditto)
T = Tropics (ditto)
WNA = Winter North Atlantic (ditto)
TF = Tropical Fresh water
F = Fresh water



1: Plimsoll mark
2: Plimsoll line
3: Draught marks
4: Deckline

Picture 3.7. Plimsoll Mark

(van Dokkum, 2011)

C. Volumes and Weights

A ship's length, width, and height can be expressed in terms of those properties. A variety of abbreviations are used for various concepts. Depending on the vessel in question, a different phrase must be used. The capacity of a container ship is measured in terms of the number of containers it can carry; the size of a RORO carrier is described in terms of its total deck area in square meters; the

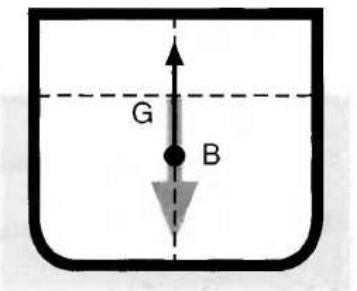
capacity of a passenger ship is measured in terms of the number of passengers it can transport. The IMO conference in 1969 adopted the new units "Gross Tonnage" and "Nett Tonnage" to establish a global standard in determining a ship's size. Port fees, pilotage costs, and the required number of crew members, are often calculated based on a ship's Gross Tonnage.

The register ton is utilized to calculate the cubic footage of a room. The volume of one register ton is equivalent to 100 cubic feet (cft), or 2.83 cubic meters (m^3). To determine the ship's gross tonnage (GT), a formula is used that factors in the ship's volume in cubic meters below the main deck and the enclosed compartments above the main deck. Then, we multiply this volume by a fixed amount to get a number without units of measurement (this means no values of T or m3 should be placed after the number). All the measurements utilized in this calculation are simulated ones. The owner of a ship will maintain the GT low to reduce the vessel's operating costs. If the depth is reduced, more cargo (often containers) can be stored on deck. This method is commonly employed by smaller container ships. The lack of reserve buoyancy can lead to a decrease in stability and an increase in "water on deck," which can be pretty dangerous.

Cargo volume is described by another dimensionless number called the Nett Tonnage (NT). By deducting the volume of the crew, navigation equipment, propulsion equipment, and workshops from the GT, the NT can be determined. You cannot have an NT that is lower than 30% of the GT.

The volume of the ship's hull, propeller, and the rudder below the water line equals the displacement. Displacement refers to the volume of water the vessel's body "displaces" while at rest in the water (van Dokkum, 2011). The term "ton" (or "tonne") is used to denote volumetric displacement. Following Archimedes' Principle, the weight of a vessel is equal to the weight of the water it displaces. That's why an upthrust in a boat is proportional to the amount of water it carries away. Therefore, "displacement" refers to either the overall mass of the vessel and its cargo or the mass of water that has

been moved. When an object's buoyancy (B) is equal to the force of gravity (G), the object will float. As a result, the ship will go down when its buoyancy is less than the force of gravity. A ship can only fly when its buoyancy is greater than the force of gravity. Since this is the case, "G" cannot be less than "B."



Picture 3.8. Gravity and Buoyancy

(van Dokkum, 2011)

Because "ton" can represent either weight or volume, mariners are often unsure about its precise meaning. One ton is equal to 1000 kg. A "long ton" is equivalent to 1,016 kg. The weight of the antiquated "short ton" is 907 kilograms. According to the metric system, one ton equals one cubic meter; however, in the English avoirdupois-system (avdp), one ton equals 2.83 cubic meters or 100 cubic feet. Since "volume" is crucial in commercial transactions, merchant ships are typically measured in terms of volume instead of displacement, which shows weight.

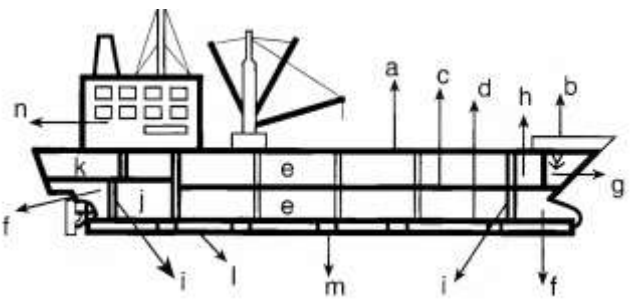
There are various tonnages that we can identify. **Gross Register Tonnage** refers to the whole amount of the ship's hold, including the volume available for passengers and cargo. Cargo capacity is measured in terms of N**ett Tonnage**. Cargo capacity is determined by dividing the gross tonnage by the number of available cargo compartments. Gross tonnage is typically used to determine harbor fees, while some ports use the Nett Tonnage or less-than-load-aiding (LOA) method. **Deadweight tonnage** is the maximum allowable weight of cargo when a ship is laden to the

Summer mark. Cargo, storage, equipment, fresh water, drinkable water, lubricating oil, and gasoline are just a few items that can be found on a commercial ship. The term "**cargo carrying capacity**" refers to the maximum weight that a ship can transport.

Van Dokkum (2011) explained that there are essentially four distinct kinds of cargo areas: By "Bale Space," we understand the volume of the cargo holds that can be used to transport general cargo; by "Grain Space," we understand the volume of the cargo holds that can transport dry bulk cargo; by "Oil Space," we understand 98% of the total volume of the wet bulk tanks; and by "Ullage," we understand the empty space on top of the liquid level that will prevent a tank from overflowing when the oil expands due to heat.

3.2. Vessel Arrangement Plan

Knowledge of a vessel is never separated from knowing the arrangement plan of the vessel itself. A sailor as much as possible to understand every part of a vessel. This is intended so that a crew member can work effectively and efficiently. The basic layout depicts the sectioning of the vessel along its length and width to reveal its many storage areas. Each section is separated from the next by horizontal dividers and vertical bulkheads (decks). These rooms and halls house the vessel's cargo, supplies, equipment, spare parts, liquids, etc., as well as the passengers and crew, and function as "domestic areas" like the kitchen, pantry, medical clinic, etc.



Picture 3.9. Longitudinal section with spaces and separations (van Kluijven, 2007)

Stem refers to the very front of the vessel. A vessel's stern is its most rearmost point. Most of the time, *the deck* (**a**) above the waterline is the one that is subjected to the elements of the sea and the weather. The main deck is also referred to as the "weather deck" for this reason. More precisely, it acts as a "shelter" for everything inside the vessel. The *forecastle* (**b**) is the forwardmost section of the main deck. The Vauxhall acts as a protective barrier. On this deck is where you will find the anchor winches. The *tweendeck* (**c**) lies between the *main (upper) deck* (**a**) and the *tanktop* (**d**), the internal bottom of the vessel.

The tweendeck separates each hold of the vessel. The goods are stored in the *top* and *lower holds* (**e**). Tanks are storage areas for fluids. Hatches provide a means of entry to a hold. These hatches need to be large enough on freighters for grabs to be lowered into the hold below. The *peak tanks* (**f**) are the forward and aft areas of the vessel. They can "absorb" some of the impact forces that are released after a collision, and they can also hold ballast water. The chain locker (g) is where the anchor chain stays when not in use. It looms above the head of the front peaktank. Ropes, paint, and dunnage can be found in the *vesselswain's* (or *bosun's*) *locker* (**h**), located in the forward peaktank's upper section.

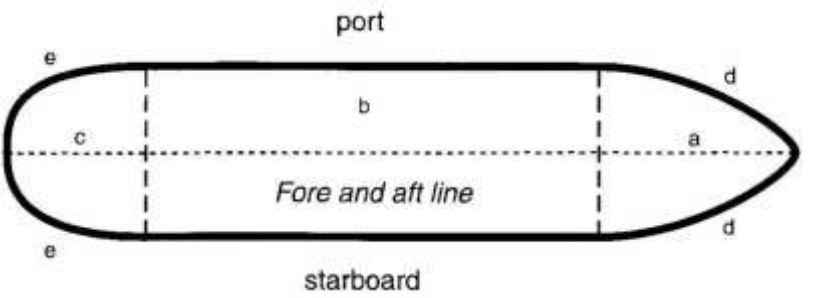
The vertical walls that separate compartments on a vessel are called bulkheads. The so-called collision bulkhead is made up of the *forepeak* and the *aftpeak bulkhead* (**i**). If the vessel is involved in a collision, the watertight transverse bulkheads will protect the interior from flooding. Fire retardant or fireproof construction is standard for collision bulkheads.

In addition to the usual transverse bulkheads, tankers typically have two longitudinal bulkheads that separate the vessel into a center tank and two wings. The vessel's propulsion plant is housed in the *engine room* (**j**), a waterproof mechanical area. As

substantial stresses occur under the engine room and peak tanks, extra reinforcement is often installed. The *steering engine room* (**k**) must also be a watertight compartment and is typically located above the after *peaktank* (**f**).

The vessel's *double bottom* (**l**) makes it sturdy and offers plenty of room for supplies, including gasoline, oil, seawater, and freshwater. Longitudinal and transverse separations are utilized between double-bottom tanks to prevent liquids from escaping from one tank into another. *Cofferdams* (**m**) are the terms used to describe the gaps between things.

The crew quarters, passenger staterooms, dining hall, and galley are all located in the "*superstructure*" (**n**) on the vessel's main deck. The radio room, the chartroom where maps, pilot books, and other publications are housed, and the wheelhouse are all part of the navigation bridge. The Radar, the log, the echo sounder, the steering compass, and the repeating compass are all navigational instruments. The monkey island, a small deck or platform above the wheelhouse, is typically where the master compass is kept.



Picture 3.10. The Upper Deck

(van Kluijven, 2007)

The fore and aft line is a fictitious line running down the vessel's centerline from bow to stern. The vessel's deck is now clearly demarcated into starboard and portside sections (when

facing forward). The term "abeam" designates a course perpendicular to the vessel's forward and aft axis. Ahead, aft, starboard, and port indicate a vessel's possible courses.

The upper deck, often known as the main deck, is further subdivided into the "*forecastle*" (**a**), "*midvessels*" (**b**), and "*quarterdeck*" (**c**). *Poopdeck* is slang for an elevated quarterdeck. The front of the vessel is known as the bow and is split in two: *starboard* and *port* (**d**). *Starboard* and *port quarters* (**e**)make up the quarterdeck.

Below are some examples of arrangement plans for several types of vessels

Picture 3.11. Multi-Purpose Vessel "Capricorn"
(van Dokkum, 2011)

No.	Part of the Vessel	No.	Part of the Vessel
1	Rudder	**21**	Shear strake
2	Propeller	**22**	Hold fan

3 Main engine

4 CO_2 bottles

5 Man overboard vessel

6 Free fall lifevessel

7 Crane for MOB, lifevessel, life raft, and provisions

8 Funnel with all exhaust pipes

9 Rear mast with navigation lights

10 Cross trees with radar scanners

11 Top deck with magnetic compass and search light

12 Accommodation

13 Hatch cradle

14 Heavy fuel oil tank

15 Bulk cargo

16 Vertical bulkhead or pontoon

17 Heavy cargo

18 Project cargo

19 Horizontal decks or hatch

23 Fixed bulkhead

24 Container pedestal

25 Tanktop, max. load 15 t/m^2

26 Containers, 5 rows, 3 bays

27 Vertical bulkhead or pontoon

28 Hatch coaming

29 Wing tank (ballast)

30 Bulk cargo

31 Gangway

32 Stacked hatches

33 Top light, range light

34 Breakwater

35 Anchor winch

36 Collision bulkhead

37 Deeptank

38 Bow thruster in nozzle

39 Forepeak tank in bulbous

	covers		stem
20	General cargo	**40**	Port side
		41	Starboard side

Multi-purpose (or multi-loads) vessels are cargo ships that can transport many types of cargo, including general cargo, bulk freight, and containerized cargo. Different types of cargo require specific cargo handling equipment; hence these ships include a wide range of options. Oil, bulk, and ore can all be transported on board an OBO ship. She has been split up so that the biggest tanks can transport oil and the smallest ones can haul ore.

Picture 3.12. Open Container Vessel
(van Dokkum, 2011)

No.	Part of the Vessel	No.	Part of the Vessel
1	Rudder	**12**	Wing tank (water ballast)
2	Propeller	**13**	Service gallery
3	Stem	**14**	Fixed stack

4	Container (40 ft length; 40' stack)	**15**	Movable stack
5	Container (20 ft length, 20' stack)	**16**	Bay no. 15
6	Accommodation ladder	**17**	Bay no. 06
7	Pilot or bunker door	**18**	Tier no. 86
8	Container guide rail	**19**	Cells, holds 1 and 2, for containers with dangerous goods.
9	Row no. 11	**20**	Container support
10	Row no. 04	**21**	Breakwater
11	Tier no. 8	**22**	Bulbous bow

Container ships are specifically designed to transport containerized cargo. Containers are typically stacked in rows, bays, and tiers, and their sizes are expressed in Twenty Feet Equivalent Units (TEUs). The rows run abeam (or athwartship), the bays run forward and aft, and the tiers are horizontal. There is a reference to this storage method in the three-digit code found on every box. This makes it simple to locate each storage unit. Sometimes the gantry cranes used to load and unload containers are installed aboard the ships. Shipping containers may transport dry goods, liquids, and perishables. Short lay time due to effective and speedy cargo handling; few stevedores needed; these are just a few benefits of transporting cargo in containers. Theft is reduced because the goods are secure in lockable containers.

Picture 3.13. Tanker Vessel

(van Dokkum, 2011)

No.	Part of the Vessel	No.	Part of the Vessel
1	Balanced rudder with conventional propeller	**13**	Double bottom tank
2	Auxiliary unit	**14**	Tanktop
3	Lifeboat	**15**	Longitudinal vertically corrugated bulkhead
4	Hydraulic prime mover	**16**	Transverse horizontally corrugated bulkhead
5	Cargo control room	**17**	Cargo pump
6	Tank heating / tankwash room	**18**	Catwalk
7	Cofferdam	**19**	Railing

8	Vent pipes with pressure-vacuum valves	**20**	Deck longitudinal
9	Hydraulic high-pressure oil and return lines for anchor and mooring gear	**21**	Deck transverse
10	Hose crane	**22**	Cargo heater
11	Manifold	**23**	Forecastle deck with anchor and mooring gear
12	Wink tank in double hull	**24**	Bow thruster
		25	Bulbous bow

Smaller tankers called "product tankers" transport numerous oils. Double bottoms are required for all tankers for reasons of safety. Fuel, lubricating oil, and water are all kept in these compartments. Bulkheads run the ship's length and cross it to create the different compartments. Cofferdams are the voids in a double-bottom tank or between two tanks. They act as barriers to stop fluids from transferring between storage tanks. Pump rooms can frequently be seen in cofferdams. These spaces can house cargo pumps used during loading and unloading. The offing is a common location for loading and unloading tankers using flexible pipes. Wet bulk handling uses this method to cut down on downtime.

3.3. Grammar

A. There is vs There are

The choice between the phrases there is and there are at the beginning of a sentence is determined by the noun that follows it. Use there is when the noun is singular ("There is a ship"). Use there are when the noun is plural ("There are two boats").

Positive Form

There is one lighthouse. (Countable)

There are two lifeboats. (Countable)

There is salt in the jar. (Uncountable)

There's some oil on the sea. (Uncountable)

Negative Form

The negative is formed by putting not after is or are:

There is not (isn't) a lifejacket on the table.

There are not (aren't) three hammers in the box.

Questions Form

To form a question, we place "is/are" in front of there. We use any with plural questions or those which use uncountable nouns. We also use "there is/are" in short answers.

Is there a lifejacket on the table? - No, there is not (isn't) / Yes, there is.

Are there any lifejackets on the table? - Yes, there are / No, there are not (aren't).

How Many with Are There

If we want to find out the number of objects that exist, we use "How many" in the following form:

How many + plural noun + are there (+ complement).

How many lifejackets are there on the table?

B. Singular vs. Plural

It would be best if you used a plural noun when referring to more than one person, animal, place, item, or concept. Plural nouns are used if more than one particular thing is being discussed. To indicate plurals in written work, it is common to use the same word and append an -s, -es, or -ies to the end. One needs to look at the word to know that a noun is singular or plural. It is a singular noun when it refers to one and only one thing. A noun is said to be plural when it may refer to more than one person, thing, or idea. Adding a **-s** to the end of a solitary noun makes it plural (vessels, boats, lighthouses). Plurals are formed by adding **-es** to singulars that end in **s**, **x**, **z**, **ch**, or **sh** (hatches, compasses, boxes, fishes). A singular word that ends in a consonant before **y** and then **y** becomes plural by dropping the **y** and adding **-ies** (machineries, ferries).

C. Article (a, an, the)

Nouns in English can come before the definite article (the), the indefinite article (a, an), or nothing at all. When a noun refers to something that can be specifically identified, rather than something more abstract, the definite article (the) is employed.

Here are three situations when we can identify what is being referred to:

1. When the noun has been mentioned already.
   e.g. General cargo vessel can be used to transport many boxes. The boxes can come in various types.
2. When word following the noun define which particular one it is.
   e.g. The ship beside that island is a Tanker.
3. When there is only one of the nouns in the world, or only one in the context of being referred to. (e.g. The earth, the chief mate, the Captain)

The indefinite article (a, an) is used in front of singular nouns when they are used as countable nouns and when the reference is general rather than particular, that is, when we do not say which example of the noun is being referred to (e.g. There is a vessel in a port). No article is used when the noun is plural, or when the noun is used as an uncountable noun (e.g., there were cadets on board).

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CHAPTER IV
THE ACTIVITIES IN SHIP

By Fakhrurrozi

4.1 Preface

Ships as a means of transportation at sea, play an important role in every activity of carrying goods or cargo from one port to another. As a means of transportation, ships are a link and unifier between regions, between islands, and also between countries. Activities or work carried out on a ship, is a job full of risks. For this reason, every crew member is expected to always comply with occupational safety and health provisions. Activities on board, which are very important to know, in connection with shipping activities, are the activities of the navigation watch service.

Provisions regarding navigation watchkeeping on ships are regulated in Chapter VIII, Standard Training, Certification, Watchkeeping for Seafarers (STCW) 1978 which states Standard Regarding Watchkeeping for Seafarers with amendments, namely amendments 2010. Navigation watchkeeping activities are carried out from the time the ship departs from a port, until the ship arrives at the port of destination. Navigation watch service is carried out on the bridge by the officer on duty at 4 hour intervals. An officer on duty is assisted by a helmsman and an observer if needed in carrying out guard duties. Within 24 hours a day, the implementation of the navigation watch service is divided into 6 periods, namely:

- Period 00.00 – 04.00 (dog watch)
- Period 04.00 – 08.00 (morning watch)
- Period 08.00 – 12.00 (forenoon watch)
- Period 12.00 – 16.00 (afternoon watch)
- Period 16.00 – 20.00 (evening watch)

- Period 20.00 – 24.00 (night watch)

During each watch period, every Officer of the Watch (OOW) is fully responsibility about the safety of the ship's navigation. The OOW based on Annex 2 International Regulation Standard Training, Certification, Watchkeeping for Seafarers (STCW) 1978, states the main responsibilities of an officer of the watch, which are stated as follows:

> "The Officer of the watch is the master's representative and his primary responsibility at all time is the safe navigation of the ship. He should at all the times comply with the applicable regulation for preventing collision at sea".

Implementation of navigation watch duty is set by the Captain/Master. The Master as the supervisor and guider for OOW carry out navigational watch duties and are responsible for the safety of the ship. Each member of the watch (OOW and Duty Rating) must also understand and be fully aware of efforts to protect the marine environment and efforts to prevent pollution for the consequences that arise if pollution occurs. For this reason, every precaution must be taken against the occurrence of pollution. Precautions refer to international regulations and applicable national/local regulations.

Source information about officer of the watch on duties:

1. The Annex 2, International Convention of STCW 1978 resolution on Bridge Watchkeeping.
2. The company navigational instruction.
3. The Master's Standing Orders.
4. The Master's Night Order.
5. The Master's Verbal Order.

Officers who carry out navigational watch or deck guard duty, must meet the requirements in accordance with the provisions relating to navigational watch or deck guard duty, namely based on STCW 1978 with its amendments.

1. Basic:
   Chapter II : Master and Deck Department.
   Chapter VII : Alternative Certification.
2. Additional:
   Chapter IV : Radiocommunication and Radio Officer.
   Chapter V : Special Training.
   Chapter VI : Basic and Proficiency Training.

In order to make the ship always in good seaworthy condition and safe on every voyage, the Master will ask for a passage plan to be made in advance. The passage plan is made by the navigational officer, who is usually the Second Officer. The passage plan that has been made will be re-examined by the Master and after being evaluated and examined, the passage plan will be approved by the Master and used as a guide in carrying out the voyage. The passage plan includes the following stages:

1. Appraisal.
2. Passage planning (making course line - berth to berth)
3. Execution.
4. Monitoring.

4.2 Bridge Watchkeeping

The ship is on a voyage from one place to another, its voyage is controlled from the bridge and the controller is carried out by officers and ratings who are on guard duty at the bridge. The success of the voyage to the destination in a safe, secure, efficient and timely manner is highly dependent on the abilities and skills of these officers. This activity is carried out routinely from one port to the destination port, it seems quite simple without much thought, but actually it contains various aspects that really need attention, professionalism and good management.

The biggest factor causing ship accidents is human error, it is based on analysis of the Maritime Safety Committee (SMC). Human error is none other than management on the bridge/bridge team. A simple example is the Chief of Staff on duty falling a sleep due to lack

of rest in connection with carrying out guard duties, the result of which is a collision. Sailing a ship, far or near is a voyage full of risks. This risk can occur during shipping, and must be minimized, even if possible eliminated. To achieve this goal, it must be supported by the utilization of available human resources and supported by existing equipment on the bridge, where all personnel involved with activities form a solid working group/good and professional bridge team.

In passage planning, there are several things that need to be considered in order to get a safe, secure, efficient and timely voyage. In this paper, several sub-topics will be discussed that can support the achievement of the team on the bridge during the voyage.

4.2.1 Preparing For Sea

Preparation before sailing is an important step that must be checked through the checklist "Preparation Before Sailing/Departure" as Chapter IX - Management for the Safe Operation of Ships, SOLAS 1974, and must be ensured according to actual conditions. The Master must satisfy himself that the ship is seaworthy before taking to sea. He must ensure that :

- the cargo is stowage safely,
- the ship is properly battened down,
- ship has positive GM,
- all moveable objects are secured,
- bridge equipment tested and operational,
- the main engine, auxiliaries and the steering gear are fully operational, and
- personnel are back on board, properly rested and ready to perform their duties.

Before beginning the voyage, every equipment, likes navigational equipment, steering equipment, anchors and machinery, ship whistle and horn, navigation light, signal light, ship main engines and auxiliary engines as well as emergencies engine equipment, must be tested first and if things go wrong or there are indications

of non-compliance, then must be reported immediately to the Master as positive reporting.

Prior ship sailing must be made and check all testing gear. The navigation officer reports to the Master regarding the passage plan and ensures that the passage plan, nautical guidebooks for sailing direction, tides and currents information for the time of departure, charts with the large scale is available corrected up to date. Navigating officer must ensure passage plan details and that future charts are stored in the right sequence, latest weather forecast should be available, log books, and other publication books, are all ready and have been updated in accordance with the latest Notice to Marine. Navigating officer also ensure to the Master thats the pilot card is completed whit up to date information, all time are updated from the time of departure, and bridge and engine room clocks are synchronized.

Activities carried out before the ship departs are carrying out checks according to what is in the checklist. The things that must be checked and ensured that they are in good condition and functioning properly are:

1) Ensure the passage plan has been prepared for the intended voyage.
2) Ensure charts and other nautical publications for intended voyage corrected up to date.
3) Ensure the equipment, auxiliary and machinery has been check and ready for use:
   a) Anchor and its supporting equipments.
   b) Deck Log Book and bridge maneuvring book.
   c) Echo Sounder.
   d) Gyro and compass repeaters.
   e) Magnetic compass repeaters.
   f) Radar and ARPA.
   g) Required AIS data inputs made.
   h) Synchronised the clock on the bridge and engine control room.

4) Ensure the following equipment been tested, synchronised and found ready for use:
   a) Telegraph on the bridge and engine room:
      - RPM indicators,
      - emergency engine stops,
      - telegraph, thruster controls and indicators,
      - controllable pitch propeller controls, and indicators.
   b) Communication facilities:
      - bridge to engine room/ mooring station communications,
      - portable radio for internal communication, and
      - VHF radio communications with port authority.
   c) Navigational and signal lights, including searchlights, signalling lamp, and morse light.
   d) Sound signalling apparatus, including whistles, fog bell and gong system.
5) Ensure steering gear:
   a) manual, steering,
   b) auto pilot, and
   c) emergency changeover arrangements and rudder indicators.
6) Ensure window wiper and clearview screen arrangements.
7) Ensure the ship secure for sea:
   a) Cargo have been securely fastened.
   b) All manhole, door and hull openings secure and watertight.
   c) Stowage plan for cargo detail are available.
   d) Draught information and stability calculation are available.
8) Ensure all crew on board and all visitors ashore.

4.2.2 Watchkeeping in the Pilotage Waters

When the ship is in pilot waters, the ship will receive services from the port authority in the form of guidance by a navigator from land

or called pilot. However, the presence of a pilot on board does not necessarily take over responsibility for the safety of the ship, while sailing in pilot waters or on the fairway. The presence of a guide is to give directions and give consideration to the Master when entering or leaving the port, or while in pilot waters.

Annex 1, the International Convention, states that:

> "Despite the duties and obligations of a pilot, his presence on board does not relieve the Master or Officer of the watch from their duties and obligations for the safety of the ship. The Master and Pilot shall exchange information regarding navigation procedures, local conditions and the ship characteristics. The Master and officer of the watch shall co-operate closely with the pilot and maintain an accurate check of the ship's position and movement".

Based on the provisions in Annex 1, the Master or OOW, if they know that the actions or instruction given by the pilot can endanger the ship, they can ask for clarification or explanation in more detail.

Annex 2, IMO Convention Resolution, state that:

> "If the OOW is in any doubts as to the pilot's actions or intentions, he should seek clarification from the pilot, if doubt still exist, he should notify the Master immediately and take whatever action is necessary before the Master arrives".

Before pilot boarding the ship, the officer of the watch must have prepared a pilot card and a Master and Pilot Exchange Document. When the pilot is picked up or disembarked:

1) an officer must be in attendance with radio communication to the bridge,
2) other crew member should also be in attendance in case of an emergency,
3) whenever a pilot transfer takes place there must be:
    a) a lifebuoy and light ready for immediate use with a heaving line,

b) proper illumination,
c) a torch at night, and
d) radio for communication.

4.2.3 Watchkeeping in Coastal Water

Near-coastal voyage is a term in the division of territorial waters based on geographical and meteorological aspects. In simple terms, Near Coastal Voyage is a voyage between countries whose distance is less than 500 NM calculated from the outer islands of a country. Near coastal voyage policies are commonly implemented by many countries to protect regional shipping and trade fleets.

A near coastal voyage is a voyage filled with many risks. Starting from the risk of running aground, the danger of collision because the waters are busy with fishing boats, to the possibility of robbery and piracy attack. For that everything needs to be prepared when sailing near the coast. The International Convention states:

> "The largest scale chart on board, suitable for the area and corrected with the latest available information, should be used. Fixes should be taken at frequent intervals, whenever circumstances allow, fixing should be carried out by more than one method. The OOW should identify positively all relevant navigation mark".

While passage near the coast, the OOW, when taking over the watch must pay attention to the following matters:

- Ensure the ship's position and would expect the ship to be at the end of the watch,
- Ensure and examine the track and verify the track as the compass course,
- Ensure and give note expected tidal set, buoys, lights or any other conspicuous navigational mark in the next half hour,
- Ensure to see what Master night orders especially when he requests a call.

4.2.4 Watchkeeping during Ocean Passages

The OOW when carrying out watchkeeping in the ocean passage, must always be alert to any risk of collision that may occur with other ships. Rule 5 of the International Regulation for Preventing Collision At Sea states:

> "Every vessel shall at all times maintain a proper look out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and the risk of collision".

The OOW for navigation, whether the officer or the helmsman, is required to carry out keep sharpe look out at all the time during his watchkeeping. The look out in question by sight, hearing and all existing navigational equipment, solely to avoid the possibility of a collision. For this reason, officer of the watch must ensure the helmsman or the automatic pilot is steering in the correct course. The OOW must take standard compass error at least once a watch and, when possible, after any major alteration of the course, the standard and gyro compass are frequently compared and repeaters are synchronized with their master compass. The automatic pilot is tested manually at least once a watch. Weather forecasts, navigation and signal lights and other navigational equipment are functioning fix the ship's position.

When on ocean passage, the master every noon has been require any information about the most accurate position of the ship, day's run, daily average speed, total distance sailed, general average speed, distance to go the next port and ETA.

4.2.5 Watchkeeping in reduce visibility at Sea

The term restricted visibility means any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms or any other similar causes. The officer of the watch must ensure that in restricted visibility conditions, the duty look out has been carried out properly, the engines are ready to maneouvre, the ship

is underway at a safe speed, sound signals are functioning properly, and all radio communication facilities are in accordance with the channel or frequency.

> "When restricted visibility is encountered or expected, the first responsibility of the officer of the watch is to comply with the relevant rule of the applicable regulation for preventing collision at sea, with particular regard to the sounding of fog signal, proceeding at safe speed and having engines ready for immediate manoeuvres. In addition he should:
>
> a) Inform the master,
> b) Post a proper lookout and helmsman and in congested water, revert to hand steering immediately,
> c) Exhibit navigation lights,
> d) Operate and use the radar.
>
> It's important that the officer of the watch should know the handling characteristics of his ship, including its stopping distance, and should appreciate that other ships may have different handling characteristic."

When meet with conditions of restricted visibility, the use of fog signals is a very effective signaling of the presence of ships. Especially if the condition of the waters is a lot of fishing or fishing boats, to detect our presence, the ship must sounding the whistle or fog horn.

4.3 Making a Landfall and Preparing for Arrival

Having made landfall, it is most important to identify the aid to navigation or the land is sighted, there will be doubt about the ship's position relative to land, and OOW would work out the ETA for the expected landfall.

When making landfall and preparing for arrival, the officer of the watch would like to calling the master, and give him any information, about:

- The depth recorder running and I would show the Master how soundings compared with the chart.
- Worked out rising distances for the first sighting of lights and briefed the lookout accordingly.
- The radars running and tuned. I would prepare some ideas about the likely coastline.
- Checking the GPS against the land datum.
- Prepared information about tidal set and drift and any local currents likely to be experienced.

Activities on board, would be done prior to arrival is:

- the engineers to prepare Main Engine and Auxiliary Engine ready for manoeuvre.
- Inform the officer, rating for anchors and mooring arrangements fully operational.
- Pilot ladder in readiness on the leeside and there may be cargo operations to consider.
- Comply with coastal state reporting scheme.
- Advise the pilot.
- Report to the VTS and port control if appropriate.
- Check the bridge and the navigational equipment.

When the ship arrives at the port of destination, it is possible that the ship can directly berthed or anchored. When the ship is anchored, the officer on duty must pay attention as stated in International Convention Resolution, Annex 2, and Article 27.

OOW to checked and plot the ship position on the appropriate chart, check a sufficiently frequent intervals whether the ship is remaining securely at anchor by taking bearing of fixed navigation marks or readily identifiable shore objects, ensure that an efficient lookout is maintained, ensure that inspection rounds of the ship are made periodically, observe meteorological and tidal conditions and states of sea.

Always to notify the Master and undertake all necessary measures if the ship drags anchor, ensure that the state of readiness of main engines and other machinery is in accordance with the master's instruction, and if visibility deteriorates, notify the master and comply with the applicable regulation for preventing collision at sea. At all times, as required to ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made, and take measures to protect the environment from pollution by the ship and comply with applicable Marine Pollution Regulations.

For safety navigation, the officer of the watch should be monitor communication by radio VHF, comply with the Collision Regulation and maintain a security watch follow ISPS Code.

4.3.1 Taking Over the Watch

The handover of watchkeeping in the bridge is an activity in the implementation of the navigation watch service from the officer of the watch who has carried out the watchkeeping to the replacement officer of the watch. OOW by handing over this navigation watchkeeping, the responsibility for the safety of ships, goods and passengers during the voyage has shifted to a replacement officer of the watch. As stated in International Convention of Resolution:

> "The relieving officer of the watch should ensure that members of his watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. The relieving officer of the watch should not take over the watch until his vision is fully adjusted to the light conditions and he has personally satisfied himself regarding:
>
> (a) Standing orders and other special instruction of the Master relating to navigation of the ship,
>
> (b) Position, course, speed and draught of the ship,
>
> (c) Prevailing and predicted tides, current, weather, visibility and the effect of these factors upon course and speed,

(d) Navigational situation, including but not limited to the following:

(i) Operational condition of all navigational and safety equipment being used or likely to be used during the watch,
(ii) Error of gyro and magnetic compass,
(iii) Presence and movement of ship in sight or known to be in the vicinity,
(iv) Conditions and hazards likely to be encountered during his watch,
(v) Possible effect of heel, trim, water density and squat on the under keel clearance.

If at the time the officer of the watch is to be relieved a manoeuvre or other action to avoid any hazard is taking placed, the relief of the officer should be deferred until such action has been completed".

4.3.2 Calling the Master

The master of every ship is required to issue Master standing orders and Master Night Order, to be formally acknowledged and signed by each navigating officer prior to the commencement of the voyage. When the officer of the watch decided to call the Master, he must be in the mid prior to communicating with the Master, if there was an emergency, the officer of the watch should be call the master to the bridge immediately and explain the situation when he arrived. The International Resolution states:

"The officer of the watch should notify the Master immediately in the following circumstances:

(a) If restricted visibility is encountered or expected,
(b) If the traffic conditions or the movements of other ships are causing concern,
(c) If difficulty is experienced in maintaining course,
(d) On failure to sight land, a navigation mark or to obtain soundings by the expected time,

(e) If, unexpectedly, land or a navigation mark is sighted or change in soundings occurs,
(f) On the breakdown of the engine, steering gear or any essential navigational equipment,
(g) In heavy weather, if in any doubt about the possibility of weather damage,
(h) If the ship meet any hazard to navigation, such as ice or derelicts.
(i) In any other emergency or situation in which he is in any doubt.

Despite the requirement to notify the Master immediately in the foregoing circumstances, the OOW should, in addition, not hesitate to take immediate action for the safety of the ship, where circumstances so require."

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CHAPTER V
THE PURPOSE OF STUDYING ABOUT SHIPS

By Cinthia Reswari

5.1 The Prospects of Working on Ships

5.1.1 High demand

Nowadays, the prospect of working on ship is very good. There are high demands of ship crew from the shipping companies. Why? One of the reasons is that it is an essential industry. Ocean transportation which can also be called as "international ocean transportation", is one of the most popular means of transportations in this world. This industry provides maritime passenger services as well as freight services. Goods are transported from one city to another, one country to another, and so on. Many ships participate in this industry. Those ships need many crews to work on them. The demand is high. So, working on ships is a good prospect.

In general, there are two kinds of ocean transportation. They are called as coastal transportation and ocean transportation. Coastal transportation is when ships are used as a means of transportation to sail along the coast to transport goods and passengers.

On the other hand, ocean transportation refers to the transportation when ships are used for carrying goods and passengers in the ocean. In the business world, ocean transportation is when a ship is transporting goods or passengers between domestic ports and foreign ports. It can also be between foreign ports in different countries. At other times, ocean transportation can also be called as international shipping.

5.1.2 Good salary

Working on ships is also good for your future because usually you will have good or high salary. People who work on ships usually have very high salary, especially if they are working in a reputable shipping company. By working on ships, you can save much money and invest your money even at young age. You can make your future better. Here are some ideas on what you can do if you have high salary.

***Picture 5*.1 Some Ideas in Using your Salary**

5.1.3 Chances to travel

By working on ships, you also have many chances to travel from city to city and even from country to country. You can have more experience and knowledge about the world. You will understand the world much better. In addition, you will be able to open your horizons.

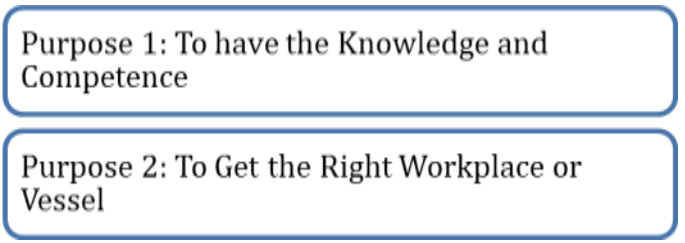
Based on www.tripsavvy.com, there are benefits of travelling around the world. Travelling around the world can:

- Sharpen your mind
- Give you the chance to try new things
- Allow you to meet new people
- Let you experience other cultures
- Give you exercise

- Allow you to come home renewed

Now, we have understood the prospects of working on ships. Well, are you interested to work on ships? Or are you actually a student who is projected to work on ships in the future? If you are, have you ever wondered why you need to study about ships? For example, why do you need to know the different kinds of ships? And what knowledge should you study about ships?

Has any kind of those questions popped up in your mind? If so, you need to know the purposes or the reasons on why you need to study about ships. Knowing the reasons are important. There are two main purposes of studying about ships. Look at Picture 5.2 to know what the purposes are.



Picture *5*.2 Five Purposes of Studying about Ships

5.2 Purpose 1: To Have the Knowledge and Competence

The first purpose or reason why you need to study about ships is to get enough knowledge and competence so that you are eligible to work on board. Not all people can work on ships. Only those who have the knowledge and competence about ships can. This is not as simple as studying about the types of ships, the parts of ships and so on.

However, a person who wants to work on ships needs to study so many things related to ships. For example, they need to study in a

vocational school, academy, polytechnic, or university. In Indonesia, there are many educational Institutions that have nautical, technical, and shipping transportation study programs.

Other than that, they are also required to study in many courses to gain certificates. There are special certificates that need to be attained by seafarers who want to work on board. Now, pay attention to Picture 5.3 about a job vacancy for ship crew as an example of the requirements needed for a person in applying a job on board.

***Picture 5.3* An Example of a Job Vacancy for Ship Crew**

(Source: Author's picture made with Canva, Ship photo: by Victor Puente from Pexels)

Based on the job vacancy in Picture 5.3, we know that there are requirements to work on board. People who do not meet those requirements will not be successfully selected as a crew member. One of the requirements is having valid certificate as per STCW 2010. There are so many certificates that must be possessed by the people who work on board based on STCW 2010.

What is STCW? It stands for Standards in Training Certification and Watchkeeping for Seafarers. The latest version of STCW is the 2010 version. Therefore, all seafarers must refer to it when dealing with the competencies they need to master before going on board. Different crew members will have different functions and level of responsibility as shown in Table 5.1.

Table 5.1 The Function and Responsibilities of the Crew on Board based on STCW 2010

Function		Level of Responsibility		
		Management	Operational	Support
Deck	Navigation	V	V	V
	Cargo handling and stowage	V		
Deck and Engine	Controlling the operation of a ship and care for persons on board	V	V	
Engine	Marine engineering	V	V	V
	Maintenance and repair	V	V	
	Electrical, electronics and control engineering	V	V	

Radio	Radio communicatio n		V	

Source: STCW 2010, page 14

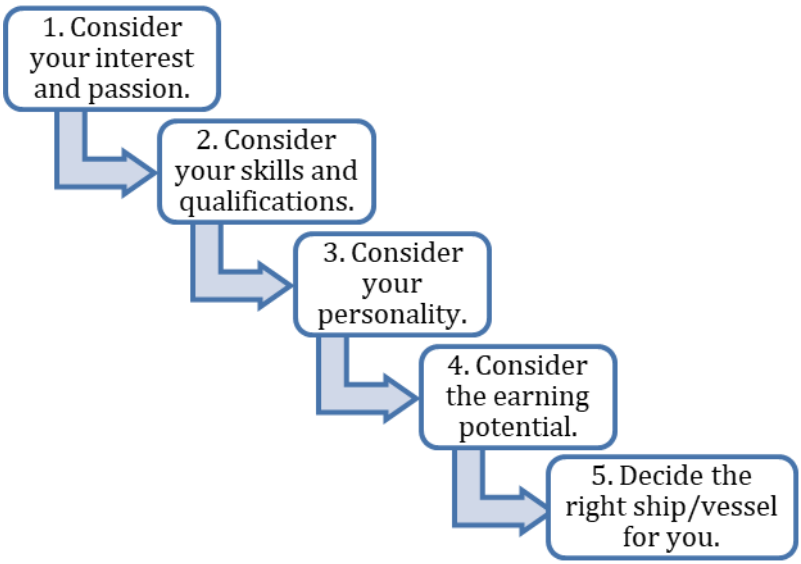
Based on Table 5.1, we can see the differences of the function and level of responsibility of the crew. Because of those differences, some crew may need more certifications that the other crew. If you would like to study more about the certifications, please study the book entitled "STCW: A Guide for Seafarers" (2010 version) on page 78 and 79. You will find a detailed table there.

If you have a dream to get a good job in a reputable shipping company, you need to make yourself competent to get the job. Being a competent seafarer means you need to study about ships by joining the training and holding the certificates based on STCW 2010.

5.3 Purpose 2: To Get the Right Workplace/Ship/Vessel

The second purpose or reason why you need to study about ships is so that you can choose the right workplace/ship/vessel. Before choosing a job, in this case before choosing the type of ship that you want to join, you must learn the different types of ships/vessels. In addition to that, you should do research on the advantages and disadvantages of working on those different types of ships/vessels.

By understanding well about the different types of ships/vessels, you will be able to decide the most suitable one for you. Each person has different preferences, capabilities, and passion on the type of ship he/she wants to join. When you study about the ships and vessels, you can consider your interest and passion, skills and qualifications, personality, and the earning potential. Look at Picture 5.4 about the things to consider in choosing the right ship/vessel.



Picture 5.4 **The Things to Consider in Choosing the Right Ship/Vessel**

5.2.1 Considering your interest and passion

Each person has different passion. For example, if you are a person who has the passion to work with goods and big ships, you might be interested to work on cargo ships. You should study the pros and cons of cargo ships. Then, you can choose to work there or not. Similarly, if you like challenges, you would also take account of tanker ship. Tanker ships carry various types of oils or gas.

5.2.2 Considering your skills and qualifications

To consider the skills and qualifications that you have before choosing a ship is essential. Make an honest reflection on the skills and qualifications that you master very well and do not master yet. You will know your strengths and weaknesses. After that, you can decide on which type of ship is most suitable for you.

5.2.3 Considering your personality

Every person has different personalities. Are you a person who likes to socialize? Or are you a person who likes to have time for yourself? If you are a person who is interested in communicating with many people and have the passion to meet many people, you would probably like to work on passenger ships or cruise ships. You can study about the benefits of passenger ships or cruise ships. Then, you may also find out about their disadvantages. After you understand both, you can decide whether you should work there or not.

5.2.4 Considering the earning potential

Every of us want to get much income to make our life better. Before choosing on which ship you want to join, you might as well find out about the salary or income if you work there. Ask the questions to yourself. Is the salary enough for me? Is the salary representative? After you find out about the information regarding the salary, you may decide to choose the right ship for you.

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CHAPTER VI
SHIPPING

By Aditya Mutiara Dewi

6.1 Shipping in General

Shipping relates to the transport of cargo between ports and ships. For some, shipping means ships and seaborne business. For others, shipping refers to modes any form of transportation that moves the cargo between two geographic points. International Shipping is the relationship between one country and another using ships through the waters international. The shipping business involves a number of actors that support and facilitate the transportation of cargo by sea, including:

1. Shipowners are parties who own ships and make decisions about how to use existing ships to provide shipping services, when and how to buy new ships, and what ships to buy
2. Shipbuilders are parties that build new ships and sell them to ship owners
3. Scrap dealer is a party that buys old ships from ship owners for scrap
4. Terminal operators are parties that provide port services for ships, such as berthing and cargo handling
5. Intermodal transport operators are parties that provide intermodal transportation services for the movement of cargo from door to door

Other actors closely related to the shipping business, among others:

1. Ship agents are companies that represent ship owners and are engaged in routine business

related to ship arrival, operation and departure of ships
2. Charterers are parties that hiring ships to transport cargo
3. Shipbrokers are specialist mediators between ship's owners and ship's charterers or between buyers and sellers of ships
4. Common carriers are transportation operators that provide services to the general public at published rates
5. Non-vessel operating common carriers are transport operators that do not have operating vessels, but coordinate to provide of shipping services

International shipping has 5 types of shipping, namely:

1. Conference Liner (shipping Conference)

   Shipping Conference are shipping company groups that undergo certain voyages and with a fixed schedule with:

   a. Freight rates that has been mutually agreed upon
   b. Berthing Schedule at the port at a certain time

   The main function of the Liner shipping is for fulfiling the demand for regular transportation where cargo is transported via regular routes and on a regular schedule. Liner system operates according to the loading and unloading port schedule, usually following a schedule in accordance with the determination in the transport. The purpose of the shipping conference is

   a. Eliminate competition in freight rates among member
   b. Avoiding outside competition by trying to monopolize shipping lines for conference

members by attracting the loyalty of shippers. Discounts given by the conference can be in the form of:

1) Cash rebate or immediate rebate, namely a discount that is paid immediately after the shipment of goods is carried out.
2) Deferred rebate are deductions given after a certain period of time, for example within a period of 3 months or 6 months.

c. Loyal shippers receive a discount as a cash rebate or deferred rebate for the gross freight rate

Conference Type :

a. Closed Conferences
   The shipping company only become a member if the other members agree. The basis for becoming a member is the strength of prospective new members.
b. Open Conference
   This occurred at a conference that sailed from/to the United States because the Antitrust Law emphasized that each ship wishing to become a member must be accepted under certain conditions, for example regarding the size of the ship's tonnage and shipping plans.

Advantages of having a conference:

a. Freight rate is stable (no increase/decrease)
b. Regular shipping on schedule

Disadvantages of having a conference:

a. Freight rate is usually high
b. Fixed rates, eventhough market demand changes, such as on tramper lines.

c. Rules & procedures are rigid and complaints from shippers usually lead to new regulations to protect the conference.

2. Non Conference Liner

Non-conference liners are starting to push the existing conference liners due to:

a. The development of containers, both in terms of size, usability, and sophistication
b. The emergence of several self-propelled shipping carriers and also the emergence of container consortia

The result is that on several routes, conference liners are forced to negotiate with non- conferences regarding duties, rate and services.

3. Alliance

Alliance is a collaboration between 2 (two) large shipping companies, both in terms of transportation and in the use of facilities owned by each company. This alliance started in the container era because cargo was easily transferred from one ship to another. As an example: Maersk Line and Sea-Land began working together in 1991 based on a VSA (Vessel Sharing Agreement) which then entered into an alliance in 1995. They work closely together and can use ships between the two companies, using the policies their respective commercials so that they remain competitive. In 2000, Sea-Land was bought by Maersk, but kept the Sea-Land name. Other known alliances are Hapag-NOL-NYK, Evergreen-Lloyd Triestino, Mol-Nedlloyd.

4. Non-Vessel Operating Command Carrier (NVOCC)

The NVOCC company can be said to be a shipping business that doesn't have any ownship. NVOCC is a

cargo consolidation business where the cargo is collected in containers or known as a freight forwarding business. How to send and receive goods on a fixed schedule because it uses space charter / charter slot / box time from a container liner ship with a fixed schedule. NVOCC uses the ocean bill of loading from the carrier, while its customers are charged using the house bill of lading. The advantage is that the carrier is paid for the box rate while for the customer a "parcel fee" is charged along with a minimum rate if the parcel is small.

5. Tramper

Tramper is a shipping company that operates ships without a fixed berthing schedule and irregular port. The shipping schedule is based on demand and supply. In terms of leasing and rate, shipping companies and goods owners are usually guided by:

a. Costs to produce the transportation services offered
b. Competition among shipping companies

In the case of freight, it is customary for the payment system to be carried out in several stages with a certain percentage, for example:

Stage 1 : At the time of signing the contract (...%)

Stage 2 : When the ship starts loading (...%)

Stage 3 : When the ship departs (...%)

Stage 4 : When the ship arrives at the destination

Stage 5 : When the ship is unloaded (...%)

The aim of the tramper market is to provide a convenient and economical means of transporting cargo that require transoceanic movement. One of the characteristics of the tramp market is searching

for cargo worldwide and providing flexibility in sea transportation to fulfilled needs of world trade (Kendall & Buckley, 2001). A tramp vessel can be any vessel that doesn't have a fixed itinerary and primarily transports dry cargo in bulk from one or more ports to one or more different ports.

Tramp shipments only carry one commodity at a time and usually carry loads from one shipper. In tramp markets, cargo is transported at shipping rates, where the terms and conditions are based on negotiations

Various interpretations of shipping mean that the shipping business is dynamic and complex. Shipping is one of the international industries in the world. The shipping business is critical to economic development because international trade and related business activities depend on the efficiency and availability of shipping services

The shipping business is very important for the development of economic activities because business and trade transactions require ships to transport cargo from production to consumption

Shipping is fundamental to international trade as it provides a cost-effective means of transporting large quantities of goods around the world. The movement of goods by sea is the lifeblood of the economy in many countries. The demand for shipping services is generated from the demand for goods to be transported. The movement of cargo by sea transport occurs as a result of trade with one party (goods sender) selling commodities to another party (goods receiver). Shipping services involve a number of commercial activities, including providing infrastructure, operating vehicles, and managing organizational systems such as enterprise resource

planning, which is an information system that integrates all related operations and applications for the overall activities of the company. The transportation system involves three key components used for the movement of goods and the nodes connecting them (Steenbrink 1974):

1. Fixed infrastructure such as ports or terminals
2. Vehicles such as ships or barges that use fixed infrastructure to move cargo
3. Organizational systems needed to ensure that vehicles and infrastructure can still be used effectively and efficiently

6.2 Agency

Agency is a legally enforceable relationship that occurs when two parties agree to make an agreement, where one party called the agent agrees to represent the other party called the owner (principal) on condition that the owner still has the right to supervise agent regarding the authority entrusted.

Ships that will berthing at a port, the ship needs services and has various ship needs that must be met, then the shipping company will appoint a ship agent in the port area to be visited. The organization and operation of ship agency is regulated by the Minister of Transportation Regulation Number PM 65 of 2019, which defines ship agency business as a business activity to take care of the interests of ships of foreign sea transportation companies and/or ships of national sea transportation companies while in Indonesia. Services that can be provided by ship agencies include:

1. Reporting on the plan and realization of the arrival and departure of ships with the agency to the Minister through the Director General

2. Submission of ship documents to the main harbor master, Main Port Authority or local port management unit and related government agencies
3. Management of port services required by ships
4. Appointment of loading and unloading companies for the benefit of ship owners
5. Completion of expired ship documents at the expense of the ship owner
6. Collection of additional money on the order of the ship owner
7. Bookkeeping and cargo search
8. Issuance of bills of lading for and on behalf of the ship owner
9. Settlement of bills on behalf of the ship owner
10. Completion of filling bunkers with fuel oil, fresh water and meeting the needs for equipment and supplies
11. Provision of information required by the ship owner
12. Implementation of other activities agreed upon between the ship owner or ship operator and the ship agency executor

Ship agents who have provided services are entitled to receive payments from ship owners based on the following considerations:

1. Type of cargo and ship's size
2. Volume and weight of cargo
3. Form of packaging
4. Type of service
5. Port of destination
6. Waiting time at the port (port stay)

A national ship agency company that has obtained ship agency approval must register its business activities with the operator of the nearest port by attaching an

association membership certificate. If a discrepancy is found, the port administrator may refuse the registration of the ship agency company and may recommend to the Minister for suspend or revocation of the ship agency approval. If within 6 (six) months since the suspension of the ship agency approval does not comply with the requirement, then the ship agency approval is revoked. Agency companies that have obtained agency approval must have competent human resources in the field of ship agency.

The Minister evaluates the ship agency approval and business activities of national ship agency companies. Evaluation procedures are carried out through applications in accordance with statutory provisions. Evaluation of ship agency approval is carried out every 2 (two) years, including:

1. Updating documents in the form of commercial or operational licenses
2. Annual report on ship agency business activities for the last 2 (two) years
3. Financial reports for the last 2 (two) years
4. Minutes of administrative verification in the form of an office address according to a domicile certificate, facilities and infrastructure according to the requirements, and technical details from the local port operator.

There are three types of ship agents, namely:

1. General agent

   General Agent is a national shipping company appointed by a foreign shipping company to serve the ships owned by the foreign company during sailed and berthing at the Port of Indonesia. For example, a Danish shipping company, namely Maersk Line, appointed Djakarta Lloyd as general agent, so Djakarta Lloyd has the task of serving ships owned by

Maersk Line while sailing and berthing at Indonesian ports.

The requirements to become a general agent are Indonesian shipping companies that have Indonesian-flagged vessels of at least 5,000 GT and have proof of an agency agreement or have a general agency letter (letter of appointment). Sea companies appointed as general agents are prohibited from using the space of foreign ships they are agents for, either partially or wholly to transport domestic cargo (KM 33 of 2001, Chapter V, Article 45 paragraph 1-4). The duties of the General Agent include:

a. Coordination of operations and marketing

   Coordination of operations is the task of ensuring that the loading and unloading of ships is carried out properly by the Loading and Unloading Company (PBM), in addition to ensuring that the ship enters the berth at the port, the piloting and tugboats are carried out properly.

   Marketing coordination is the task of searching for cargo, notifying the arrival of ships, and relations with market forces.

b. Financial coordination

   Financial coordination includes collecting and recording all ship expenses while in port. Because bills from the port are often late, the disbursement department is tasked with settling outstanding bills. Agents need a sizable amount of advance money, especially for tramper ships, because there is a possibility that they will no longer stop at the port where the agent is located.

c. Appointment of sub-agent/agent

General agents can order their branches or other companies as agents to assist in carrying out tasks at certain ports.

d. Collect disbursement of ship expenses

All bills are collected while the ship is in port and after departure which is supervised by the operations and finance department. Ship agency appointed as General Agent, must submit the following documents:

1) Report on Public Notice of Arrival and Departure of Ships (LK3) to the local port operator
2) Monthly report on ship visiting activities by the agency to the local port operator no later than 14 (fourteen) days in the following month
3) Report on the realization of the actual trip of the agent's ship to the Director General with the provision that ships on regular routes no later than 14 (fourteen) days after the ship completes 1 (one) trip and ships with irregular routes every 3 (three) months
4) Annual report on company activities to the Director General, no later than March 31 of the current year which is a recapitulation of the ship's journey.

2. Sub-Agents

Sub Agent is a shipping company appointed by the general agent to serve certain needs of ships at certain ports. The sub agent functions as a representative or agent of the general agent.

For example, Djakarta Lloyd, who had been appointed as general agent by Maersk Line, appointed another national shipping company, for example Tridharma Wahana, as a sub agent who stopped at Makassar

port, because Djakarta Lloyd did not have a branch there. Sub Agent duties include:

a. Ship services (Ship's husbanding), namely crew services, ship repair or maintenance, supply of spare parts or ship parts.
b. Agency Operations, namely tasks related to agency operations, such as managing loading and unloading, stowage lashing, and handling cargo documents.

3. Branch Agents

Branch Agent or agent branch is a branch of the general agent at a certain port. For example, Djakarta Lloyd who was appointed as general agent by Maersk Line ordered its branch in Surabaya to serve the needs of Maersk Line which stopped at Tanjung Perak Port. Djakarta Lloyd can appoint PT. Pelni as sub agent in Semarang (KM 33 of 2001, articles 27 & 28). The opening of a branch office is carried out outside the provincial area of the head office by considering the following:

a. The balance between demand and supply of ship services at the Special Port or Terminal
b. Opportunities and employment opportunities for local residents

Agency business activities at several ports (branch offices) must be registered through the issuance of a letter of registration for ship agency business activities with the following considerations:

a. Ship agency business activity plan for at least 3 (three) months
b. The distance and location between the head office and the port of business activity
c. Administrative area

In opening a branch office, a ship agency company submits an application to the Director General and a copy to the port administrator by attaching the following requirements:

a. Commercial or operational permits in the form of ship agency approval
b. Certificate of domicile of the company's branch office issued by the competent authority
c. Decision letter on the appointment of the head of the branch office as the person in charge and identity card
d. Proof of ownership of the place of business or a lease agreement of at least 1 (one) year
e. Proof of ownership of facilities and infrastructure to support the business activities of a ship agency branch office consisting of office equipment, computer equipment, active internet facilities and a ship agency service website.
f. Decree on the appointment of experts as permanent employees accompanied by certificates and certificates of at least 1 (one) year work experience from shipping companies and/or national ship agency companies. The experts in question are experts in sea transportation and port management or sea transportation management with a minimum diploma of D-III (diploma three), nautical experts (ANT III), or technical experts (ATT III).
g. Letter of consideration for opening a branch office from the local port operator

As a company that produces transportation services to various regions according to the area of the route network served, its organizational structure is based on region, namely having representatives at the location where a company operates. The company

depends on the size of the company (Large Scale - Medium Scale - Small scale) which means:

a. Organization can be centralized or decentralized, line organization or line and staff organization
b. The organization of a simple transport company consists of:
    1) Top management (President)
    2) The marketing director consists of:
        a) Sales department
        b) Section traffic / traffic transport
        c) Pricing section / rate of transportation services
c. Director of Operations, in charge of managing the implementation of ship safety duties, ship crew arrangements, operational scheduling and ship fuel, which consists of
    1) The transportation department is responsible for the transportation of goods and passengers
    2) Road maintenance section
    3) Ship maintenance section
    4) The terminal operations section that regulates ships is in the port
d. The administrative director is tasked with fostering duties in the fields of personnel, finance and general affairs consisting of
    1) Finance Department
    2) Human Resources Department
    3) General Department

Shipping agents' income comes from services provided to ships that have appointed them to serve port activities. The shipping agent will get a call fee from each ship that will stop by and get a commission from the cargo that will be loaded onto the ship in the form of a percentage of the freight earned.

Agent as a national shipping company, apart from acting as an agent for foreign companies, they also have their own ships, so they get income from:

1. Commissions from ships
   a. Own ships
   b. Agency ships (Call fee & commission from cargo
   c. Service orders from loading and unloading companies (PBM) appointed for loading/unloading from owned/agency ships.
2. Agency business income
   a. sub-agency commission
   b. EMKL (Sea Cargo Expedition)
   c. Haulage / trucking
   d. Depot
   e. Transhipment

6.3 Charter

"Charter" comes from the Latin word meaning contract and is an agreement that grants franchise rights or privileges from sovereign rulers. Chartering is a ship empowerment business that takes care of sea transportation for various commodities. In terms of rates, the ship owner expects the highest charter rate, while the charterer expects the lowest possible rental rate. However, ship owners and charterers need each other. The obstacles faced by ship owners are the large investment required to build a fleet, the high costs of daily operations and the cost of maintaining ships so that there is a need for consolidation and expansion of the business to obtain a healthy future for the company. Efforts that can be made to achieve this goal are by adding a fleet and obtaining a return on capital and return on investment that has been invested. The charter market is influenced by supply and demand and

thus has an impact on the rent paid for transport services.

The charter market is said to be a charter market if there are more ships available in a certain area compared to the commodities being transported, then it is likely that the ship owner is forced to accept a low rent to get his ship work in that area or occurs when the supply is greater than the demand. Conversely, the charter market is said to be an owners market if there is a lot of cargo to be transported compared to the availability of ships in a certain area, the ship owner is very dominant to get the opportunity to increase charter rates.

Charterers' decisions and chartering policies in the tanker market are more oriented towards safety while for the bulk carrier market they are more oriented towards transportation than safety.The categories of criteria in determining the shipowner selection process in the dry bulk market are (Plomaritou, 2006a; Moore, 2000):

1. Low-cost ocean freight operations, through transportation solutions that reduce costs and maximize results
2. Improper charter negotiation process, ie
   a. compliance with charter negotiation rules
   b. provision of accurate and reliable information regarding ships c. cooperation and response to the needs of tenants
3. Compliance with international safety management regulations, namely:
   a. Well designed and built bulk carriers
   b. Well maintained bulk carriers
   c. Crew training and competency
   d. Employee training and competency

4. Reputation & image of the ship owner in the shipping market
   a. Past experience of loss and damage from the shipping company
   b. Shipowner's reputation for reliability
5. High quality transportation service provider
   a. Proper cruise planning b. Fast shipping
   b. Proper loading and unloading operations without downtime
   c. Reduce turnaround time to a minimum e. Safe cargo transport to its destination
6. Maintenance of good relations with tenants
   a. The relationship between the ship's crew and charterers is well established
   b. The relationship between the company and tenants is well established
7. Information system to clients and tenants
   a. Updated tenant information system
   b. Informative nature of the advertising program

The key to the success of the chartering business is determined by knowledge of the shipping market including ship charter rates, availability of transported commodities, ship schedules and other vessels offered ship.

Compared to owning a ship, chartering has a number of advantages, namely:

1. Reducing debt leverage ratios (Stopford 2009)
2. Chartering offers the possibility to allocate resources to other activities such as door-to- door services (Fremont 2009)
3. Securing the cost of a predetermined future slot on the part of the charter (Drewry Shipping Consultant, 1999)

4. Chartering provides indirect access to ship funds, leasing or partnership structures (Von Oldershausen 2005)
5. Charters are a way for companies to compare the operating performance of their ships with chartered ships (Carlou and Wolff, 2011)

The parties that are interconnected in the chartering process are:

1. A charterer is a person looking for a ship to transport his own commodities and acts as a seller or buyer of commodities or a person who rents a ship, then offers it to the owner of the cargo according to the wishes of the owner of the cargo based on an agreement drawn up
2. Ship owners are ship owners who offer their ships to charterers or directly to cargo owners to meet the needs of commodity transportation
3. If the vessel is chartered, the vessel is operated under the terms and conditions in accordance with the contractual agreement by the chartering party
4. Ships operated by the owner himself, if the owner deals directly with the cargo owner
5. The broker is also involved in the charter process as a facilitator to bring the charterer and owner together

In a charter, the term Charter Party is known, which is a contract between the ship owner and the charterer regarding the use of the ship. The owner gives several privileges regarding the ownership of the ship to other parties or charterers with explicit requirements for a limited time. The Baltic and International Maritime Conference (BIMCO) in Copenhagen and the Chamber of Shipping in the United Kingdom (CSUK) in London are organizations in formulating charter parties and B/L (Bill of Loading) for all trades and shipments. Charter party

adopted by BIMCO when one or more groups representing the charterer are supported by other associations in the ship owner. Documents issued by ship owner organizations such as INTERTANKO are used in special trades agreed upon by a certain group of charterers. Charter parties are recommended when there is no proper group with whom the charterer discusses a particular charter format. For example, the GENCON form is issued as the recommended format, whereas BIMCO requires the printed text of the recommendations to be complied with charterer and ship owner, although there is no compulsion to use this format. The charter party used depends on the agreement. The charter party format, namely:

1. GENCON and BALTIME formats

   The GENCON format is used for single voyages and BALTIME for time chartering fixtures, which are products from BIMCO and CSUK which are used internationally

2. Format INTERTANKO (International Tanker Owner's Organization)

   Shipments that carry liquid cargo in bulk also have their own format. The most widely used charter party in tanker chartering is the voyage tanker party charter, known as the London format, which has set the pattern for a number of tanker charter party formats around the world. INTERTANKO in Oslo Norway plays an important supervisory role similar to BIMCO with regard to an adequate charter party format.

The party concerned has the right to change the sentence in the party charter. To add articles that are not contained in the standard format, additional articles can be made on separate sheets called "riders" into a single unit in the standard format. Standard party charters are drawn up according to specific fixtures, and

the provisions made must be studied, interpreted and assessed before and during negotiations. The legal sentences in the charter party require the intervention of lawyers who are experts in their fields to formulate the completeness of the articles made, and all parties can know the limitations. Chartering limitations include:

1. Subject stem, only used in shipper or supplier agreements to provide cargo at a certain port on a certain date. If the stem is not given as required, no other vessels may be used by the charterer before the ship originally appointed refuses to change the date and or quantity, or in other words, the replacement of the ship is permitted with the approval of the first ship owner, unless the ship owner refuses to change the date.
2. Subject open or subject unfixed, can only be used if the ship or cargo has been offered only once in a limited time. Subject open bids must be submitted within the same time limit. No time extension was given and no further negotiations until the time limit has expired
3. Another subject, must be clearly agreed upon as long as the charterer and the cargo owner agree

The scope of the sea chartering trade is known as various commodities loaded in several designs and types of ships according to the type and size of the existing cargo volume. There are four types of chartering, namely:

1. Time charter (T/C)

   Ships leased to other parties based on time, namely contract agreements that regulate the contract period agreed upon by the owner and charterer as well as the rights and obligations of each party. Contracts can be of short duration ranging from a month to long duration or tens of years, such as the

LPG/LNG fixture tanker contract. In terms of time charter, the charterer has a company representative on board, so the captain is obliged to comply with chartering orders and not chartering navigation orders. Although the charterer has no right to give navigational instructions, he requests the captain to understand and respond to his reasonable requests

On the other hand, the captain is obliged to act logically every time he receives charter orders, some of which require immediate execution, while others require negotiation before executing. Time charters are calculated on a daily basis for a period of every 15 or 30 days which is paid in advance, in the charter party format agreed between the charterer and the owner stating the number of working days per year is 65 days per year or 30 days calendar month, 360 working days per year. There are several time charter provisions, including:

a. Bunker, fresh water and superintendent cargo

   In the charter system, the charterer, apart from paying for the rental of the vessel, also pays for bunkers and fresh water during the charter period until the contract ends.

b. Time charter tests planned services

   When the owner does not have a ship among his entire fleet that is owned for use because all of his fleet is used in long-term contracts, so the owner can also charter ships to meet his needs

c. Speculative action time charter

   Time charter is a speculative action by the owner and charterer when freight rates are falling. Time charter is a profitable business for the owner compared to ships released on the spot market. On the other hand, for charterers,

time charters that pay "fixed" rents will be expensive, especially if the cargo owner asks for a reduction in freight rates due to a declining freight market.

2. Voyage or trip charters and consecutive voyage charters

   Voyage charter includes one trip (single trip) between two ports. The difference with a time charter is that the daily running costs, bunkers, lubricants are borne by the owner. The owner only allows the charterer to raise and lower his cargo for one voyage.

   Voyage trip charter payments are based on total deadweight (TDW) or cargo capacity. Lump sum payments can also be applied, if the cargo transported is less than the cargo capacity of the ship or based on the ton/m3 rate.

3. Bareboat charters

   In this type of charter, the owner leases his ship for a long period of time (3 years or more) to another party who will be responsible for manning and maintenance costs during the contract. The owner is compensated with rent money to convert finance costs and capital costs (loan installments), interest expenses plus return on equity capital, insurance premiums, in addition to dealing with cargo and crew along with the expected profit.

4. Contract of affreightment (COA)

   Contract of affreightment is a type of contract that is usually used for dry or liquid cargo in bulk that operates regularly and repeatedly with the same volume and commodity. Depending on the volume of the cargo and the duration of the round trip, the contract can have a long term duration of 1 – 5 years or even more. The charterer must have knowledge of

the required commodity export volume capacity, commodity consumption and storage warehouse capacity at the port of origin and port of destination. COA is usually used for export or import transportation of government-owned strategic goods for the benefit of the public, such as rice, grains, wheat, corn, and another. Ships can be built under COA contract guarantees because these ships have long-term freight contracts with permanent cargo owners. Freight payments are considered earnings after the cargo is onboard the ship and can be immediately disbursed by submitting a bill of lading to the L/C receiving bank for export cargo transactions. For owners, COA is a privilege that is highly preferred because it is the same as a consecutive voyage fixture in the medium and long term, providing guaranteed sources of income as well as profits. Companies that carry out COA fixture contracts can guarantee COA contracts to build new ships because the credit rating position is in the bankable category, COA is acceptable security for investors or banks. Freight payments are considered earnings after the cargo is onboard the ship and can be immediately disbursed by submitting a bill of lading to the L/C receiving bank for export cargo transactions. COA is a highly preferred feature because it is the same as a consecutive voyage fixture in the medium and long term, providing guaranteed sources of income as well as profits.

Ship Speed in Time-Charter

In the Time-Charter, the main things to consider are the ship's speed and fuel consumption. All final decisions will refer to the Time-Charterparty made between the ship and the charterer. Claims submitted by the charterer to the ship at the end of the contract include several things, namely:

1. Ship speed
2. Fuel consumption
3. Constraints in operation
4. Ship performance report

Claims that the ship is unable to maintain the speed according to the contract are usually the result of using too much fuel. Time Charterparty explained that the ship is capable of sailing with full and down loads and at an economical speed according to the agreement made. The speed in question is usually on the Beaufort 4 scale, and the weather is good. During sailing the ship uses economic speed, and a record must be made if there is a change of course if necessary avoid crowded cruises, cruises that do not use economical speed, stop time, engine failure time, sailing against the current, and others. The increase in speed will increase fuel consumption, which can be calculated by calculating the ship's fuel consumption to the cube of its speed.

For example, a ship with an economic speed of 12 knots uses 40 tons/day of fuel. If the ship has to increase its speed to 15 knots, the fuel consumption is calculated as follows:

123 : 153= 40 : X

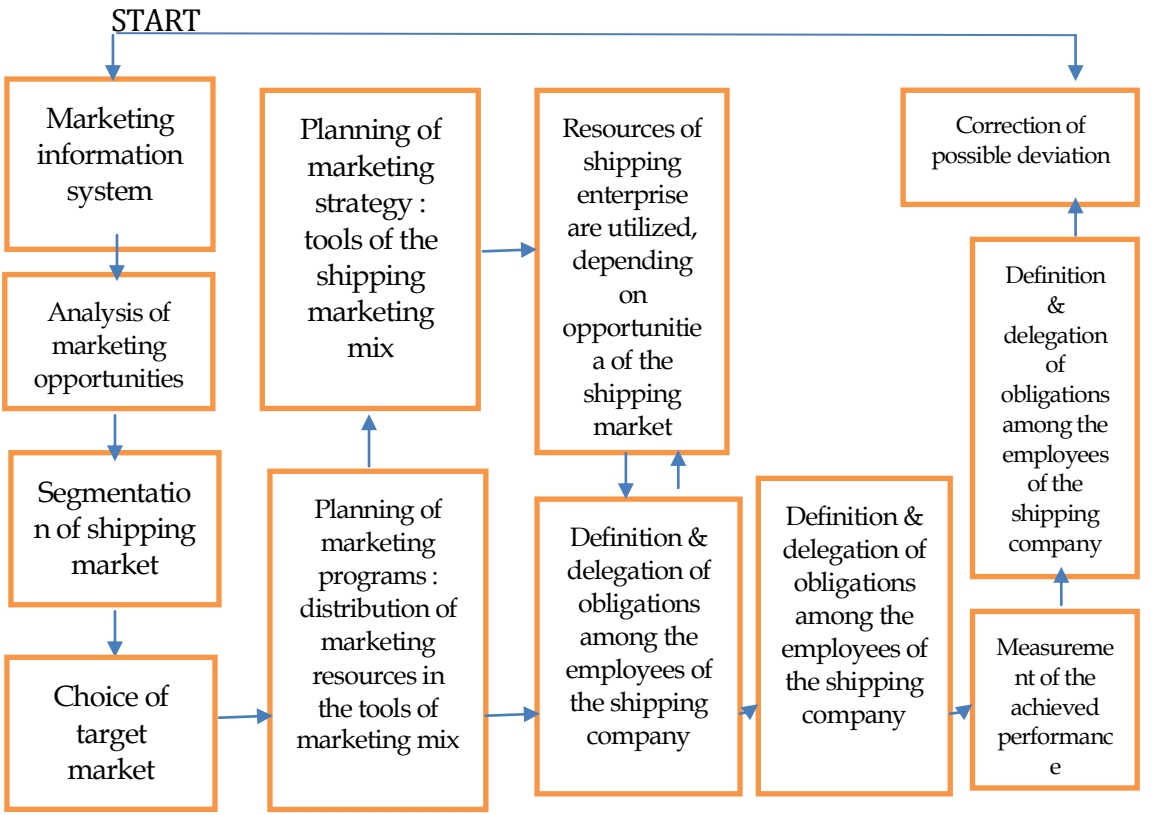
$X = \frac{3375 \times 40}{1728} = 78{,}125$ tons

Recording of fuel consumption is important for the use of main engines, boilers and auxiliary engines. And every charterer's request to increase speed will be related to fuel consumption. The marketing of shipping companies engaged in commercial shipping is the science of Business to Business Marketing (B2B marketing) which relates to meeting the needs of

charterers-shippers for the transportation of goods by sea, with the main goal of profit for the company.

The right strategy of the shipping market to better understand and estimate the transportation needs of the client (Charterer-shipper) and on the other hand, the right organization, planning and control of shipping company facilities. The more shipping companies try to find out what their clients need in order to tailor charter policies to their needs, by offering suitable transportation services, through the process of negotiating freight as a function of what it offers, and to communicate effectively with its market and targets, the more likely it is to achieve the most appropriate, efficient and durable commercial ship operations (Plomaritou, 2006a).

The stages of implementing marketing in shipping companies are planning, organizing, implementing and controlling marketing efforts



Marketing is not only concerned with developing and implementing successful programs and strategies. For marketing to be successful, there needs to be a company-wide marketing orientation, which develops the marketing concept and denotes the marketing approach to all internal and external activities (Woodruffe 1995).

The term customer-oriented company is often used to describe how knowledgeable a company is about client needs and how responsive the company in terms of sustainable value creation and delivery (Berger et al, 2002; Gummesson, 2002). Shipping marketing can be explained

through practical aspects in marketing programs such as shipping market analysis and segmentation, strategic planning, promotion and production of transportation services. The inseparable nature of shipping services regarding the importance of the roles played by service providers (shipping companies) and customers (charterers or shippers) often far outweighs the marketing of physical goods

Every interaction between the shipping company and the charterer can affect the quality of the transportation service and the benefits provided. According to Solomon, Suprenant, Cziepiel & Gatman (1985), there are different types of interactions that make up a service encounter. In the shipping business, the main types of interactions are: (Giziakis et al., 2006)

1. Direct interaction between the service provider, such as a staff member or crew of the shipping company and the charterer (or shipper)
2. Interaction between the charterer and the ship owner's broker
3. Interaction between ship owners and chartering brokers
4. Interaction between chartering brokers & ship owner brokers
5. Interaction between lessee or shipper and service facilities, such as formulation of bill of loading by electronic means (eg EDI system)
6. Interaction between tenants and other tenants

There are two ways to look at the function and role of marketing, one way is by defining the tasks involved in the marketing process and by examining marketing objectives. Duties in shipping marketing include: (Plomaritou, 2006c)

1. Review of the economic and business climate
2. Analysis of the situation of shipping companies

3. Comparison of shipping companies with their competitors
4. Market segmentation, targeting and positioning
5. Design appropriate shipping marketing mix
6. Develop a strategic marketing plan
7. Implementation of strategic marketing plans
8. Measurement of the performance achieved and comparison with the exemplary performance of the marketing plan

Objectives of shipping marketing (Plomaritou, 2006b):

1. To understand the transportation needs of lessees or shippers
2. To provide the benefits of satisfaction to meet the transportation needs of lessees or shippers
3. To ensure consistent quality of services offered
4. To retain existing customers (charterers or shippers)
5. To attract new customers (charterers or shippers)
6. To achieve the goals of the shipping company

According to Vargo & Roger (2004), when companies take a customer perspective, they realize that customers are active partners in the marketing process and view customers as operand resources, hence they work together to create shared value. Shipping companies must understand the buying behavior of charterers. The shipping business trend is moving towards the concept of economies of scale in operations, developing network-based management and adopting technology to increase efficiency and effectiveness. A necessary prerequisite for effective shipping marketing is an understanding of the different needs that charterers have within different segments of the shipping market. For example charterers' decisions in the tanker market are more safety- oriented, shippers' decisions in the fixed-route ship market are quality-oriented and charterers'

decisions in the bulk carrier market are more cost-oriented (Plomaritou, 2006e). The shipping company must understand the behavior of the charterer in every stage of the decision-making process and the influences that exist in the process.

To market ocean freight services effectively, shipping companies need to understand the thought processes used by charterers and shippers during their decision-making process. The basic steps of the charterer and shipper decision process are:

1. Pre-purchase choice among alternatives during the pre-equipment stage.

   This stage refers to all chartering and freight forwarding activities that occur prior to chartering equipment and goods acquisition and transportation services.

   This stage begins when the contract of sale and purchase of goods is signed and the cargo must be transported from the port of origin to the port of destination. During this stage, charterers and shippers acting on behalf of the cargo owners, examine their transportation needs and gather information regarding possible alternative vessels.

   Charterers and shippers search for a suitable vessel that will carry out the cargo transportation. Charterers have a list of options that are selected based on experience, convenience and knowledge. In addition, shippers in the liner market show interest in a particular vessel by seeking suitable liner services in shipping and by booking space on the vessel. The pre-purchase stage includes awareness of transportation needs, information search and evaluation of alternatives. An important outcome of

the pre-purchase stage is the shipper's decision to reserve space on a particular ship.

2. The reaction of charterers and shippers during the transportation of cargo

   Charterers and shippers have expectations about the performance of the chartered vessel. The ship must carry out the voyage as well as possible and must deliver the cargo safely at the unloading port. The charterer and sender have obligations during the charter depending on the type of charter. For example, a charterer carries out commercial work on the ship in terms of time leasing, while a charterer carries out commercial operations of the ship in terms of bareboat charter

   This stage is characterized by prolonged interactions between charterers or shippers, ship owners, personnel and crew. It is from this interpersonal interaction that the experience of transportation services is obtained

3. Evaluation of post-purchase satisfaction during the post-equipment stage and after delivery of the cargo to the consignee.

   During this stage, the charterer and the shipper may experience varying degrees of doubt that the correct equipment from the charterer has been made. Due to the extended service delivery process. Post-evaluation of choices occurs, both during and after service use rather than just afterwards (Jones, 2000)

The buying behavior of charterer and shippers is complex because they go through a decision-making process which consists of:

1. Recognition of the need for freight transport
2. Information search through cargo orders
3. Evaluation of alternative ship works

4. Negotiation decisions
5. Pre and post-equipment chartering behavior

Charterers and shippers experience 3 types of risk during the pre-equipment and post-equipment stages, namely:

1. Financial risk

   Financial risk assumes that financial losses can occur if the performance of the ship is poor. Loss or damage in transit is an insurable risk, but creates many difficulties for the shipper, who may be willing to pay more for the safe transport of his product without risk of damage.

2. Social/psychological risks

   This risk is related to the idea that there may be a loss of social status of the charterer or shipper which is mostly related to the transport of oil or dangerous goods by sea, for example cases of oil contamination.

3. Shipping risk is the risk that the investment in commercial ship hull, including the return on capital used, cannot be recovered during the ownership period. When the risk is taken by the cargo owner, it leads to an "industrial shipping" business where the ship owner is the subcontractor and cost minimizer. When the "risk of delivery" is left to the ship owner, business becomes highly speculative.

Considering several perspectives on behavior (Bienstock et al 2003; Hawkins et al, 1998; Smallman, 1996; Sheth, 1996; Draper, 1994) as a way of understanding what motivates the purchase behavior of tenants and shippers:

1. The first perspective on the behavior and motivation of the tenant or sender is the Hard Core

   Behavioral and motivational perspective, which is based on learning theories such as operant and classical conditioning. These theories may suggest that charterers and shippers should learn from their own experiences to avoid these types of risks. This means that charterers and shippers have to experience the entire purchasing procedure rather than just observing other charterers and shippers experiencing the type of risk involved.

2. The second perspective is the social learning perspective, which differs from the first perspective in enabling vicarious learning. This means enabling learning to be gained by observing others experience good or bad consequences for their behavior. Following this perspective, charterers and shippers observe and imitate models (other charterers and shippers), who are more likely to be imitated than others (Raoust, 2003).

Mixed marketing tools for shipping companies, active in both the tramper and liner shipping market are product (random or fixed shipping services), price (carriage or charter), process of charter negotiation & execution procedures), people (office employees & crew), place (ports & geographic areas where ship employees work), promotions (advertising programs), physical evidence (ship characteristics & shipworthiness) and paperless (digital) trade (plomaritou, 2008b). When combined effectively, the marketing mix can offset the effects of uncontrollable factors that exist in each shipping company's environment such as technological advances, new and existing competitors, government regulations,

economic conditions and seasonal effects that continually change the environment in which the shipping company operates.

There are 7 categories of criteria that play a decisive role in the process of selecting ship owners by charterers in the tanker market, namely (Plomariou, 2006a; OCIMF, 2005; Bishop, 2004; Graeme et al., 2003; Moore, 2000)

1. Compliance of shipping companies with international safety management regulations
   a. Well designed and built tanker
   b. Well maintained tankers
   c. Crew training and competency
   d. Employee training and competency
2. Reputation and image of the ship owner in the shipping market
   a. Experienced loss and damage in the past from shipping companies
   b. Ship owner's reputation for reliability
3. Low-cost ocean freight operations
   a. Transportation solutions that reduce costs and maximize results
4. Appropriate charter negotiation process
   a. Compliance with charter negotiation rules
   b. Provision of accurate and reliable information regarding ships c. Cooperation and response to the needs of tenants
5. High quality transportation service provider
   a. Trading and schedule flexibility
   b. Proper cruise planning
   c. Execution of fast shipping
   d. Precise loading and unloading operations without downtime
   e. Reduction of turnaround time to a minimum
   f. Safe cargo transportation to the destination
6. Maintenance of good relations with tenants

a. The relationship between the ship's crew and charterers, which is maintained well
b. The relationship between the company and tenants is well established

7. Information system for clients and charterers
   a. Updated tenant information system
   b. Informative system of advertising programs

The Tanker Management and Self Assessment (TMSA) guide issued in 2004 by the international maritime forum of oil companies provides a means for tanker operators to assess safety management systems against a number of key performance indicators (KPIs), by listing 12 categories, or elements that drive operators to rate themselves on a scale of 1-4 (4 being the best sign) and use the results to improve management and operational standards

The elements included in it are (Hess, 2004)

1. Management, leadership & accountability
2. Recruitment and management of shore and ship personnel
3. Cargo balancing and mooring operations
4. Change management
5. Investigation and analysis of incidents
6. Emergency preparedness and contingency planning

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CHAPTER VII
NAVIGATION

By Anna Anganita Theresia Latumeten

7.1 Navigation: a Definition

A dictionary definition of navigation is a process or an activity done accurately to ascertain a position, including to plan and follow a route. In marine, the navigation process includes "planning, managing and directing a vessel's voyage". (AMSA, 2020) All of these processes are done with a complete precision. AMSA (2020) also adds that in its practice, marine navigation always involves: 1.) good seamanship, 2.) professional knowledge and judgement about navigation, and 3.) the application of science and technology.

As previously mentioned, accuracy is important in the navigation process. In trying to communicate as a part of the navigation process, to be able to speak in the utmost accuracy is very crucial. Mistakes and error in the use of language to navigate may result in serious problems. Therefore, the user of English in Maritime should know well the importance of using the correct English in the navigation process. This statement is also strengthened by Vidhiasi and Syihabuddin (2022, p. 72), who mentions that "sea transport is considered one of the most vital and dangerous sectors of the world economy; therefore, the safety of seafarers, cargo and ships is a top priority for the shipping industry. Seafarers are expected to go through a Maritime English learning phase." This chapter should provide readers with some useful English vocabularies for navigation, some useful English grammar for navigation and the explanation on the basic task in navigation. They are to be presented separately in the following sub-chapters, so that the users of English in Maritime hopefully are able to make

use of the explanations to perform Marine navigation properly and correctly.

7.2 Useful Vocabulary for Navigation

This section deals with some vocabularies essential to the theme navigation for English in Maritime. The vocabularies are followed with their definition in English.

1. Latitude
   Latitude is one of the words used to describe the position of your vessel. It refers to one of the grid patterns on the earth. Degrees, also minutes and decimals of a minute of the North and South of the equator is used to describe latitude.
2. Longitude
   Longitude is the other words used to describe the position of your vessel. It is also described in degrees. Longitude refers to either the East or West of Greenwich. To see the difference of "latitude" and "longitude", see the following image.

Image 7.1 Latitude and Longitude
(Sumber: keydifferences.com)

3. True North
   True North refers to the position of the North Pole geographically. It is true according to the Earth's axis, and it

is different with the magnetic North Pole. The magnetic North Pole, unlike the True North shifts yearly.

4. Knots
   Knots refer to the unit of measurement of speed used by boats and aircraft.
5. Nautical Mile
   One minute of latitude equals to one nautical mile, it is based on the Earth's circumference. Roughly measured in land-measured miles, one nautical mile equals to 1.1508 statute miles.
6. Magnetic Compass
   Magnetic compass is one of the tools used by seafarers to point to the magnetic north. This tool does not require electricity to operate properly. The following picture shows how a magnetic compass look like.

Image 7.2 Magnetic Compass
(Sumber: safety4sea.com)

7. Dividers
   Dividers are tools to used in measuring distance. It is used on a nautical chart. Seafarers use dividers by separating two points on a naurical chart, these points represent one or many nautical miles.

Image 7.3 Dividers
(Sumber: stanleylondon.com)

8. GPS (Global Positioning System)
   Devices with GPS receive signals of positions from satellites, it also helps to plot your course and determine your speed. GPS can be completed with chart plotters and/or depth alarms.
9. Buoys
   Buoys serve as markers for any watercraft. Below are an image for buoys.

Image 7.4 Buoys
(Sumber: vanislemarina.com)

10. Paper Charts

    A paper chart is reliably used for charting. Seafarers use paper charts to plot their courses from point A to point B. A paper chart helps to determine the depth of water, it also provides information about any charted obstructions, information about the currents and tides, also information on the navigation aids. The following image shows one example of a paper chart used in maritime navigation.

Image 7.5 Paper Chart
(Sumber: vanislemarina.com)

11. Radar with ARPA

    ARPA stands for Automatic Radar Plotting Aid. It is generally one of the equipments installed on the bridge of a vessel. This equipment is "an automatic collision warning installation, with a rotating transmitting or receiving antenna, working in the X-band, 3 cm wavelength." (Keimeno & Naytikoy, 2015, p. 182)

7.3 Useful Grammar for Navigation

This section deals with some grammatical items in English that might be used with the theme of navigation for English in Maritime. These grammatical items are to be followed with examples. Knowing the right prepositions of phrase is crucial, since navigation deals with directions to move from one place to another. These items are adapted from Blakey's *English for Maritime Studies.* (1987, p. 112)

1. Using "to" and "from" with a reference of a point. To is used with a destination, and from is used with a starting point. For example:
   The ship is sailing to Spain.
   The ferry has sailed from Balikpapan.
2. Using "onto" and "off" with a reference of a line or a surface, for example:
   The dividers have fallen onto the deck.
   The launch took off the pilot. (Blakey, 1987, p. 112)

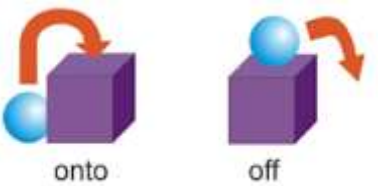

Image 7.6 Onto and Off
(Sumber: learnenglishwithkapil.com)

3. Using "into" and "out of"with a reference of an area, for example:
   The cargo is being loaded into the ship.
   The cargo is being lifted out of the ship.

Image 7.7 Into and Out of
(Sumber: learnenglishwithkapil.com)

4. Using “towards” and “away from” to express motion to a directional path, for example:
   Ship A is sailing towards Ship B.
   Ship B is sailing away from Ship C.

Image 7.9 Towards and Away from
(Sumber: learnenglishwithkapil.com)

5. Using “up” and “down” to express motion in a vertical axis, for example:
   The flag is being raised up.
   The flag is being hauled down.

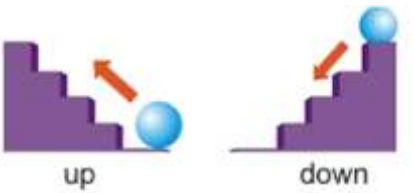

Image 7.10 Up and Down
(Sumber: learnenglishwithkapil.com)

6. Using “across” and “along” to express motion in a horizontal axis, for example:
   The dinghy is sailing across the bay.
   The boats are sailing along the North coast.

Image 7.11 Across and Along
(Sumber: learnenglishwithkapil.com)

7. Using “over” and “under”, for example:
   People are walking over the bridge.
   The dinghy is moving under the bridge.

Image 7.12 Across and Along
(Sumber: Blakey, 1987)

8. Using “behind” and “in front of”, for example:
   The seagulls are flying behind the lighthouse.
   The seagulls are flying in front of the lighthouse.

Image 7.13 Behind and In front of
(Sumber: Blakey, 1987)

9. Using “around” and “through”, for example:
   The school of fish is swimming around the boat.
   The diver is swimming through the shoal

Image 7.13 Around and Through
(Sumber: Blakey, 1987)

10. Using “by” or “past”, for example:
    The ship is sailing by/past the buoy.

Image 7.14 By/Past
(Sumber: learnenglishwithkapil.com)

7.4 Basic Task in Navigation

After discovering what words to use and how to correctly use it with proper grammatical item, users of English in Maritime can hopefully use the vocabulary and grammar to perform basic tasks in navigation. The basic tasks should include 1.) to figure out where your position is, 2.) to explain where you want to go, and 3.) to follow a course to get you to your destination. (Discover Boating, n.d.)

To figure out where your position is, be sure to refer to your navigational tools. Seafarers can refer to the exact position using the latitude or the langitude. Also, you can refer to your charts, look around and locate with the right preposition of place.

To navigate where you want to go, make sure to also use explain properly. Consider the nautical miles, keep in mind to use the navigation tools to set the possible distance between the two places.

Finally, as you set your destination, follow your course. Pay attention to the landmarks as you move, use the right prepositions of place with their suitable references. By making sure to know what the basic task in navigation and how express your course using the right vocabularies and grammatical items, the users of English in Maritime should be able to perform a navigation task with a complete precision.

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CHAPTER VIII
MARINE COMMUNICATION

By Heni Dwi Iryanti

8.1 Introduction

Today, we live in a world where a Japanese-built ship can carry cargo to the USA, with an Indonesian owner, sailing under a Marshall Islands flag, perhaps managed from Singapore and chartered by a company in Korea, with a Chinese port call along the way. The crew can be multinational, at least from 6 to 8 different nationalities. Maritime is the most global type of business and in such an international context, communication is the key to success.

Being able to communicate effectively is mandatory for people working in the maritime industry under the IMO STCW Convention, ISM Code, SOLAS and other international standards. Both shore-based employees and those working in seafarer jobs must speak a common language to rule out any possibility of confusion in meanings which may lead to maritime accidents. For that reason, a standardized and specialized form of marine communication is needed to deal with personal and occupational purposes while aboard ship and ashore.

As the official language of the maritime industry, English has specific characteristics and standards for effective communication. The specialized English needed to work in maritime is commonly referred to as Maritime English. The International Maritime Organization (IMO) has created a model course for English (Model Course 3.17 – Maritime English) which incorporates the Standard Marine Communication Phrases (SMCP) as the international standard for all maritime communication.

8.2 Maritime English

8.2.1 The Overview of Maritime English

According to Tenkner (2000), Maritime English is defined as "the entirety of all those means of the English language which, being used as a device for communication within the international maritime community, contribute to the safety of navigation and the facilitation of the seaborne trade." More specifically, Pritchard and Kalogjera (2000: 185) defines Maritime English for Very High Frequency (VHF) communication purposes (or English for maritime communications) as a specific, narrow-scope realization of Maritime English, a highly restricted sub-variety of Maritime English characterized by a limited vocabulary and simple grammatical structure to meet the specific requirements of interpersonal communication and interaction.

The effective use of Maritime English is a key factor to promote clarity and safety because communication problems may cause misunderstandings leading to dangers to the ship, the people on board and also the environment. As stated by IMO (2001), navigational and safety communications from ship to shore and vice versa, from ship to ship, and on board ship must be precise, simple and unambiguous so as to avoid confusion and error. In this context, clear communication is very important whether it is between an officer and a rating, between fellow crew members, between the ship and those ashore, and even between two ships.

For the safe operation of a ship, Bocanegra-Valle (2011) classifies communications in English into three levels:

1. Verbal internal communication
   It is necessary that deck officers display a good knowledge of English when in the bridge to navigate the ship safely. Communication in English is also necessary to carry out maintenance tasks and everyday operations. Crews aboard passenger ships will need to communicate with passengers on a variety of issues. In the case of multilingual crews, good

communication skills in English will contribute to enhance social life and, hence, working conditions.

2. Verbal external communication
   Depending on the situation, the crew will be required to communicate with other vessels in the vicinity, with vessel traffic services, pilots, tug skippers, and helicopters in case of search and rescue operations, as well as with shore personnel (customs, shore authority, harbor master's office, ship's agent, charterers' representatives, etc.)
3. Written language
   Officers and crew engaged on international voyages must be competent in understanding the written English language signposted throughout the ship (mustering stations, cargo spaces, etc.) and that contained in reports, manuals, certificates, logbooks, briefings, checklists, declarations, agreements, and other applicable instruments. In fact, when the ship's language is not English, all records need to be accompanied by an English language translation.

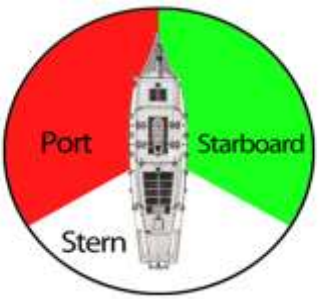
8.2.2 The Characteristics of Maritime English

To identify the characteristics of Maritime English, look at the following phrases taken from Papaleonida (2015: 16). Try to guess their meaning by matching them to their General English equivalent below. How are they different from General English?

The officer onboard says:	
a.	My ETA is 15:00 UTC.
b.	M/T Trader: Tango Romeo Alfa Delta Echo Romeo
c.	Request: I require medical assistance.
d.	I have a list to port.
i.	I am leaning to the left side.
ii.	Tanker ship Trader: T-R-A-D-E-R
iii.	I will arrive at 3 pm.
iv.	I need the doctor's help.

It can be seen from the above example that the language used in maritime is precise and far more limited than everyday language. In contrast to General English, the linguistic limitation (respectively adjustedness) in Maritime English, according to Pejaković (2015) is the key presumption for effective communication between ship-to-ship and ship-to-shore.

Another example is the use of nautical terms 'port' and 'starboard', instead of left and right side on ships as illustrated in Picture 8.1. According to the International Register of Shipping (2019), ships in the past used to have rudders on their center line and they were controlled using a steering oar. As most of the sailors were right handed, the steering oar was located over or through the right side of the stern. For this reason, most of the seafarers call the right side as the 'steering side', which later is known as 'starboard'. Meanwhile, the left side is called 'port' because ships with steerboards or star boards would dock at ports on the opposite side of the steerboard or star. The terms 'port' and 'starboard' are used because they are unambiguous references that are independent of a mariner's orientation.



Picture 8.1
(Source: International Register of Shipping, 2019)

In reference to the characteristics of Maritime English, Franceschi (2014) identifies a number of linguistic features of both written and spoken Maritime English (ME) as follows:

1. In written ME, semi-technical words and phrases related to the nautical field in general (e.g., used to describe the different parts

of ships, the movements on board a vessel, etc.) mix with more specialized, domain-specific terminology relevant to the various areas of study.
2. The temporal-aspectual contour of written ME is instead richer.
3. Written ME exhibits more structural complexity than spoken ME. This is particularly true for maritime law texts, which due to sentence length and syntax may come across as ambiguous.
4. Spoken ME presents some cross-domain lexical differences but since it is primarily concerned with matters of safety and security the range of lexical choices is narrower.
5. Spoken ME strives for simplicity and transparency at all levels. However, syntactic reduction sometimes produces what now appear as odd or antiquated uses. Oral messages are primarily centered on the "here and now" of speech time, with frequent uses of the imperative construction and of performative utterances.
6. Both written and spoken ME often make use of formal and archaic expressions, frequently based on Latin, adding a general tone of officiality and authoritativeness to discourse.

8.2.3 The IMO Model Course 3.17 for Maritime English

To assist training providers and their teaching staff in organizing Maritime English training courses, IMO (2000) developed Model Course 3.17 where the quality and effectiveness of the training courses may thereby be improved. The course incorporates the Standard Marine Communication Phrases (SMCP) and the details of an English course to fulfill different roles on board, including:

1. using various lights and signals
2. reading and interpreting weather charts and maps
3. maintaining equipment and machinery
4. applying maritime law concerning staff (STCW) and pollution (MARPOL)
5. providing first aid
6. keeping watch

The Model Course 3.17 consists of two sections both of which contain a separate syllabus as explained below:

1. *Core Section 1*

   The syllabus in Core Section 1 is designed for trainees who have an elementary or lower intermediate level of English. It includes a 21-unit course plus 3 review lessons to cover a total of 374 classroom hours plus 96 self-study practice hours. Core Section 1 is intended to prepare trainees for entry to Core Section 2. However, it is possible for trainees to enter directly to Core Section 2 without following Core Section 1, provided that they can satisfy the entry requirements.

   The objectives of Core Section 1 of the IMO English model course are to:

   1) develop trainees' ability to use English to lower intermediate language level
   2) to teach basic maritime English, as recommended in the English language guidelines of Part B-VI/1 of the STCW 1995 Code
   3) improve trainees' competence in English to the level required to progress to Core
   4) Section 2 of this model course
   5) prepare trainees for developing the full knowledge, understanding and proficiency in English required by the STCW 1995 Code
   6) give students wide-ranging opportunities to practice communicating in English for both maritime and general purposes at elementary to lower intermediate language level
   7) provide instructors with a suggested framework for introducing selected topics from the Standard Marine Communication Phrases, as required by the STCW 1995 Code

2. *Core Section 2*

   The syllabus in Core Section 2 is designed for trainees who have a lower intermediate or intermediate level of English. It

includes a 15-unit course plus 3 review lessons to cover a total of 370 classroom hours plus 90 self-study practice hours.

The objectives of Core Section 2 of the IMO English model course are to:

1) develop trainees' ability to use English to at least intermediate language level
2) ensure that trainees possess the knowledge, understanding and proficiency in English
3) set out in the STCW 1995 Code
4) provide instructors with a suggested framework for introducing selected topics from
5) the Standard Marine Communication Phrases, as required by STCW 19952
6) give students wide-ranging opportunities to practice communicating in English for both
7) maritime and general purposes
8) promote the study skills essential for continuing independent learning at sea.

The following is a sample unit of Course Outline for Core Section 1 and Core Section 2, including the competences and areas of knowledge, understanding and proficiency, together with the estimated total hours required for classroom teaching and self-study work.

Table 8.1 Course Outline for Core Section 1 (sample unit)

MARITIME ENGLISH

Part B: Course Outline

Core Section 1: Elementary level English for all functions and levels

Competence: **Use English in written and oral form**

Course Outline	Approximate time (Hours)

Knowledge, understanding and proficiency	Classroom hours	Self-study practice hours
1 **Ask for and give personal data** 1.1 Grammar: revise Present Simple; pronouns 1.2 Vocabulary: adjectives of nationality 1.3 Phonology: question intonation 1.4 Communication Skills: listening, speaking, writing	12	4
2 **Describe crew roles and routines** 2.1 Grammar: Present Simple (question and negative form; third person singular); prepositions of time 2.2 Vocabulary: basic verbs; numerical information; alphabet 2.3 Phonology: word stress 2.4 Communication Skills: listening, speaking, reading, writing	15	4
3 **Name types of vessels; describe parts of a vessel** 3.1 Grammar: *there is/are*; articles; prepositions of place; possessives 3.2 Vocabulary: types of vessels; parts of a vessel 3.3 Phonology: word stress 3.4 Communication Skills: listening, speaking, reading, writing	14	4
4 **Describe the location and purpose of safety equipment** 4.1 Grammar: prepositions of place 4.2 Vocabulary: safety equipment 4.3 Phonology: word stress 4.4 Communication Skills: listening, speaking, writing	10	4

Source: IMO (2000)

Table 8.2 Course Outline for Core Section 2 (sample unit)

MARITIME ENGLISH

Part B: Course Outline

Core Section 2: Intermediate level English for all functions and levels

Competence: Use English in written and oral form

Course Outline — Approximate time (Hours)

Knowledge, understanding and proficiency		Classroom hours	Self-study practice hours
1	Demonstrate an understanding of the relevance of STCW95 English requirements to all seafarers; indicate awareness of and preference for language learning techniques; assess own language learning needs 1.1 Grammar: Present Simple and Continuous; adverbs of frequency 1.2 Vocabulary: stative verbs; phrases for giving opinions, agreeing and disagreeing; terminology describing competences from STCW 95 1.3 Phonology: word stress 1.4 Communication Skills: listening, speaking, reading, writing 1.5 Maritime Focus: STCW95 competences; maritime education and English	17	5
2	Discuss and confirm travel arrangements for joining ship; make and confirm accommodation reservations; describe berthing and unberthing procedures; describes stages in preparing for sea and for arrival in port 2.1 Grammar: Present Continuous; *going to* and *will* 2.2 Vocabulary: phrases for greeting and introducing people nouns connected with planning 2.3 Phonology: word stress; contractions in connected speech 2.4 Communication Skills: listening, speaking, reading, writing 2.5 Maritime Focus: pilotage; SMCP for pilotage; berthing and unberthing; types of rope; anchoring gear; names of mooring lines	20	5

Source: IMO (2000)

8.3 Standard Marine Communication Phrases (SMCP)

8.3.1 The Overview of SMCP

According to IMO (2001), Standard Marine Communication Phrases (SMCP) were adopted by the 22nd Assembly in November 2001 as resolution A.918 (22) IMO Standard Marine Communication Phrases for all prospective users and all maritime education authorities. The SMCP replaced the Standard Marine Navigational Vocabulary (SMNV) adopted by IMO in 1977 (and amended in 1985) as a more comprehensive standardized safety language, taking into account changing conditions in modern seafaring and covering all major safety-related verbal communication. Under the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, the ability to understand and use SMCP is required for the certification of officers in charge of a navigational watch on ships of 500 gross tonnage or above.

SMCP builds on the basic knowledge of English and has been intentionally drafted in a simplified version of Maritime English. It includes unique phrases and terms to cover the most important safety-related fields of verbal ship to ship, ship to shore (and vice-versa) and on board communications. As navigational and safety communication, SMCP includes phrases to be used in routine situations such as providing meteorological information or arrival, berthing and departure, as well as standard phrases and responses to be used in emergency situations, such as requesting tug assistance, reporting an oil spill or collision or handling dangerous goods (Bocanegra-Valle, 2010).

8.3.2 The Structure of SMCP

The SMCP is divided into External Communication Phrases and On-board Communication Phrases and into Part A and Part B (IMO, 2001) as outlined below:

1. Part A covers phrases applicable in external communications, and may be regarded as the replacement of SMNV, which is required to be used and understood under the STCW Code, Table A-II/I. This part is enriched by essential phrases concerning ship handling and safety of navigation to be used in on-board communications, particularly when the Pilot is on the bridge.
2. Part B calls attention to other on-board standard safety-related phrases which, supplementary to Part A may also be regarded as useful for maritime English instruction.

8.3.3 Communicative Features of SMCP

As a simplified version of Maritime English, SMCP has been intentionally drafted to reduce grammatical, lexical and idiomatic varieties to a tolerable minimum, using standardized structures for the sake of its function aspects (IMO, 2001). For example, reflecting present maritime English language usage on board vessels and in ship-to-shore or ship-to-ship communications to reduce misunderstanding in safety-related verbal communications. It means that in phrases offered for use in emergency and other situations developing under considerable pressure of time or psychological stress, as well as in navigational warnings, a block language is applied which uses sparingly or omits the function words the, a/an, is/are, as done in seafaring practice. Users, however, may be flexible in this respect.

Further communicative features of Maritime English are summarized as follows:

1. avoiding synonyms
2. avoiding contracted forms
3. providing fully worded answers to "yes/no" questions and basic alternative answers to sentence questions
4. providing one phrase for one event, and

5. structuring the corresponding phrases according to the principle: identical invariable plus variable.

8.3.4 Examples of SMCP

The following table contains examples of phrases for Application of Message Markers as extracted from IMO's SMCP.

Table 8.3 Examples of SMCP phrases

A1/6
Vessel Traffic Service (VTS) Standard Phrases
Application of Message Markers
In order to especially facilitate shore-to-ship and ship-to-shore communication or when one of the IMO Standard Marine Communication Phrases will not fit the meaning desired, one of the following eight message markers may be used to increase the probability of the purpose of the message being properly understood. It is at the discretion of the shore personnel or the ship's officer whether to use one of the message markers and if so which of them to apply depending on the user's qualified assessment of the situation. If used, the message marker is to be spoken preceding the message or the corresponding part of the message. The IMO VTS Guidelines recommend that in any message directed to a vessel it should be clear whether the message contains information, advice, warning, or instruction and IMO SMCP should be used where practicable.
Message Markers
(i) INSTRUCTION This indicates that the following message implies the intention of the sender to influence others by a Regulation. Comment: This means that the sender, e.g. a VTS Station or a naval vessel, must have full authority to send such a message. The recipient has to follow this legally binding

message unless he/she has contradictory safety reasons which then have to be reported to the sender.
Example: "INSTRUCTION. Do not cross the fairway."

(ii) ADVICE
This indicates that the following message implies the intention of the sender to influence others by a Recommendation.
Comment: The decision whether to follow the ADVICE still stays with the recipient. ADVICE does not necessarily have to be followed but should be considered very carefully.
Example: "ADVICE. (Advise you) stand by on VHF Channel six nine."

(iii) WARNING
This indicates that the following message implies the intention of the sender to inform others about danger.
Comment: This means that any recipient of a WARNING should pay immediate attention to the danger mentioned. Consequences of a WARNING will be up to the recipient.
Example: "WARNING. Obstruction in the fairway."

(iv) INFORMATION
This indicates that the following message is restricted to observed facts, situations, etc.

Comment: This marker is preferably used for navigational and traffic information, etc. Consequences of INFORMATION will be up to the recipient.
Example: "INFORMATION. MV Noname will overtake to the west of you."

(v) QUESTION
This indicates that the following message is of an interrogative character.

Comment: The use of this marker removes any doubt as to whether a question is being asked or a statement is being made, especially when interrogatives such as what, where, why, who, how are additionally used at the beginning of the question. The recipient is expected to return an answer. *Example: "QUESTION.(What is) your present maximum draft?"*
(vi) ANSWER This indicates that the following message is the reply to a previous question. Comment: Note that an answer should not contain another question. *Example: "ANSWER. My present maximum draft is zero seven metres."*
(vii) REQUEST This indicates that the following message is asking for action from others with respect to the vessel. Comment: The use of this marker is to signal: I want something to be arranged or provided, e.g. ship´s stores requirements, tugs, permission, etc. Note: REQUEST must not be used involving navigation, or to modify COLREGS. *Example: "REQUEST. I require two tugs."*
(viii) INTENTION This indicates that the following message informs others about immediate navigational action intended to be taken. Comment: The use of this message marker is logically restricted to messages announcing navigational actions by the vessel sending this message. *Example: "INTENTION. I will reduce my speed."*

Source: IMO (2001)

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BAB IX
EMERGENCIES

By Sri Sartini

9.1 The Nature of Emergencies

The rise of emergency incident called as distress situation on board ship lately has forced the shipping industries and ship operators to be more cautious. Safety of life at sea and the protection to the environment become crucial point to consider in operating the vessel from the smallest to the most giant size one. The first two terrific distress on board vessel occured to Titanic vessel (1914) that collided the huge iceberg killing thousands passengers and its crews and the capsizing incident of the Herald of Free Enterprise in March 1987 resulting in life loss of 193 of its 539 passengers and crews (Mišković, Jelaska and Ivče, 2019). The first incident (Titanic tragedy) had inspired the International Maritime Organization (hereafter IMO) to issue and develop Safety of Life at Sea (SOLAS) convention in 1914 and now SOLAS (1974) as amended regulation in order to eliminate the accident and distress on board vessel. Specifying minimum standard for construction, safety equipment and operation of ship compatible with their safety is the objective of SOLAS (1974) convention. It consists of 14 chapter that each regulates the ship handle and procedures. Information data upon the incident commonly wide-spread since a ship has become favourite means of transportation with its maximum loaded cargo inside (Basaran, 2016). The provided information should have brought any action to anticipate more accidents happened and it should be the source of valuable information from a quantity number of entries in order to be useful for safety improvements and it could manage of advanced risk models for particular accidental scenarios (Graziano, Teixeira and Soares, 2016). Besides, the incidents should have reminded the officers and crew aboard vessel to have had accomplished with the required requisite trainings. In

every situation of distress or emergencies, calmness and confident handle should be taken into action because haste decision and jumping to conclusion could exacerbate the situations. The emergencies on board vessel might occur anytime in any situation. Moreover, it could be unpredictable and suddenly to happen. Some previous researches had investigated the causes of distress occured on board vessel. Human factor is supposed to be a frequent cause of distress (Froholdt, 2010; Goulielmos and Gatzoli, 2012; O'Neil, 2002) as well as organizational factor contributes to many ships accidents (Graziano, Teixeira and Soares, 2016). It relates to communication matter (Johnson, 1999) as well as competence such as master and crew's understanding of linear and non linear aspects on board vessel. Further, Johnson (1999) argues that in the context to work properly aboard vessel, a good command of English is required. Otherwise, it triggers misunderstanding that could create errors and cause fatal accident (Boström, 2021). Regarding human factor in vessel incident, safety culture is very important to be instilled toward all crews and personnels on board vessel to eliminate crisis and emergencies. It is defined as a culture that every individual feels responsible for any action to improve safety. Further, safety culture is such a safety attitude and safety value that every personnel on board vessel should acquired (Choudhry, Fang and Mohamed, 2007). Well-developed safety culture would logically improve the safety performance of the work on board vessel and hence, it increases the safety indicator performance of the vessel. Othman (2003) claims that improving safety culture aboard vessel might be achieved by implementing International Safety Management Code (ISM Code). Underpinning Safety Managemet System (SMS) aboard vessel, ISM Code would be needed to guide vessel fulfil its basic to advanced safety requirements. Avoiding emergencies or distress on board vessel is mandatory. Even IMO as the authority holder has already governed and issued some conventions that regulate as it has been mentioned previously; SOLAS chapter to regulates vessel with its minimum standard to be fulfilled. SOLAS (1974) convention covers general provision of ship types; vessel constructions including subdivision and stability,

machinery and electric installation, , fire protection, life-saving appliances, radio communication, safety of navigation, carriage of cargoes, carriage of dangerous cargo, management of the safe operation of ship, measurement to enhance maritime safety and security and measurement for polar water ship operation. Another convention issued by IMO in case of supporting safety and avoiding emergencies is Standard Training Certification and Watchkeeping for seaferers (STCW 1978). This is intended to regulate and standardize maritime education training, Certification and wacthkeeping duties for seafarers so that the quality might be measured the same. For example, as it is mentioned in Chapter II Table A-II/1 STCW Manila Amendment 2010 that toward function of Navigation at the operational level, the officers on board should be competence of many duties one of which is responding to emergencies. It is controlled by the IMO that seafarers must have knowledge, understanding, and proficiency (KUP) in terms of conducting emergency procedure such as precautious for protecting and saving passengers in emergency situation, having initial action following distress situation, being able to assess and controll the existing damage. Assisting another ship in distress, and responding to distress in port. IMO also legalizes Collision and regulation (Colreg 1972) as a standardized rule for ensuring safety shipping especially in the context of preventing collisions at sea by establishing Traffic separation scheme (TSS) provisions in several vulnerable and congested areas. Anticipating sea water contamination by oil and other substances which pollute sea water environment, IMO has issued Marine Pollution (Marpol) that was firstly adapted in 1973 and it comprises two protocols and six annexes to ensure the prevention of oil contaminating the sea water environment. These six Annexes in order regulate prevention of oil pollution, Annex 2 regulates control of pollution by Noxious liquid substances in bulk, Annex 3 regulates prevention of pollution by harmful substances carried by sea in packaged form, Annex 4 comprise to prevention of pollution by sewage from ship. Annex 5 is about prevention of pollution by garbage from ship. The last Annex 6 discussed about prevention of air pollution in ship. There have

been several more conventions issued by IMO however, only four conventions mentioned above have mostly direct implications towards anticipating emergencies onboard vessel.

9.2 Sorts of Emergencies

Several emergencies or distress situations have been identified as fatal incidents if proper handle is insufficient at the right moment and setting. According to IMO Standard marine Communication Phrases (IMO SMCP) there have been at least a few numbers of distress situations identified and those will be described as follows;

9.2.1 Flooding

Flooding might be common phenomenon of distress situation aboard vessel. For several reasons, it becomes very clear that flooding can be triggered by the weather condition or leakage in some parts of the vessel. First, leakage from the equipment or system. When this type of flooding happens, soon several crucial actions should be conducted such as; identifying and finding the trouble, starting the other circulating system and isolating the leaking pump, pipe, cooler and other. Informing chief engineer regarding the leak and follow the instruction from him. Second, flooding due to the leaking from the overboard valve. Third, flooding due to the crack in the hull or small leakage in the hull. Although flooding can be minimized by opening up its scupper and removing the leakage, it belongs to distress, therefore, the master should have paid serious attention and if it is getting worse, distress message must not be sent lately.

9.2.2 Fire - Explosion

Fire is a constant severe threat on board vessel. High temperature presence, the excess quantity of combustible materials and flammable oil might be the common cause of fire. Once it takes place and it does not get proper handle, it will at once be a catastrophic situation. It has been identified that many things might cause fire and fire could lead to explosion. Hence, basic fire prevention should be consistently done. Some of the ways are making sure that there is no leakage of fuel oil, lubricating oil, and exhaust gases. Besides,

healthy loife style by avoiding smoking on board vessel could be a safe way to prevent fire on board. Activating smoke detector, heat detector, and flame detector on board could be better alternative avoiding distress or emergencies of fire on board.

9.2.3 Collision

A hazardous distress that might happen and sometimes leads to marine casualties is collision. Density traffic at waterways, inaccurate available information, human factors, and other organizational factor may result to collision (Martins and Maturana, 2010). It may occur between ship to ship, ship to port, ship to a floating structure, even ship to natural iceberg and so on that leads to devastating accident. It may result in loss of life and even the environmental damage. One example of devastating collision is the tragedy of Exxon Valdes in 1989 that struck Bligh Reef causing minimally 11 million gallons of oil spilt into the water and contaminated almost covering 1300 miles coastlines. It kills many marine life (Gill, Ritchie and Picou, 2016). The consequences resulted from the collision can be unpredictable and unmeasurable. This sort of distress could endanger seafarer, passengers, infrastructures, as well as marine nature and life.

9. 2.4 Grounding

Lack of the depth of the sea water urges vessel to touch the sea bed hence, grounding can not be avoided. In one case, it can be serius trouble. However, when the hull of the vessel crashed into the sharper object, it might trigger the hull to be dented deeply and it might result in heavy leakage hull. Grounding belongs to emergency or distress situation since it has to have tug assisstance or it requires other parties to safe and continue their voyages. According to Martins and Maturana (2010), grounding may be resulted by several reasons such as loss of propulsion or directional system that leads the vessel drifted, loss of steering gear system and azimuth propulsion.

9.2.5 List or Danger of Capsizing

Another deadly incident that lately much takes place is danger of capsizing or listing. In this situation, a vessel loss its balance that it lists to one side and it could not regain its balance and original position making unsafe for its crew, passengers, as well as machineries onboard vessel. It could be devastating since it does not only cause injuries, but it leads to drowning of a crew as well as death from hypothermia or fall from aboard and sinking. Checking seaworthiness of the vessel as it should be and making sure the adequate knowledge and competences of crews aboard vessel are mandatory to conduct in order to avoid such terrible distress. Coping with the problem of listing, while assessing whether or not jettison could be done trying to balancing the position of the vessel in order to avoid worsen listing, sending distress message must be done immediately. Moreover, there is no more other effort could do if jettison does not help, the only way out is to wait for other's assistance.

9.2.6 Sinking

In another case, sinking belongs to emergencies or distress in sea transportation. Although vessel has massive superstructure, its construction also may have risk to make it sink under water. Before sinking, there must be reasons that trigger the vessel to sink such as flooding, collision, grounding, loss of stability, poor weather condition, faulty equipment, improper maintenance. Sending distress message should be conducted by the officer on watchkeeping duties (OOW) under captain instruction if such accident happened. The sooner distress message send, the earlier assistance might come for help.

9.2.7 Disabled and Adrift

In disabled situation, a vessel is actually undergoing distress or emergencies. It is due to the vessel in adrift or disabled vessel could not even maneuver by itself. The vessel is in the position of not under command which means no power in it. It lost its ability to power up. All system get down, electricity does not work and

others. It gets worse rapidly unless assistance comes for help. Therefore, if the vessel is trapped in this situation, sending distress message is urgently recommended.

9.2.8 Armed-Attack/ Piracy

When pirate attack the ship or pirate aboard the ship, it is the moment when the ship handling handed over to the pirate and the captain of the ship does not have any more control toward the vessel. This situation belongs to distress or emergency situation since the safety of the ship is handed over the pirate. Due to the rising of piracy activities, vessel should equip its vessel maintenance with more sophisticated equipment such as electric fence around the vessel. Applying ship security alarm system (SSAS) complements IMO' attempt to create safety aboard vessel. Sending distress signal via VHF or SSAS would be helpful to prevent worsen situation.

9.2.9 Abandoning Vessel

Abandoning vessel is recommended to be taken in a situation of distress where a life-threatening event take place on board vessel. Although it is recommended in particular situation, it still needs to meet some requirements before left out under the master's order. Several preceding distresses usually trigger the decision of abandoning vessel such as fire that leads to explosion on board, severe flooding onboard, collision that might result to vessel drowning or sinking, piracy and other threatening emergencies. And if such hazardous experiences happen, some quick response should be done to find safe solution such as informing the master and engine room about the situation, sending distress signal to get a help of others, record the important data such as the time, the location, the incident. Afterward, sounding the emergency alarm is important. Here, preparing to lower life boat at embarkation deck and making all arrangement at quick notice. Afterward, assessing the damage by the officer that responsible on it to know the impact of the incident toward the vessel. Immediate action needs to be done in case the vessel has been damaged. Check for oil spill and

approach to the nearest port if it is possible. However, abandoning vessel should only be decided by the master if everything else to survive the vessel, crews, passengers, and cargo fail. The master should always remember that the vessel is the best lifeboat and it should be kept afloat. If only it must be abandoned, then no time should be wasted. Effective order should be made to save all crew and passengers escaping the vessel.

9.2.10 Man Overboard

Man overboard (MOB) that some people call it as person overboard (POB) (Gil, Formela and Śniegocki, 2015) occurs when a person whether crew or passenger falls into the sea water from the vessel both in the open sea or still in port and they need to be rescued (Katsamenis *et al.*, 2020; Domeh *et al.*, 2021). This incident is regarded to be a distress or emergency situation due to the possibility of the loss of life. Hypothermal condition and other factors make the man overboard should be assisted quickly. Hence, serious handle must be done in fast response. Even, in open sea sending distress signal is an obligatory to take action. Besides, a fast and effective rescue in MOB becomes crucial matters since survival probability of the person as a victim increases when the rescue team or other crews gives the right handle of a help at the proper time and place (Mou *et al.*, 2021). Adopted from marineinsight.com, several reasons have pushed seafarers or passenger or man overboard; being swept overboard by waves, being pulled by mooring ropes, falling from an accommodation or ladder, climbing on to or sitting on the ship's railings, working in low visibility or in rough sea condition. In such distress situation, proper decided maneuver of vessel to help the victim is much important. According to (Gil, Formela and Śniegocki, 2015) both the William turn and Anderson/ single turn may be done although Anderson turn showed more effective timing to catch up the victim.

9.3 Anticipating the Emergencies

As we have been knowing the nature of emergencies or distress on board, several types of it and the way how to cope with the

problems, several conducts should be considered in order that the catastrophic and devastating accidents could be avoided. It must begin from the shipping companies that runs their vessels as well as manage their seafarer resources. Detail and proper procedure regarding the shipping management as well as the vessel management must be put into concern and done effectively and thoroughly. Safety culture and keeping good communication among all personnels both at sea (crews on board vessel) and ashore (personnels in the shipping lines) must be emphasized. As it is claimed by (Goulielmos and Gatzoli, 2012) that improvement of safety would be gained by improving safety culture. Safety culture onboard vessel can be achieved by implementing the ISM Code that underlies Safety Management System (SMS) (Jung, 2017). IMO decides that ISM code has an aim to ensure that safety at sea, the prevention of human injury or loss of life and the avoidance of loss and damage environment are in fact maintained. In order to attain the objectives, shipping company that manage their vessel operations has better decide safety management objectives at least as follows;

- Providing safe practices in shipboard operation and safe working environment
- Assessing risks to the ship, personnels, and environment
- Improve the safety management skills of personnel ashore and onboard ship including preparation for emergencies (drilling of fire fighting, lifeboat, liferaft, etc).

Implementing the SMS as it is required by ISM Code, every vessel is required to have a safety and environmental protection policy, to have an instruction and procedure to ensure the safe operation of the ship, define levels of authority and lines of communication between shore to ship. The vessel also has to have procedure for reporting accident and non-confirmity as well as procedure to prepare for and respond to emergency situations, undertake

internal audit and management review. All the requirements of the vessel to implement SMS could be described in the following figure 9.1.

Figure 9.1 Component of SMS

(Kidman and Anderson, 2005 in (Wright, 2019))

In shipboard operation, all crews starting from the master of the vessel, his officers until the ratings must acquire sufficient knowledge, understanding, and proficiency from every competence that they should have mastered as professional seafarers. The master must ensure the establishment of emergency response team in his vessel. Besides, he has to manage that every life-saving appliance, all equipment and their maintenance are properly maintained. Clear and systematic documentation of log book and any record should be made easy to assess. Hence, the vessel would have been always in ready position in case any surveillance conducted to check the seaworthiness of the vessel.

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CHAPTER X
THE IMPORTANCE OF ENGLISH IN MARITIME VOCATION

By Haryani

10.1 Introduction

Before we discuss further English in Maritime Vocation, it is better to know first about the role of English adopted in our country, Indonesia. English in Indonesia has become a compulsory foreign language put on the curriculum from kindergarten until the university level. However, it is contradictory when it only becomes a compulsory language used in daily social communication. The role of English in Indonesia is as a foreign language. Therefore, many people use English only in formal ways, like in education, international seminar, or in particular meetings (Haryani et al., 2022).

Above condition is very different from our neighboring countries like Malaysia and Singapore. They use English as their second language. Therefore, all those people can quickly speak English because they are familiar with it and can use it in any situation, not only in an informal but also in a formal one.

In addition, English also has a significant role since it was declared by our government as the first foreign language to be learned, and it has become a compulsory subject from primary school until the university level. English is crucial in Maritime Academy or vocation since it has an International Standard of Curriculum from the International Maritime Organization (IMO).

Moreover, English is also essential nowadays, especially for maritime vocational students. Mastering English means one must be

competent in four basic skills, listening, speaking, writing, and reading (Wibowo RA et al., 2020). Further, in the international shipping company, English is also used to recruit a new crew and determine who is competent in English skills. (Rahmawati Y, 2020).

Besides, people in maritime vocational institutions have been awarded together that the graduated students from Maritime Academy are lucky because they can get an international certificate or "Ijazah" at the end of their study, which is different from other general schools or academies. By this "Ijazah," they are pretty challenging to find an excellent job in the international industry and even can work in any country they want.

Moreover, the graduated students from the maritime academy can continue their study in the same areas of maritime knowledge in foreign countries or even be ready to work or look for a suitable job in the maritime industry around the world. It can be adjusted that the maritime academy or maritime institutions in Indonesia becomes an international school because the curriculum used is derived from IMO.

The graduated students even can work in a foreign country without any obstacles because they have some license documents to work overseas, especially on a vessel that has an ocean-going line. Moreover, the alumnae, especially from the Port and Shipping Management, Nautical, and Technical Departments, can work in various countries worldwide. They can gain a significant opportunity to meet international people and work in different companies.

Beyond the above condition, Maritime English is also essential to ensure safety at sea. Commonly, all seafarers use English effectively-with emergencies, everyday operations, communication ship to shore, health, safety, and security problems. Moreover, Maritime English has been used daily in communication at all places like sea, onshore, or ports. This language is very different from English in General because the terms used are about navigational and meteorological information related to the ship's

operation and safety, as well as the ability to use IMO-Standard Marine Communication Phrase or SMCP (Tchkonia, 2019).

Today, trainers of English for Specific Purposes in vocational schools have a good understanding of English due to achieve specific goals. The use of English by seafarer candidates or professional seafarers also put on the IMO Standard Marine Communication Phrase (SMCP), so they have standardized language while meeting with another vessel and communicating via radio on board. Therefore, these seafarers must be skillful in using that language, whether in writing or speaking form-especially in marine sectors and fields.

This Maritime English is also an example of English for Specific Purposes (ESP) that can be used in maritime sectors. English for Maritime study is also a part of ESP which discusses the material related to the scope of the Maritime Industry as a global language at sea.

In other words, this maritime English should be used by Seafarer Candidates in their future jobs and for those who work in the maritime industry. The necessity for establishment of the Maritime English proficiency standard is mandatory by the International Maritime Organization (IMO) and used by all maritime education. The study of this Maritime English is also suggested in the 3.17 Curriculum. This curriculum was adopted and implemented by higher International Maritime Institutions worldwide..

10.2 Discussion

10.2.1 Seafarer must be Proficient in Maritime English

There are many reasons why Seafarers need to be proficient in Maritime English:

a. The crew comes from various and different countries.

b. Commonly a vessel contains a different crew with their nationality and countries. Therefore English is used as the

primary communication for internal and external communication, especially in running the crew's daily routine.

c. Maritime accidents mostly happen due to unsuccessful and misunderstood communication. Therefore, the seafarers must use standardized language based on Standard Marine Communication Phrase (SMCP), and another standard language for operational jobs and situation.

d. Maritime English is standard. Therefore, Maritime English is the primary communication tool among seafarers in their jobs on board vessels. By doing this, the accident and distress condition can be minimized.

e. Be prepared in case of emergency. Therefore good seafarers must be ready and can handle well any kind of poor conditions like fire, grounding, leakage, man overboard, and other disasters.

From the reason above, the candidate of seafarers must be equipped with good training in using the supporting technology and equipment in the learning process, as well as improve their speaking skills. Speaking skills can be achieved only by practice, which can be done in pairs or in a team to make the conversation live. Picture 10.1: Maritime students practice English in pairs

Source: Private document

Based on the reason for the importance of English above, here, the writer also would like to break down the impact of English in Maritime vocation into three things, they are:

10.2.2 Input, Process and Output

The implementation of English can appear in every term of input, process, and output conducted in Maritime Vocational School or higher education. The classification can be seen in the following table:

Table 1. The classification of English and its impact

No	Classification	Note
1	Input	➢ The interview enrollment test is done using English and mixed with the formal language. ➢ Almost all documents are written in English. ➢ Human resources like teachers and administration staff should mostly have skills in English. ➢ International Maritime Organisation issues the curriculum (IMO), and English is mandatory to be used in the actual job.
2	Process	➢ All the references book used by the teacher to teach students in the class is in English. ➢ Mostly teachers or lecturers sometimes combine English with *Bahasa Indonesia* in their teaching practice. ➢ Having practiced in Simulator,

		Shipping laboratory, and engine laboratory by using English. ➢ The language used in Computer Based Training (CBT) is English. ➢ Seafarers' competence examination (*Pra & Pasca UKP*) uses 100% English in the questions sheet. ➢ All professional practices like GMDSS, ORU, ERM, SSO, BRM, ECDIS, RADAR ARPA, and many others use English in the system. ➢ Having a good corporation with foreign shipping companies.
3	Otput	➢ Fresh graduates as the agent of its institution. ➢ Several cooperated companies need candidates whose English is excellent. ➢ Job vacancies and job interviews use English. ➢ To fulfill the job vacancy, it needs English skills as a required qualification. ➢ All the written job applications and legal documents use English.

10.3 Role of English Maritime vocation

Maritime vocational institutions primarily run the education activity by following some regulations from the Ministry of transportation and the regulation from the Ministry of education and vocational higher education. Many majors can be chosen by

candidates to study, but these three majors are most wanted based on the observations; they are:

10.3.1 Port and Shipping Management

The role of English in Port and Shipping Management is essential. This English can be used for running the top jobs in a shipping company, such as sea transportation, export-import, agency, crewing, forwarder, brokers, port operators, warehouse service, logistics, etcetera. Moreover, English is very demanding for port and shipping management students to be competent in English because, in their actual work in the future, they will connect with international business people in the world and also manage the shipping company, including the vessel, the crew, and the cargo.

10. 3.2 Nautical Department

The role of English for the Nautical Department or students is to help them understand all the materials and use sophisticated tools and technology in their learning activities. Furthermore, they can work well in the future based on their job demand and the job description on board.

Picture 10.2: Deck officer on foreign vessel

Private documents: Raden Dzaky (N52) from Politeknik Bumi Akpelni

Besides, many book references and sources are written in English. They also need to comprehend English since some of their

professional teachers or lecturers sometimes use English to deliver the material in the classroom. In the end, before finishing their study, they also need more than 12 professional certificates to complete their sea and land certificates (*Ijasah Darat & Laut*).

10.3.3 Technical Department

All the technical crew or staff on the shipping company or board vessels can use English. The jobs of engine students will be related to all the machinery equipment and how the mechanical tools can be used appropriately based on their competence. Even though they rarely meet other people in the job field to talk with, the knowledge and skill of English must be mastered because they will have the responsibility to run the engine well and also do bunkering as well as other related mechanical jobs.

Picture 10.3 : Engine room

Source: https://bit.ly/2WRxzJm

10.4 Conclusion

Students studying in Maritime vocation are part of the international candidate whose jobs dealing with foreign companies and vessels. Therefore, to build and improve the knowledge of Marine Science and English as soft skills, one needs to open mind and be aware to use the language consistently and sustainably. In

other words, they must create a better English atmosphere and build convenient spoken habits to be fluent in the language.

Overall, Maritime English is significant for Indonesian seafarers and all people related to their jobs on land and at sea due to overcoming the constraints that appear on board vessels. Lastly, Indonesian seafarers should not be left behind by other developing countries and can show them that they can compete and conquer the world.

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