

**T.C.
MİLLÎ EĞİTİM BAKANLIĞI**

GEMİ YAPIMI ALANI

GEMİ BİLGİSİ (İNGİLİZCE)

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- Bu modül, mesleki ve teknik eğitim okul/kurumlarında uygulanan Çerçeve Öğretim Programlarında yer alan yeterlikleri kazandırmaya yönelik olarak öğrencilere rehberlik etmek amacıyla hazırlanmış bireysel öğrenme materyalidir.
- Millî Eğitim Bakanlığınca ücretsiz olarak verilmiştir.
- PARA İLE SATILMAZ.

CONTENTS

AÇIKLAMALAR	iii
INTRODUCTION	1
LEARNING ACTIVITY-1	2
1. TYPES OF HISTORICAL SHIPS AND THEIR SECTIONS	2
1.1. The Ship Albatross And Its Sections.	2
1.1.1. The Ship Albatross	2
1.2. Galleon Type Ship And Its Sections	5
1.2.1. Galleon Type Ship	5
1.2.2. Parts Of Galleon	6
1.3. The Sultan's Boat (Ottoman Barge)	7
APPLICATION ACTIVITY	9
MEASURING AND EVALUATION	11
LEARNING ACTIVITY-2	12
2. TYPES OF MODERN SHIPS AND THEIR SECTIONS	12
2.1. Passenger Ships	12
2.1.1. Types Of Passenger Ship	13
2.1.2. The Sections Of A Passenger Ship	15
2.2. Tankers	16
2.2.1. Types Of Tanker And Their Sections	16
2.3. Cargo Ships	21
2.3.1. Types Of Cargo Ships And Their Sections	21
2.4. Submarines	24
2.5. Warships	25
APPLICATION ACTIVITY	28
MEASURING AND EVALUATION	30
LEARNING ACTIVITY-3	31
3. SHIP AND ITS AREAS OF USAGE	31
3.1. Definition Of A Ship	31
3.2. Main Sections Of A Ship	31
3.2.1. Ship's Name And Connection Port	32
3.2.2. Shipboard Directions And Locations	33
3.2.3. Classification Of The Ships: The Areas Of Usage	33
3.2.4. Merchant Vessels (Commercial Vessels)	34
3.2.5. Service Vessels	34
3.2.6. Battleships	39
3.2.7. Sports Boats	44
APPLICATION ACTIVITY	47
MEASURING AND EVALUATION	49
LEARNING ACTIVITY-4	50
2. MAIN SECTIONS OF THE SHIP	50
4.1. Main Deck	51
4.2. Deck	51
4.3. Bottom	52
4.4. Bilge	53
4.5. Board	53
4.6. Wing (Side)	54
4.7. Bow	54
4.8. Stem - Fore Peak	54
4.9. Double-Bottom	55

4.10. Rudder	56
4.11. Castle	57
4.12. Stern	57
4.13. Stern Post	58
4.14. Forecastle	58
4.15. Keel	59
4.16. Port	59
4.17. Starboard	60
4.18. Quarter.....	60
APPLICATION ACTIVITY	62
MEASURING AND EVALUATION	64
MODULE EVALUATION.....	66
ANSWER KEYS	67
REFERENCES	71

AÇIKLAMALAR

ALAN	Gemi Yapımı Alanı
DAL/MESLEK	Alan Ortak
MODÜLÜN ADI	Gemi Bilgisi (İngilizce)
MODÜLÜN TANIMI	Eski gemi türleri ve kısımlarını, günümüz gemi türleri ve kısımlarını, gemiyi ve kullanım alanlarını, geminin ana kısımlarını teknik yabancı dille (İngilizce) ifade edebilme ile ilgili bilgi ve becerilerin verildiği öğrenme materyalidir.
SÜRE	40/32
ÖN KOŞUL	Temel düzeyde İngilizce bilgisi (A2 düzeyinde)
YETERLİK	Gemi genel bilgilerini İngilizce okumak ve yazmak
MODÜLÜN AMACI	Genel Amaç Bu modül ile; gerekli ortam sağlandığında tekniğe uygun olarak gemiyi ve geminin kısımlarını yabancı dille ifade edebileceksiniz. Amaçlar <ol style="list-style-type: none">1. Eski gemi türleri ve kısımlarını teknik yabancı dille ifade edebileceksiniz.2. Günümüz gemi türleri ve kısımlarını teknik yabancı dille ifade edebileceksiniz.3. Gemiyi ve kullanım alanlarını teknik yabancı dille ifade edebileceksiniz.4. Geminin ana kısımlarını teknik yabancı dille ifade edebileceksiniz.
EĞİTİM ÖĞRETİM ORTAMLARI VE DONANIMLARI	Ortam: Bireysel Öğrenme Ortamı, Gemi Yapımı Atölyesi, Bilgisayar Laboratuvar Ortamı, Alan Gezileri Ortamı, Sunumlar Donanım: Yabancı Dil Sözlüğü, Yardımcı Teknik Kitaplar, Bilgisayar, Yansıtım cihazı, Yazıcı,
ÖLÇME VE DEĞERLENDİRME	Her öğrenme faaliyeti sonunda kendinizi değerlendirebileceğiniz ölçme araçları yer almaktadır. Ayrıca öğretmeniniz tarafından hazırlanan ölçme araçları ile modül sonunda değerlendirmeye tabi tutulacaksınız.

INTRODUCTION

Dear Student,

As a result of the economical and technological developments, English have become a lingua franca which is used all around the world. Due to globalization it has been an necessity to know English in order to catch the era, to keep up with the times and follow the scientific and technological developments. Therefore shipbuilding has made progress rapidly due to the technological developments. In this sector it is crucial to know English as a technical foreign language to improve the knowledge and experience.

Using English effectively which is to be learnt as a technical foreign language will ensure you to become more qualified employee in the shipbuilding sector.

In this module you will be able to express the historical ships and their sections, modern ships and their sections, ship and its areas of usage and main sections of a ship in technical foreign language.

Knowing English as a technical foreign language is inevitable in order to be successful in the shipbuilding sector, to understand information and resources easily and to master the subject in this sector.

LEARNING ACTIVITY-1

AIM

At the end of this activity, you will have learnt the knowledge about types of the old ships and their sections.

RESEARCH

- Make an observation about the types of old ships and write a report about them.
- Make a research about the old ships on the internet.
- Make an observation about the old ships around you (maritime museums, internet)

1. TYPES OF HISTORICAL SHIPS AND THEIR SECTIONS

1.1. The Ship Albatross and its sections.

The ship albatross and its sections are like below.

1.1.1. The Ship Albatross

The Albatross is a sailing ship built in 1899 also known as a North Sea Klipper, she is one of the oldest sailing ships still a float and few among her peers can stay at sea in more adverse conditions.

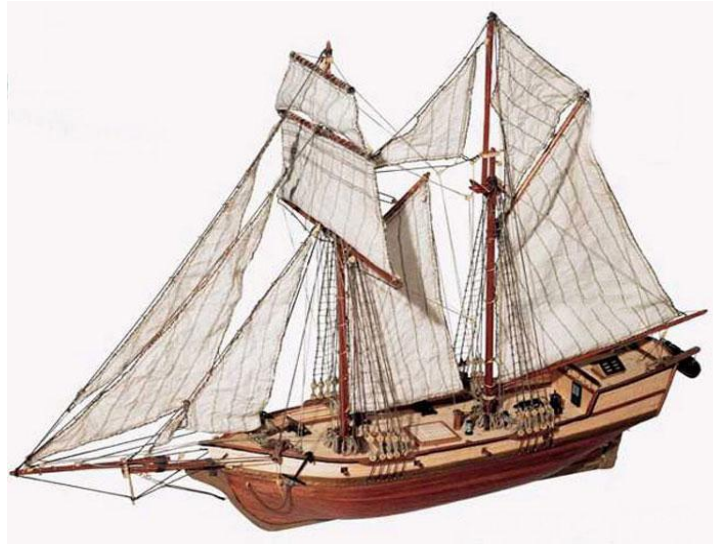


Figure 1.1: Ship Albatross

➤ General characteristics of Albatross

In the following you can see the table showing the general characteristics of typical Albatross:

Tonnage	93 GRT
Length	82.8 ft (25.2 m)
Beam	20.8 ft (6.3 m)
Draft:	9.8 ft (3.0 m)
Propulsion:	1 screw
Complement:	19

Table 1.1: General characteristics of Albatross



Figure 1.2: Ship Albatross

1.2. Galleon type ship and its sections

Galleon type ship and its sections are like below.

1.2.1. Galleon type ship

A galleon was a large, multi-decked sailing ship used primarily by European states and Ottoman Empire from the 16th to 18th centuries. Whether used for war or commerce, they were generally armed with the demi-culverin which is the type of cannon.

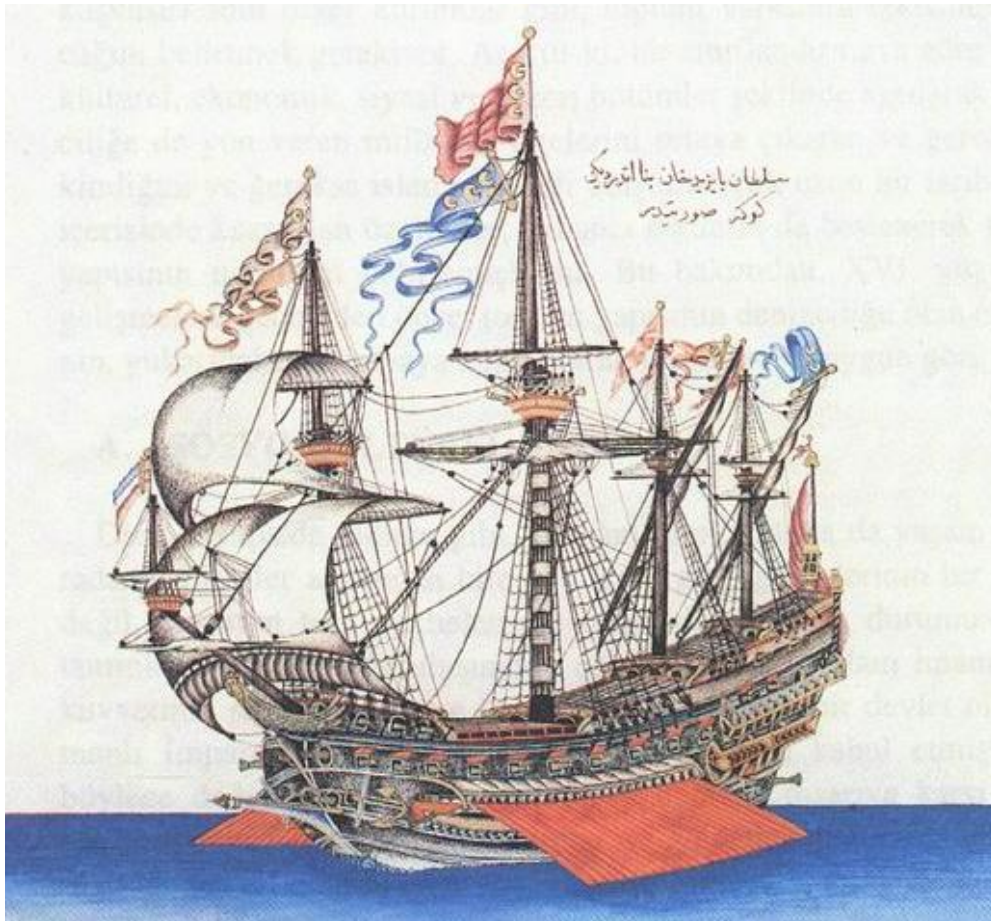


Figure 1.3: Ottoman Galleon

Galleons were constructed from oak (for the keel), pine (for the masts) and various hardwoods for hull and decking. Hulls were usually carvel-built. The expenses involved in galleon construction were enormous. Hundreds of expert tradesmen (including carpenters, pitch-melters, blacksmiths, coopers, shipwrights, etc) worked day and night for months before a galleon was seaworthy.

1.2.2. Parts of Galleon

In the following figures you can see the sections of the Galleon Ship.

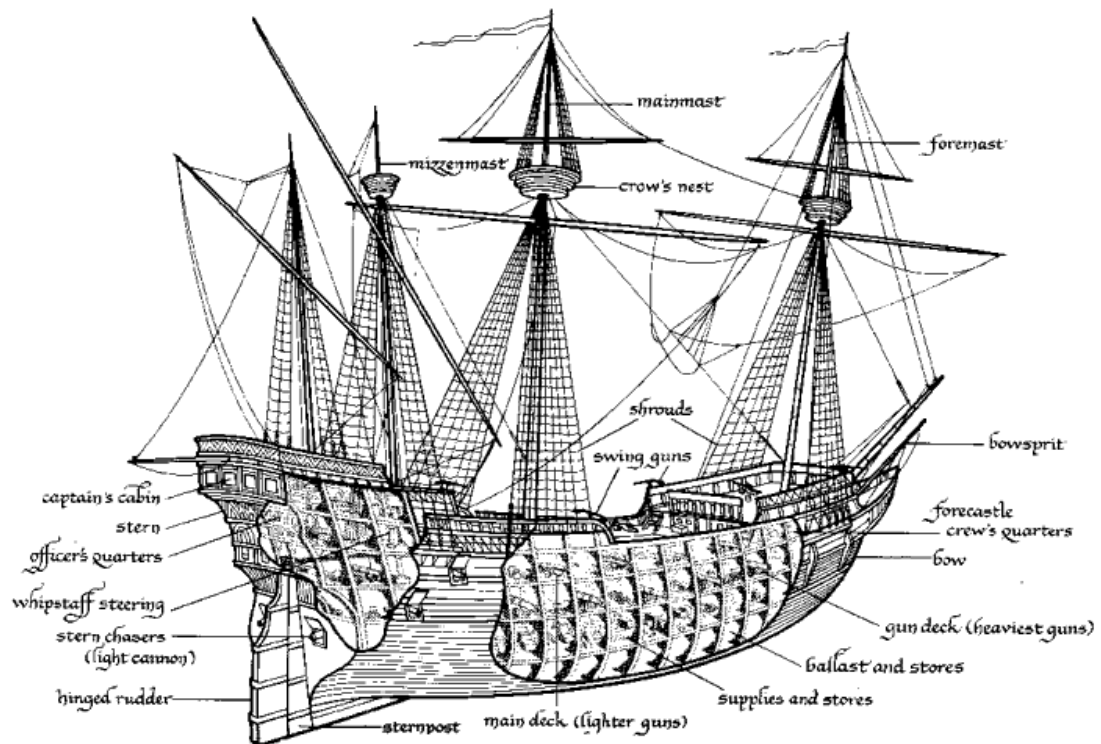


Figure 1.4: General View of the Parts of Galleon

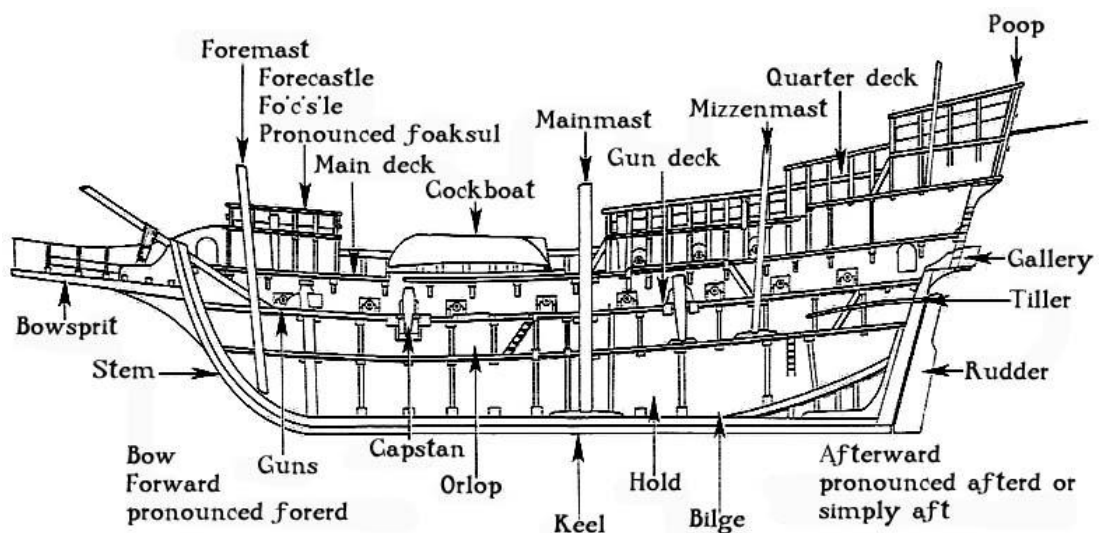


Figure 1.5: Buttock of a Galleon Ship (side view)

1.3. The sultan's boat (Ottoman barge)

Sultan's boat was the boat providing the transport of palace staff between short distances. The Sultan and his relatives were using these boats for Friday ceremonies or for their daily town trips.

The Ottomans classified boats according to the person using them as well as the purpose of use. There was a hierarchy that determined who could use which boat, the number of oarsmen they could have working and other such details. At the top of the rank were the Sultan's boats that carried the ruler of the empire, the Sultan. The Sultan was the only person who could own the largest boat (30 meters x 2.5 meters) and has the greatest number of oarsmen (26). Only he was allowed to travel around the Golden Horn and the Bosphorus on this spectacular boat specifically designed and decorated to show his imperial wealth, power and prestige.

English traveller E. Warburton who came Istanbul in the 19th century described: "On a Friday gunfire informed us that the Sultan left the Palace by boat. We hurried to the shore to see the Sultan. We were as fast as an arrow however the Sultan's boat was as if flying. The 26 rowers with silk waistcoats were rowing the flashy boat not over the sea but above the sea.

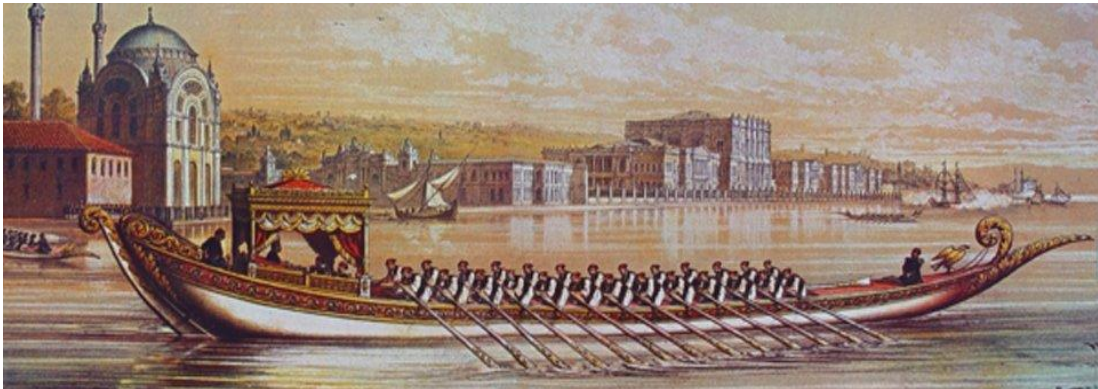


Figure 1.5: Drawing of a Sultan's boat



Figure 1.6: The replica of a Sultan's boat

APPLICATION ACTIVITY

Use vocational language when necessary.

Steps of Process	Suggestions
➤ Translate the text below into Turkish.	<ul style="list-style-type: none">➤ Read the whole text.➤ While reading try to predict the terms that you do not know.➤ Find the english equivalents of the terms from technical dictionaries. That you can't predict.➤ You can find detailed information about the terms from the text.

The history of ships

- The dugout was an early boat.
- People moved rafts with poles and oars.
- Egyptians developed sailing ships.
- The Phoenicians dominated Mediterranean commerce with galleys for centuries.
- Vikings built their ships of oak planks. Viking ships were propelled by sail and oars and steered with an oar fixed to the starboard (steerboard).
- The rudder replaced the steering oar.
- Wooden sailing ships such as clippers and schooners reached their highest level of development between 1840 and 1905.
- Most early steamships were driven by paddle wheels , but screw propellers were developed in 1840.

CHECKLIST

If you have behaviors listed below, evaluate yourself putting (X) in “**Yes**” box for your earned skills within the scope of this activity otherwise put (X) in “**No**” box.

Evaluation Criteria	Yes	No
1. Can you define the Albatross?		
2. Can you state the type of the Albatross?		
3. Can you say the general characteristics of Albatross?		
4. Can you define the Galleon?		
5. Can you say the construction materials of the Galleon?		
6. Can you name the parts of the Galleon?		
7. Can you define the Sultan’s boat?		
8. Can you say the functions of the Sultan’s boat?		
9. Can you state the size of the Sultan’s boat?		
10.Can you say the main purpose of designing Sultan’s boat?		

EVALUATION

Please review your “**No**” answers in the form at the end of the evaluation. If you do not find yourself enough, repeat learning activity. If you give all your answers “**Yes**” to all questions, pass to the “Measuring and Evaluation”.

MEASURING AND EVALUATION

Evaluate the given knowledge, If the knowledge is **TRUE**, write “**T**” , if it is **FALSE**, write “**F**” to end of the empty parenthesis.

1. ()The Albatross is the type of a ship built in 1899
2. ()The Albatross is a sailing ship
3. ()Tonnage of the Albatross is 95 GRT
4. ()A galleon was a large, multi-decked sailing ship used primarily by European states and Ottoman Empire from the 14th to 15th centuries.
5. ()Galleons were constructed from oak (for the keel), pine (for the masts)
6. ()Hulls of the Galleons were usually carvel-built.
7. ()Sultan’s boat was the boat providing the transport of palace staff between short distances.
8. ()The Sultan and his relatives were using the sultan’s boat for fishing
9. ()The largest sultan’s boat is 35 meters x 3.5 meters
10. ()The Sultan’s boat was designed and decorated to show the imperial wealth, power and prestige.

EVALUATION

Please compare the answers with the answer key. If you have wrong answers, you need to review the Learning Activity. If you give right answers to all questions, pass to the next learning activity

LEARNING ACTIVITY-2

AIM

At the end of this activity, you will have learnt the knowledge about types of the modern ships and their parts according to international standards.

RESEARCH

- Make an observation about the types of ships and write a report about them.
- Make a research about ships on the internet and in the library.
- Make an observation about the types of ships in the area where you live (seaports, harbour, marinas, shipyards, marine sport clubs)

2. TYPES OF MODERN SHIPS AND THEIR SECTIONS

2.1. Passenger ships

A **passenger** ship is a ship whose primary function is to carry passengers. The category does not include cargo vessels which have accommodations for limited numbers of passengers.



Figure 2.1: Passenger ship

2.1.1. Types of passenger ship

Passenger ships are categorized into three types; **ferry, ocean liner, cruise ship**

- **Ferry (ferryboat)** is a vessel for day or overnight short-sea trips moving passengers and vehicles (whether road or rail)



Figure 2.2: Ferry (Ferryboat)

In the following figure you can see the sections of a ferry:

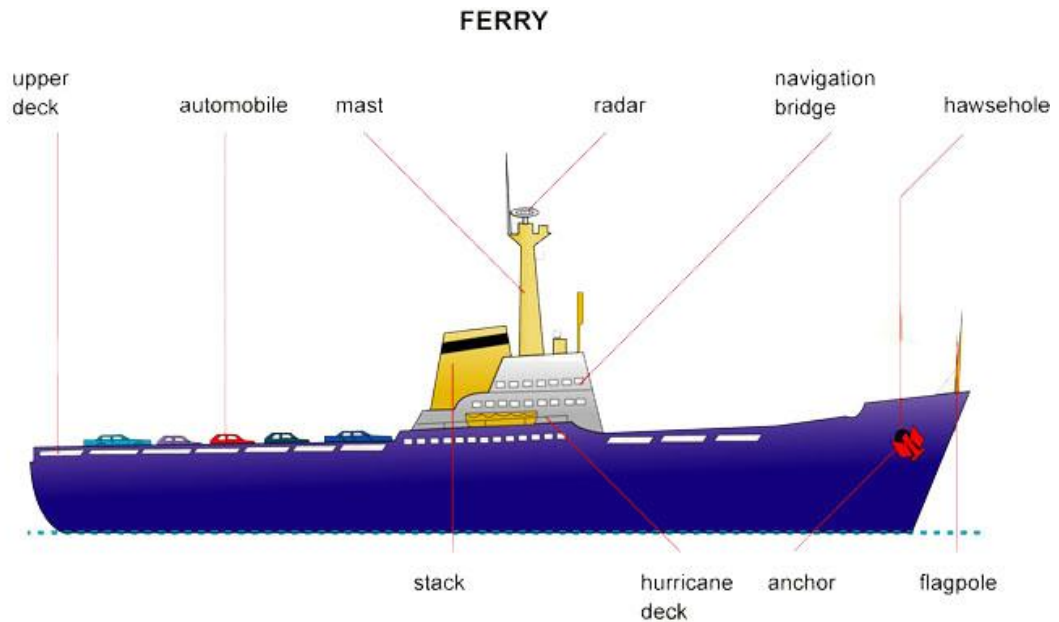


Figure 2.3: The sections of a ferry

- **Ocean liner** typically is a passenger or passenger-cargo vessels transporting passengers and often cargo on longer line voyages.



Figure 2.4: Ocean liner

- **Cruise ship** often transports passengers on round-trips. The trip itself and the attractions of the ship and ports are visited is the principal draw.



Figure 2.5: Ocean liner

2.1.2. The sections of a passenger ship

In the following you can see the sections of the passenger ship:

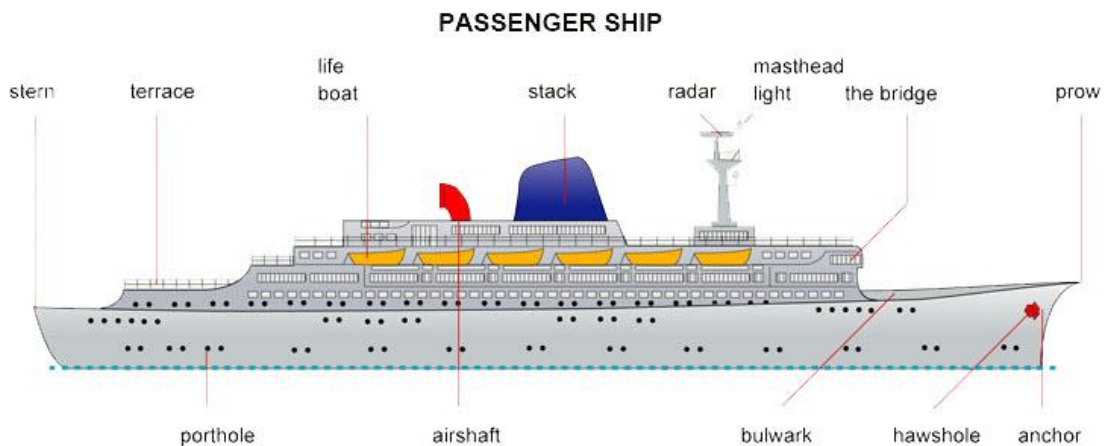


Figure 2.6: The sections of a passenger ship (liner)

Stern: rear part of a ship.

Terrace: flat, open air area.

Life boat: small boat used in emergencies.

Stack: device used for expelling smoke.

Radar: apparatus that detects objects through the use of microwaves

Masthead light: light at the top of the mast.

The bridge: raised platform from which a boat is commanded.

Prow: front part of a boat.

Anchor: steel or iron hook, attached to the ship by a chain, that holds the ship in place by hooking it to the bottom of a body of water.

Hawsehole: opening in the front of the ship for cables and chains.

Bulwark: protective rim of the upper deck.

Airshaft: sheet metal conduit used to ventilate the hold and between-decks.

Porthole: small, round, thick, watertight window of a boat.

2.2. Tankers

Tankers (or tank ships) are vessels designed for carrying any liquid cargo such as petroleum and products derived from it, liquefied gases, chemicals, etc.

2.2.1. Types of Tanker and their sections

Major types of tank ship include oil tanker, chemical tanker, liquefied gas carriers (LNG-LPG) and OBO (Oil, Bulk, Ore) carrier:

➤ Oil Tanker

An **oil tanker**, also known as a **petroleum tanker**, is a merchant ship designed for the bulk transport of oil. There are two basic types of oil tankers: the **crude tanker** and the **product tanker**.



Figure 2.7: Oil Tanker

In the following you can see the sections of the oil tanker:

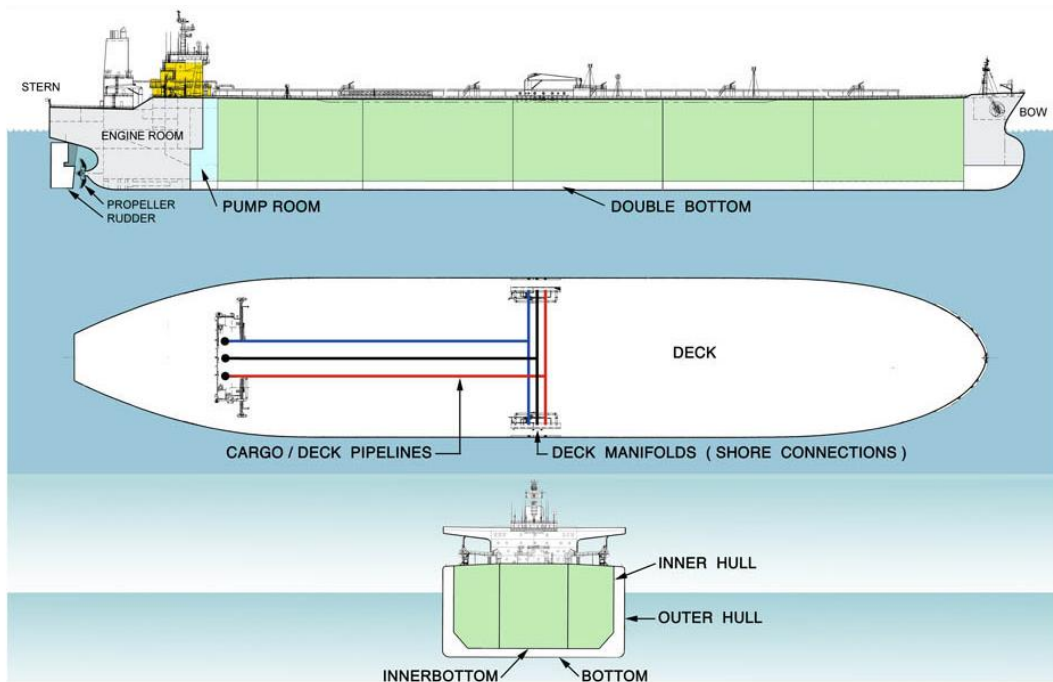


Figure 2.8: The sections of an oil tanker

➤ **Chemical tanker**

A **chemical tanker** is a type of tanker designed to transport chemicals in bulk. Ocean-going chemical tankers generally range from 5,000 to 40,000 dwt in size, which are considerably smaller than the average size of other tanker types due to the specialised nature of their cargoes and the size restrictions of the port terminals where they are called to load and discharge.



Figure 2.9: Chemical tanker

In the following you can see the sections of the chemical tanker:

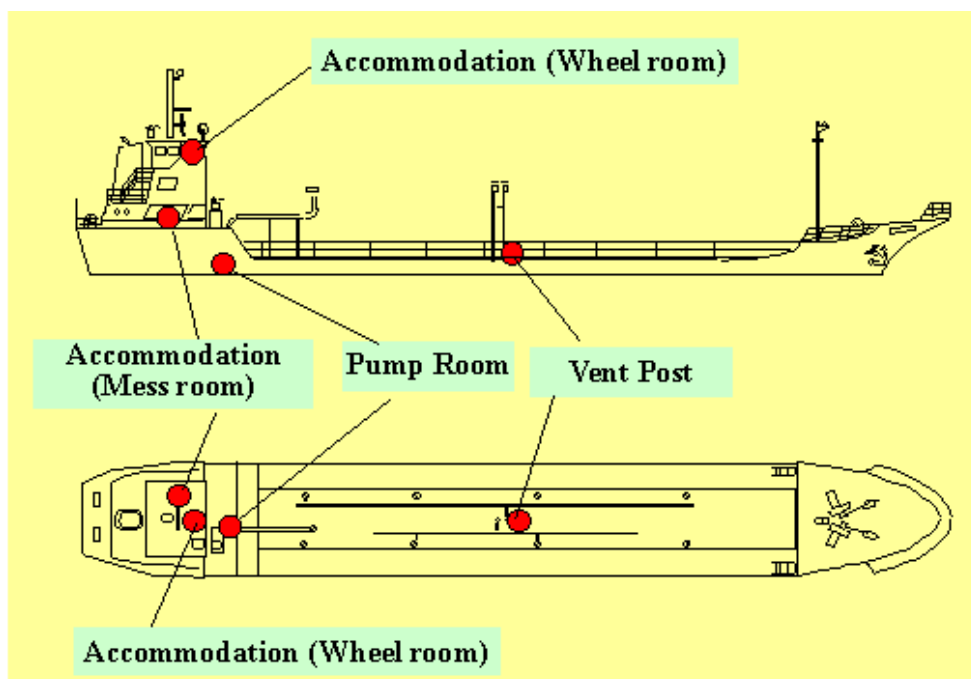


Figure 2.10: The sections of a chemical tanker

➤ **Liquefied Gas Carriers (LNG and LPG)**

An **LNG carrier** is a tank ship designed for transporting liquefied natural gas (LNG).

An **LPG carrier** is a tank ship designed for transporting liquefied petroleum gas (LPG).



Figure 2.11: Liquefied Natural Gas (LNG) Carrier

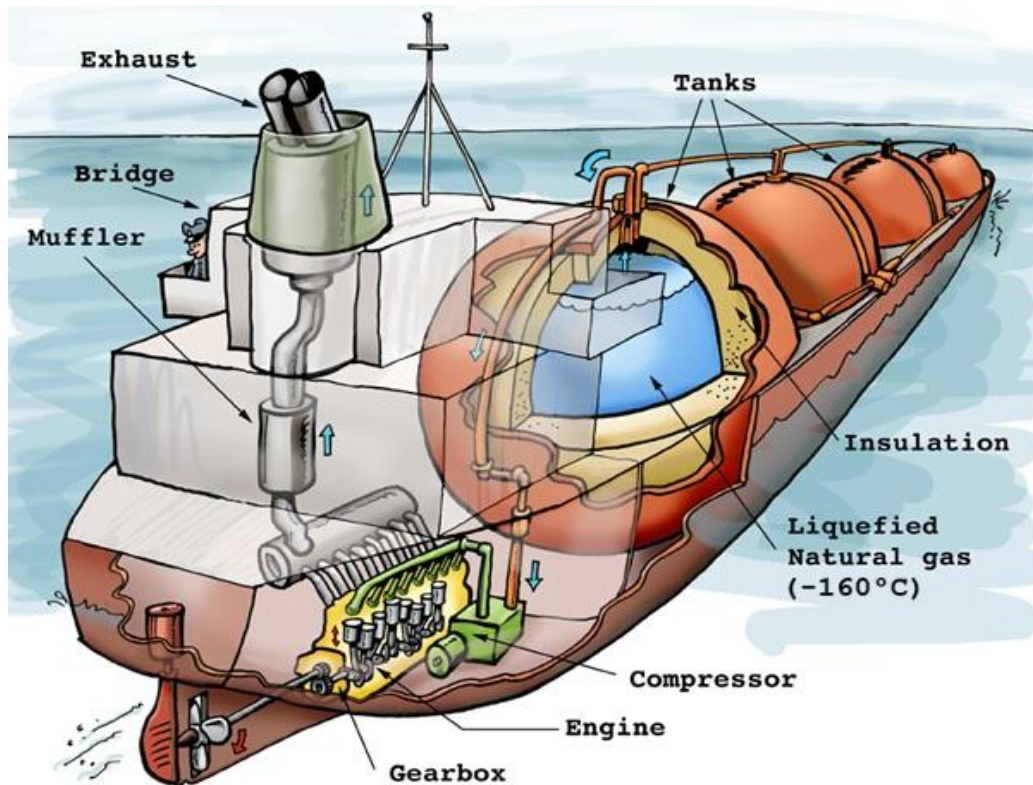


Figure 2.12: The sections of a liquefied natural gas (LNG) carrier

➤ **OBO (Oil, Bulk, Ore) carrier**

An OBO carrier is a vessel that can trade with both Oil, Bulk and Ore cargoes. It would function as a tanker when it carries bulk or ore. It would also be able to take "wet" cargo (oil) one way and "dry" cargo (bulk cargoes / ore).



Figure 2.13: OBO carrier

2.3. Cargo ships

A **cargo ship** (or **freighter**) is any sort of ship or vessel that carries cargo, goods, and materials from one port to another. Thousands of cargo carriers ply the world's seas and oceans each year; they handle the bulk of international trade. Cargo ships are usually specially designed for the task, often being equipped with cranes and other mechanisms to load and unload. They can be found in all sizes.

2.3.1. Types of cargo ships and their sections

Major types of cargo ships include bulk carrier, container ship, general cargo vessel, and reefer:

➤ **Bulk carrier**

A **bulk carrier** (**bulk freighter**, or **bulker**) is a merchant ship used to transport unpackaged bulk cargo such as cereals, coal, ore, and cement.



Figure 2.14: Bulk carrier

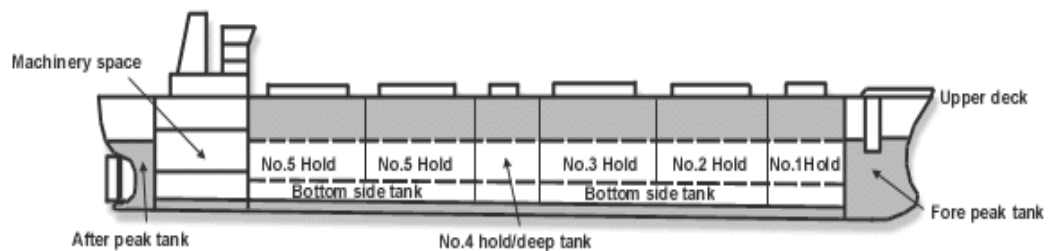


Figure 2.15: The sections of a bulk carrier

➤ Container ship

Container ships are cargo ships that carry their entire (all) load in truck-size containers, in a technique called containerization.

In the following you can see the sections of a container ship:

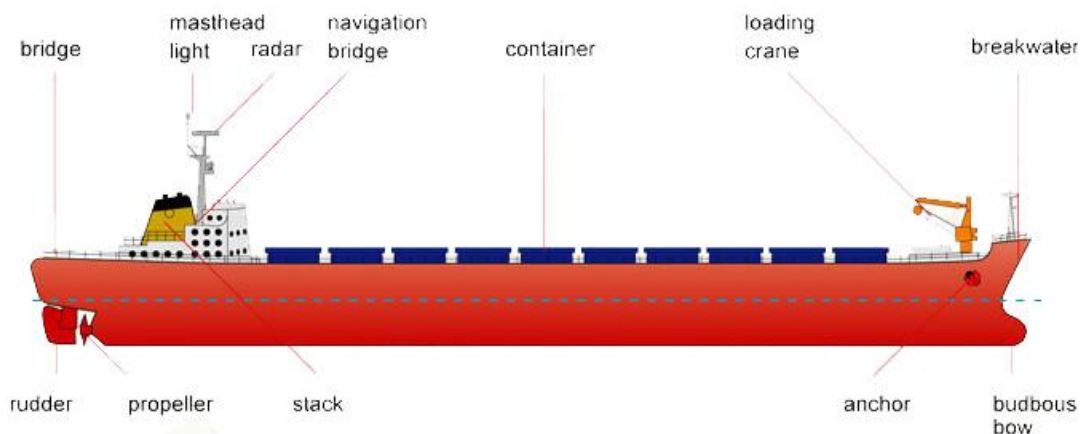


Figure 2.16: The sections of a container ship

Container ship: ship transporting containers.

Bridge: raised platform.

Masthead light: light at the top of the mast.

Radar: apparatus that detects objects through the use of microwaves.

Navigation bridge: raised platform from which a boat is operated.

Container: large boxlike receptacle used for transporting goods by boat.

Loading crane: apparatus used to raise and manoeuvre containers.

Breakwater: part at the front of the boat that cleaves the water.

Bulbous bow: used to change behaviour of the ship.

Anchor: steel or iron hook, attached to the ship by a chain that holds the ship in place by hooking it to the bottom of a body of water.

Stack: device used for expelling smoke.

Propeller: two- or three-bladed apparatus of propulsion.

Rudder: apparatus used for turning a boat.

➤ **General Cargo Vessel**

General Cargo Vessels carry packaged items like chemicals, foods, furniture, machinery, motor vehicles, footwear, garments, etc.



Figure 2.17: General Cargo Vessel

➤ **Reefer ship**

The **reefer ship** is a type of cargo ship typically used to transport perishable commodities which require temperature-controlled transportation, mostly fruits, meat, fish, vegetables, dairy products and other foodstuffs.



Figure 2.18: Reefer Ship

2.4. Submarines

A **submarine** is a watercraft capable of independent operation underwater. The term submarine most commonly refers to a large crewed autonomous vessel.



Figure 2.19: Submarine

In the following figure, you can see the sections of a submarine:

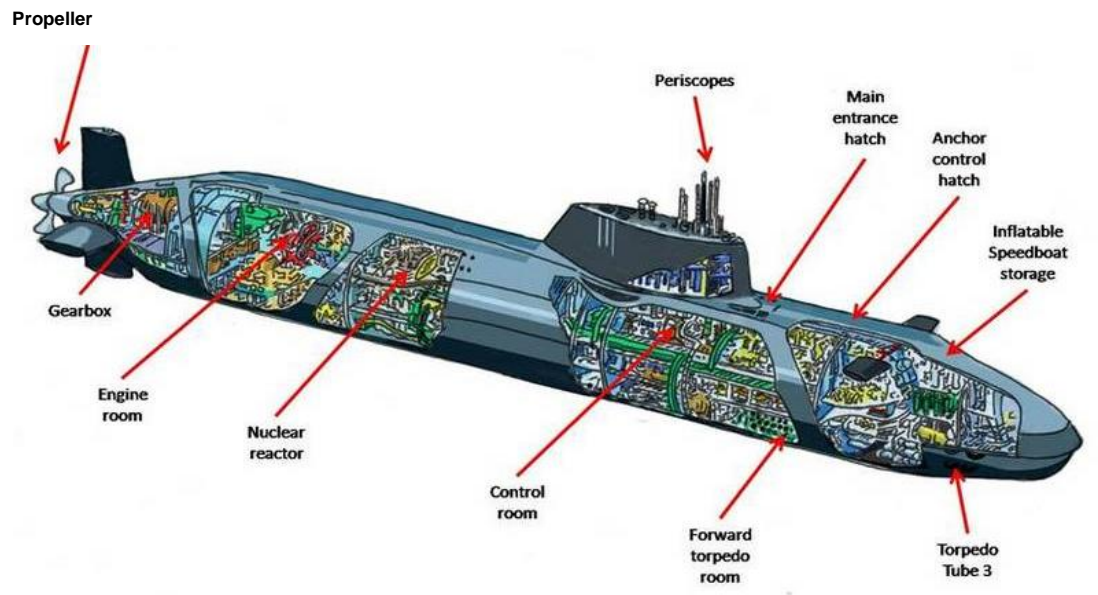


Figure 2.20: The sections of a submarine (cross section)

2.5. Warships

A **warship** is a ship that is built and primarily intended for combat. Warships are usually built in a completely different way from merchant ships. As well as being armed, warships are designed to withstand damage and are usually faster and more manoeuvrable than merchant ships. Unlike a merchant ship, a warship typically only carries weapons, ammunition and supplies for its own crew (rather than merchant cargo).



Figure 2.20: The first Turkish Warship: F-511 Heybeliada (Corvette Frigate)

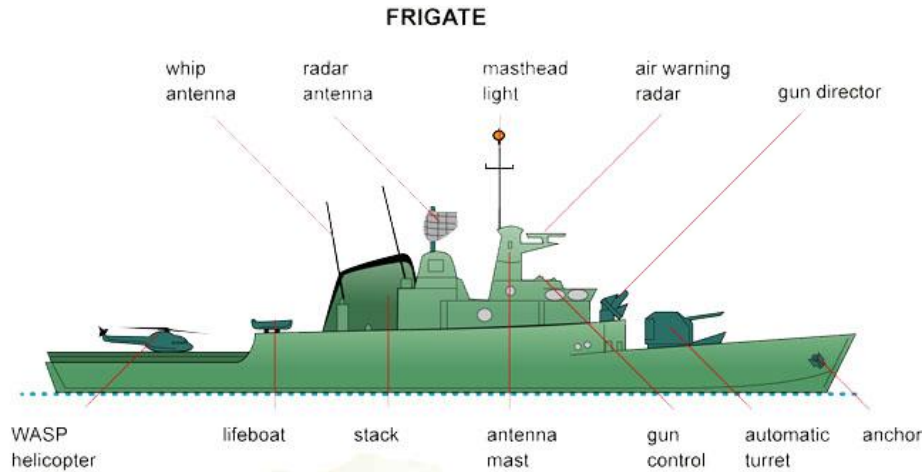


Figure 2.21: The sections of a warship: Frigate

Frigate: warship used as anti-submarine escort.

Whip antenna: whip-shaped antenna used for sending and receiving waves.

Radar antenna: apparatus used to receive radar waves.

Masthead light: light at the top of the mast.

Air warning radar: surveillance radar.

Gun director: apparatus used to aim a gun.

Automatic turret: armoured shelter.

Anchor: steel or iron hook, attached to the ship by a chain that holds the ship in place by hooking it to the bottom of a body of water.

Gun control: device used to aim the fire.

Antenna mast: post supporting the antenna.

Stack: device used for expelling smoke.

Lifeboat: small boat used in emergencies.

WASP helicopter: apparatus balanced and propelled by large rotors.



Figure 2.22: Warship (Type 45 Destroyer)

In the following you can see the sections of a warship called *Type 45 Destroyer*:

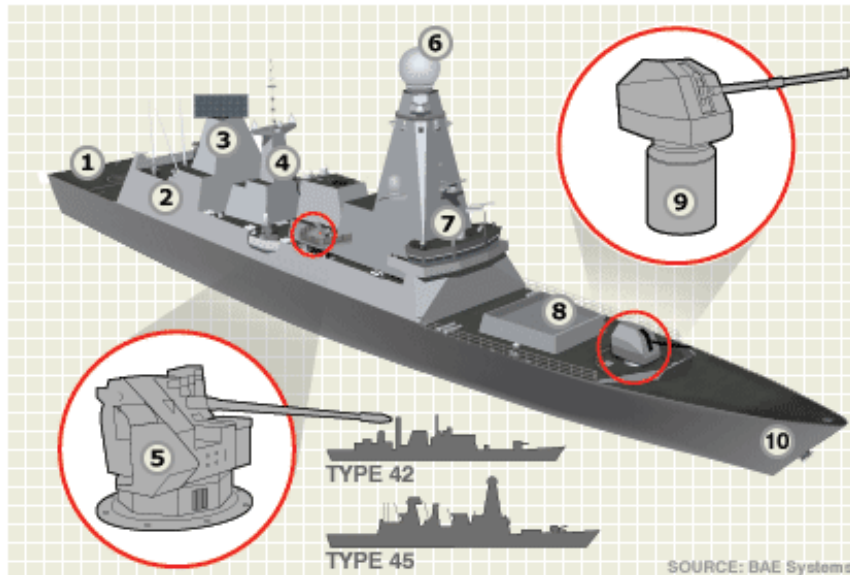


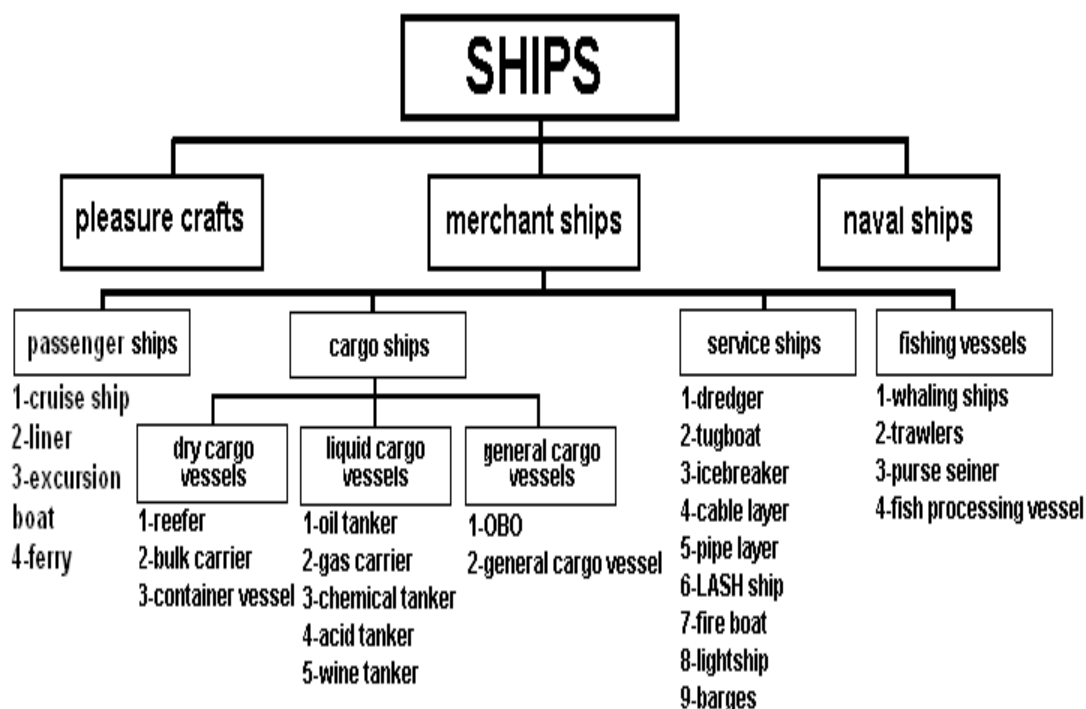
Figure 2.23: The sections of a warship called *Type 45 Destroyer*

1 Flight deck to take Lynx or Merlin combat helicopter	6 Multi-function radar can guide ship's missiles and detect enemy ones
2 Navigation radar	7 Gunfire control system
3 Long-range radar monitors air and surface threats	8 Vertical-launching system for short- and long-range missiles
4 Communications mast	9 Medium-calibre main gun
5 Small-calibre gun	10 Bow sonar (under keel)

APPLICATION ACTIVITY

Use vocational language when necessary.

Steps of Process	Suggestions
<p>➤ Translate the text below into Turkish.</p>	<p>➤ Read the whole text.</p> <p>➤ While reading try to predict the terms that you do not know.</p> <p>➤ Find the english equivalents of the terms from technical dictionaries. That you can't predict.</p> <p>➤ You can find detailed information about the terms from the text.</p>



CHECKLIST

If you have behaviors listed below, evaluate yourself putting (X) in “**Yes**” box for your earned skills within the scope of this activity otherwise put (X) in “**No**” box.

Evaluation Criteria	Yes	No
1. Can you define passenger ship?		
2. Can you state the types of the passenger ship?		
3. Can you recognise the sections of a passenger ship?		
4. Can you define the tanker?		
5. Can you say the types and the sections of the tankers?		
6. Can you define a cargo ship?		
7. Can you say the types and the sections of the cargo ships?		
8. Can you define a submarine?		
9. Can you define a warship?		
10.Can you say sections of a warship: frigate?		

EVALUATION

Please review your "No" answers in the form at the end of the evaluation. If you do not find yourself enough, repeat learning activity. If you give all your answers "Yes" to all questions, pass to the "Measuring and Evaluation".

MEASURING AND EVALUATION

Evaluate the given knowledge, If the knowledge is **TRUE**, write “**T**” , if it is **FALSE**, write “**F**” to end of the empty parenthesis.

1. () A passenger ship is a ship whose primary function is to carry cargo
2. () Passenger ships are categorized into three types; ferry, ocean liner, cruise ship
3. () Ocean-going chemical tankers generally range from 5,000 to 40,000 dwt in size
4. () A cargo ship (or freighter) is any sort of ship or vessel that carries cargo, goods, and materials from one port to another
5. () A bulk carrier, bulk freighter or bulker are different ship types
() Container ships are cargo ships that carry their entire (all) load in car-size containers.
6. () General Cargo Vessels carry packaged items like chemicals, foods, furniture, machinery, motor vehicles, footwear, garments, etc.
7. () The reefer ship is a type of cargo ship typically used to transport unpackaged bulk cargo such as cereals, coal, ore, and cement.
8. () A submarine is a watercraft capable of independent operation underwater.
9. () A warship is a ship that is built and primarily intended for combat.

EVALUATION

Please review your “**No**” answers in the form at the end of the evaluation. If you do not find yourself enough, repeat learning activity. If you give all your answers “**Yes**” to all questions, pass to the “Measuring and Evaluation”.

LEARNING ACTIVITY-3

AIM

At the end of this activity, you will have learnt the definition of a ship and its areas of usage which are merchant vessels, service vessels, battleships and sport boats.

RESEARCH

- Make an observation about the ships and write a report about them.
- Make a research about ships and their areas of usage on the internet and in the library.
- Make an observation about merchant vessels, service vessels, battleships and sport boats around you (seaports, harbours, shipyards, marine sport clubs, internet)

3. SHIP AND ITS AREAS OF USAGE

3.1. Definition of a ship

Ship is a vessel which is constructed accordingly with the sea rules and sea legislations to carry load, passengers, and personnel in the sea as possible as fast, safely and economically.

3.2. Main sections of a ship

In the following diagram you can see the main sections of a ship

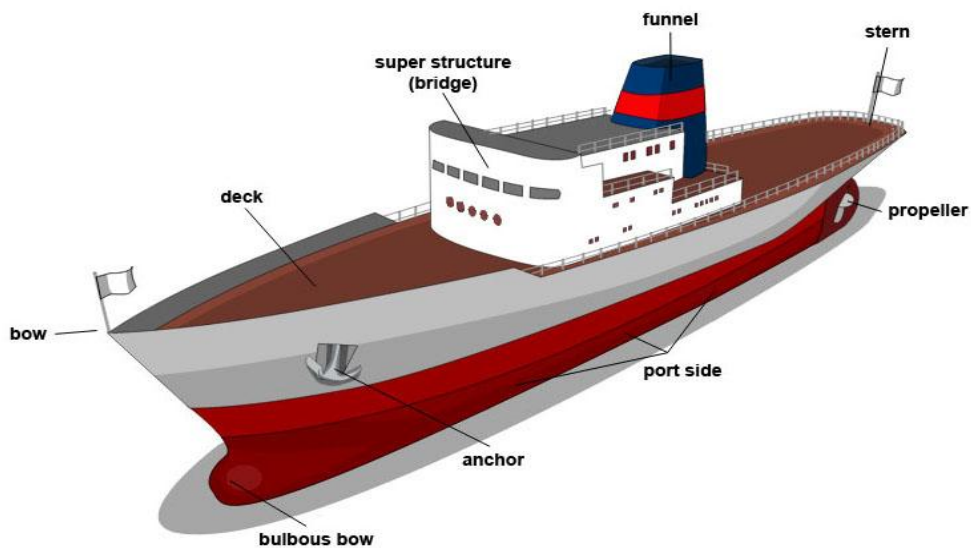


Figure 3.1: Main sections of a ship

3.2.1. Ship's name and connection port

Every ship has got a name. The names of ships are written both on their sterns and forwards in letters which are clearly readable and are not destroyable. The names of ships can never be the same. The names of ships have to be logical and suitable according to the social values.

Connection port is the port where the ship is registered. The name of the connection port is written clearly below the name of the ship on the stern



Figure 3.2: Ship's name and connection port

3.2.2. Shipboard Directions and Locations

The front end of the ship is the bow. When you move toward the bow, you are going forward, when the vessel is moving forward, it is going ahead. When facing toward the bow, the front-right side is the starboard bow and the front-left side is the port bow.

The central or middle area of a ship is amidships. The right centre side is the starboard beam and the left centre side is the port beam.

The rear of a vessel is the stern. When you move in that direction you are going aft, when the ship moves in that direction it is going astern. When looking forward, the right-rear section is called the starboard quarter and the left-rear section is called the port quarter.

The entire right side of a vessel from bow to stern is the starboard side and the left side is the port side. A line, or anything else, running parallel to the longitudinal axis or centreline of the vessel is said to be fore and aft and its counterpart, running from side to side, is athwart ships.

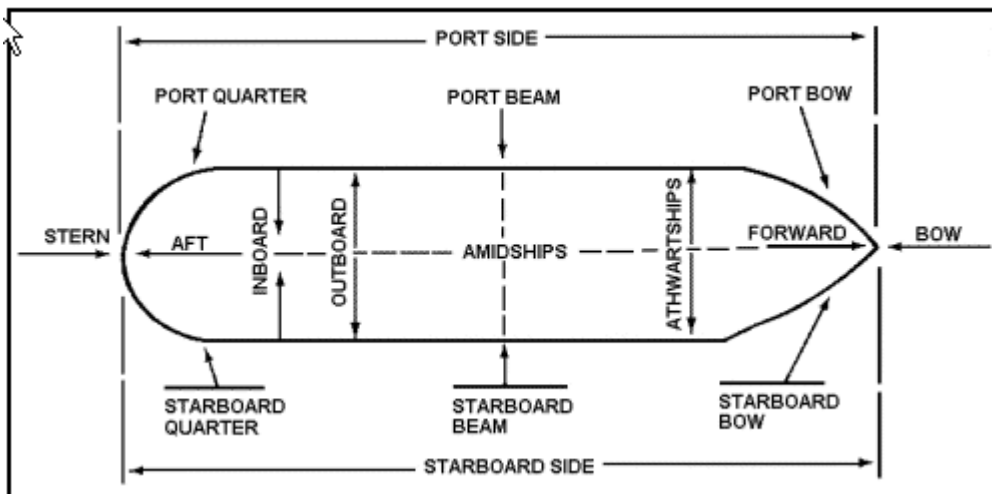


Figure 3.3: Shipboard directions and locations

3.2.3. Classification of the ships: the areas of usage

Ships are difficult to classify, mainly because there are so many criteria to base on classification. The ships are used in commerce, transport, service for the ships, war, sportive activities, etc. In this section, ships are classified according to their usage. This category includes **merchant vessels, service vessels, battleships and sport boats.**

3.2.4. Merchant Vessels (Commercial vessels)

A **merchant vessel** is a ship that transports cargo or passengers. The closely related term **commercial vessel** is defined as any vessel (i.e. boat or ship) engaged in commercial trade or that carries passengers for hire. This would exclude pleasure craft that do not carry passengers for hire or warships.



Figure 3.4: Merchant Vessel (Container Ship)

Merchant ships may be divided into several categories, according to their purpose and/or size:

- **Passenger ships** (Ferry, Ocean liner, Cruise ship)
- **Tankers** (Oil Tanker, Chemical tanker, Liquefied Gas Carriers, OBO carrier)
- **Cargo ships** (Bulk carrier, Container ship, General Cargo Vessel, Reefer ship)

(See the chapter **Learning Activity 2** for more information about the merchant vessels)

3.2.5. Service vessels

Service ships - vessels which serve the merchant fleets and operate in harbors, inland waters and water areas; Depending on the function they perform, service ship can be grouped in four categories:

- **Ships providing** navigation through different waters

Hydro graphic ships - Their purpose is to explore seas and oceans, gather data and report to hydro graphic bureaus which on their part, compose maps and charts. Hydro

graphic ships inform seamen on possible weather changes as well. Besides which, they are in charge of all signalling devices and lightships at sea.

Pilot boats - small vessels that carry a pilot to a ship and then bring him back to the port. These pilots steer the ship through rivers and canals from one point to another by showing the safest way to go. It is true that ships have their own pilots to navigate them through different waters but peculiarities and changes of a particular water area are not shown on any guide. Therefore local pilots are needed. And pilot boats too.



Figure 3.5: Pilot boat

Lightships - smaller vessels painted red and equipped with light- and radio-signal devices and anchored at places which are dangerous for ships to pass through (e.g. shallows, rocks). Lightships have begun to decrease in number and are being replaced by navigation buoys.



Figure 3.6: Lightship

➤ Auxiliary ships

Icebreakers - These are ships maintaining navigation in winter by leading other vessels across ice tracks (and breaking ice-floes). Compared to common ships, icebreakers have a strong bow and different construction of the hull whose purpose is to make ice blocks lift up the vessel. The principle of operation is the following: the ship climbs up the thick ice and cracks it with its hull weight, this way clearing pathways for other ships to cross.



Figure 3.7: Icebreaker

Salvage tugs (or tugboats) - high-speed vessels with an approximate length of 60 meters, used for towing barges and damaged ships and taking them across narrow canals or fairways. Tugs can do fast and easy manoeuvres to front, back and aside. This feature makes tugboats good assistants to big ships which cannot manoeuvre on their own in narrow places and need help.



Figure 3.8: Salvage tug

Push tugs - vessels used for pushing an assembly of barges; Push tugs have very high superstructures which allow to keep a watch on the vessels in front and way ahead.

➤ **Ships providing safety**

Rescue ships - powerful high-speed crafts, able to operate in any conditions and being equipped to save ships which have damage or have suffered an accident aboard and need urgent help. Rescue ships can give help in underwater repairs and provide medical assistance.

Fireboats - equipped to fight fire aboard ships and floating platforms (e.g. oil drills) by spraying foam and water from a distance of 60-100 meters.



Figure 3.9: A naval rescue ship



Figure 3.10: A fire boat

➤ **Ships with special purposes**

Research vessels - ships used for exploring waterways, surveying the sea bottom and ocean processes, locating natural resources (petroleum, cobalt, copper, iron, etc.) and observing marine life. These ships have winches and other devices to assist research underwater vehicles and nets. They also have laboratories inside.

Training ships - for training cadets

Floating "houses" - hospitals, hotels, exhibitions, workshops, laboratories



Figure 3.11: Cadets



Figure 3.12: Floating hospital ship

3.2.6. Battleships

Battleship is a vessel armed, armoured, and otherwise equipped for naval warfare.



Figure 3.12: Battleship

Modern battleships are generally divided into seven main categories, which are:

- **aircraft carriers** (see Figure 3.13)
- **cruisers** (see Figure 3.14)
- **destroyers** (see Figure 3.15)
- **frigates** (see Figure 3.16)
- **corvettes** (see Figure 3.17)
- **submarines** (see Figure 3.18)
- **amphibious assault ships** (see Figure 3.19)

In the following **definitions and functions** of the battleships:

➤ **Aircraft Carriers:**

An **aircraft carrier** is a warship designed with a primary mission of deploying and recovering aircraft, acting as a seagoing airbase.



Figure 3.13: Aircraft carrier - USS Theodore Roosevelt (CVN 71)

➤ **Cruisers:**

A **cruiser** is a type of battleship which is used for carrying out the roles such as air defence, commerce raiding and shore bombardment.



Figure 3.14: The cruiser (The Kirov class nuclear-powered cruiser "Pyotr Velikiy")

➤ **Destroyers:**

A **destroyer** is a fast and manoeuvrable yet long-endurance warship intended to escort larger vessels in a fleet, convoy or battle group and defend them against smaller, powerful, short-range attackers.



Figure 3.15: Destroyer



Figure 3.16: Frigate

➤ **Frigates:**

Frigates are used to protect other warships and merchant-marine ships, especially as anti-submarine warfare (ASW) combatants for amphibious expeditionary forces, underway replenishment groups, and merchant convoys.

➤ **Corvettes:**

A **corvette** is a small, manoeuvrable, lightly armed warship, originally smaller than a frigate (2000+ tons).



Figure 3.17: Corvette

➤ **Submarines:**

A vessel that can be submerged and navigated under water, usually built for warfare and armed with torpedoes or guided missiles



Figure 3.18: Submarine

➤ **Amphibious Assault Ship:**

An **amphibious assault ship** (also referred to as a **commando carrier** or an **amphibious assault carrier**) is a type of amphibious warfare ship employed to land and support ground forces on enemy territory by an amphibious assault



Figure 3.19: Amphibious Assault Ship

3.2.7. Sports boats

A sports boat is generally considered to be designed with the sports enthusiast and racing.

➤ **Types of boat racing**

- **Canoe racing**, competitive forms of canoeing and kayaking.



Figure 3.20: Canoe racing

- Drag boat racing, a form of drag racing which takes place on water rather than land.



Figure 3.21: Drag boat racing

- **Dragon boat racing**, a type of human-powered watercraft racing.



Figure 3.22: Dragon boat racing

- **Hydroplane racing**, a sport involving racing hydroplanes on lakes and rivers.



Figure 3.23: Hydroplane racing

- **Circuit boat racing**, a race between up to 15 boats going for a win.



Figure 3.24: Circuit boat racing

- Jet sprint boat racing



Figure 3.25: Jet sprint boat racing

- Kayak racing



Figure 3.26: Kayak racing

- **Offshore powerboat racing**, racing by large, specially designed ocean-going powerboats.



Figure 3.27: Offshore powerboat racing

- **Yacht racing**, the sport of competitive yachting



APPLICATION ACTIVITY

Figure 3.28: Onshore powerboat racing

Use vocational language when necessary.

Steps of Process	Suggestions
<ul style="list-style-type: none"> ➤ Translate the text below into Turkish. 	<ul style="list-style-type: none"> ➤ Read the whole text. ➤ While reading try to predict the terms that you do not know. ➤ Find the english equivalents of the terms from technical dictionaries. That you can't predict. ➤ You can find detailed information about the terms from the text.

Bulk carriers (bulkers) carry cargoes in bulk such as grain, iron ore, fertilizer, timber, sugar, coal.

Reefers (Refrigerated Cargo Carriers) carry refrigerated cargo such as fish, meat, and fruit.

Roll-on/roll-off ships (RO-RO) are always distinguished by large doors in the hull and by external ramps that fold down to allow rolling between pier and ship.

Livestock carriers are designed to carry farm animals.

Cable-layers lay and repair transoceanic cables.

CHECKLIST

If you have behaviors listed below, evaluate yourself putting (X) in “**Yes**” box for your earned skills within the scope of this activity otherwise put (X) in “**No**” box.

Evaluation Criteria	Yes	No
1. Can you make the definition of a ship?		
2. Can you say how and where the name and connection port of the ship are written?		
3. Can you say the classification of the ships according to their usage?		
4. Can you categorise the service vessels?		
5. Can you say the ships providing navigation through different waters?		
6. Can you state the auxiliary ships?		
7. Can you say the ships providing safety?		
8. Can you categorise the battleships?		
9. Can you define the sports boats?		
10.Can you say the types of boat racing?		

EVALUATION

Please review your “**No**” answers in the form at the end of the evaluation. If you do not find yourself enough, repeat learning activity. If you give all your answers “**Yes**” to all questions, pass to the “Measuring and Evaluation”.

MEASURING AND EVALUATION

Evaluate the given knowledge, If the knowledge is **TRUE**, write “**T**” , if it is **FALSE**, write “**F**” to end of the empty parenthesis.

1. () Ship is a vessel which carries load, passengers and personnel.
2. () The names of ships are written both on their sterns and forwards
3. () A merchant vessel is a ship that transports cargo or passengers for leisure purposes.
4. () Ice-breakers are tugs are ships providing safety
5. () Battleship is a vessel armed, armoured, and otherwise equipped for naval warfare.
6. () A corvette is a big, manoeuvrable, heavily armed warship.
7. () An amphibious assault ship is a type of amphibious warfare ship employed to land and support ground forces on enemy territory by an amphibious assault
8. () Drag boat is used for carrying passengers
9. () Circuit boat racing, a race between up to 30 boats going for a win.
10. () Service ships - vessels which serve the merchant fleets and operate in harbours, inland waters and water areas.

EVALUATION

Please compare the answers with the answer key. If you have wrong answers, you need to review the Learning Activity. If you give right answers to all questions, pass to the next learning activity.

LEARNING ACTIVITY-4

AIM

At the end of this activity, you will have learnt the main sections of the ship.

RESEARCH

- Make an observation about the main sections and write a report about them.
- Make a research about main sections the internet and in the library.
- Visit the workshop at school or a shipyard around you and interview with the teachers and engineers about the main sections of the ship. Prepare a presentation

2. MAIN SECTIONS OF THE SHIP

In this chapter we will study the main sections of the ship. See the figure 4.1 for the main sections, locations and directions of the ship.

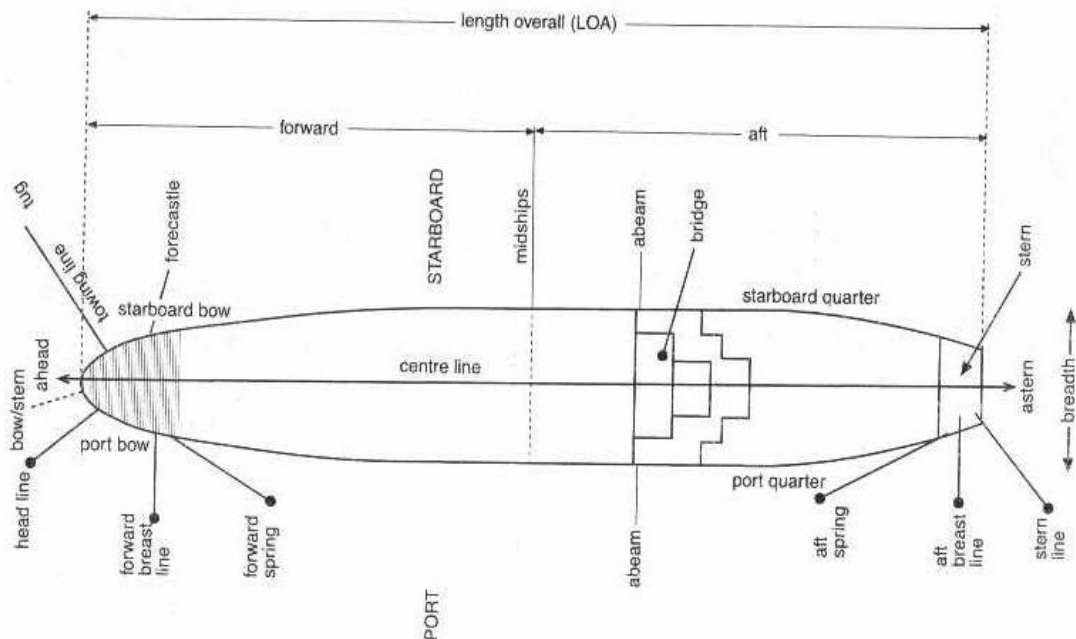


Figure 4.1: Main sections and directions of a ship

4.1. Main deck

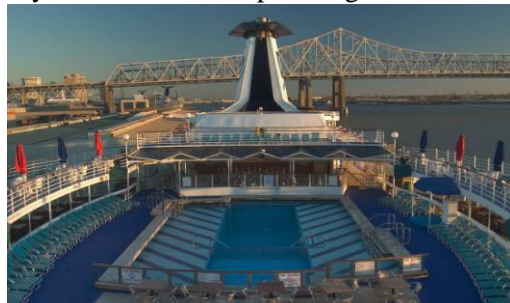
The **main deck** is the principal deck of a vessel; in some ships the highest deck of the hull, usually but not always the weather deck; in sailing warships often a deck under the upper deck. The most important deck is the main deck which serves as a strengthening and protecting element on a vessel. It is a permanent covering over a compartment or a hull of a ship. On a boat or ship, the primary or upper deck is the horizontal structure which forms the 'roof' for the hull, which both strengthens the hull and serves as the primary working surface.



Figure 4.2: Main deck (chemical tanker)

4.2. Deck

The decks extend approximately horizontally between the ship's sides and are supported by the beams and girders. There are several types of decks on a vessel such as the main deck (also called the freeboard deck), the forecastle deck (figure 4.3), the upper deck (figure 4.4), the tween deck (figure 4.5), the shelter deck (figure 4.6), the lifeboat deck (figure 4.7), and the promenade deck (figure 4.8). These are all usually made of steel plantings but the decks of passenger vessels and yachts are usually made of wooden planking.



Figur4.3: Forecastle deck

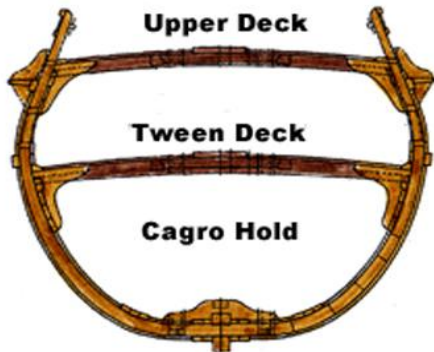


Figure 4.5: Tween deck

Figure 4.4: Upper deck (cruise ship)



Figure 4.6: Shelter deck



Figure 4.7: Lifeboat Deck



Figure 4.8: Promenade Deck

4.3. Bottom

When a vessel is waterborne (that is, floating, or afloat) water cuts the ship's sides at a specific draught. This is called waterline (see the figure 4.3). It is determined by the draught, or in other words, the height of the water as measured from the keel of the vessel. The area above the waterline of the hull surface is called the ship's side and anything below that line is called the **bottom**.

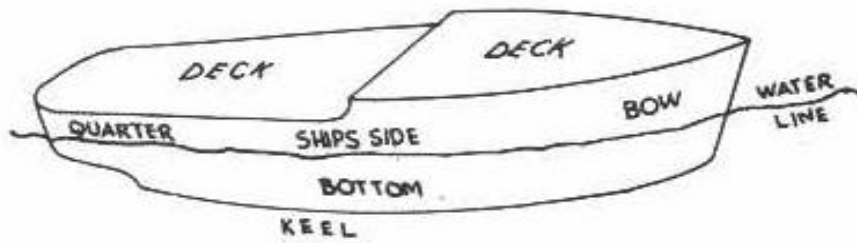


Figure 4.9: Bottom

4.4. Bilge

The **bilge** is the lowest compartment on a ship where the two sides meet at the keel.



Figure 4.10: Bilge

4.5. Board

The both outer sides of the ship above the waterline.

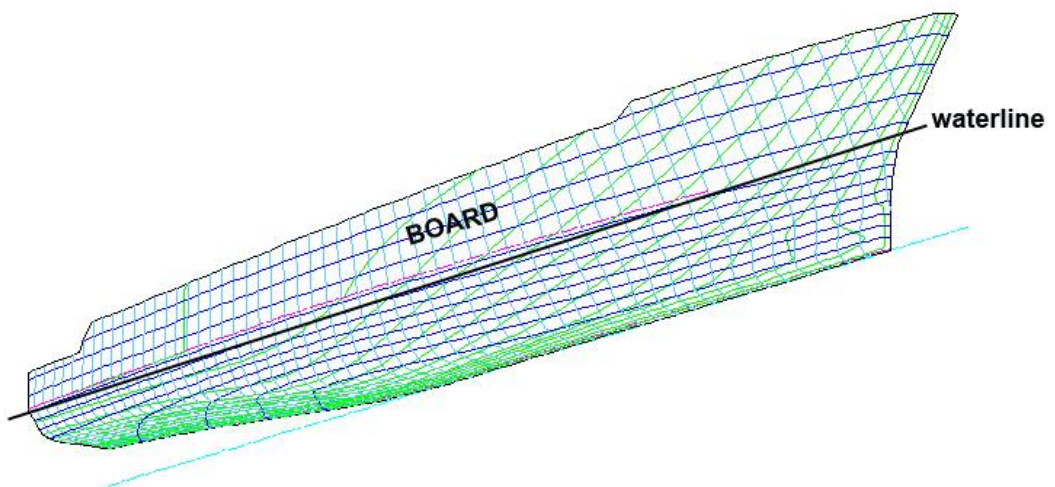


Figure 4.11: Board

4.6. Wing (Side)

The both inner sides of the ship above the waterline.

4.7. Bow

The front end of the ship is the **bow**. When you move towards the bow, you are going forward, when the vessel is moving forward, it is going ahead. When facing toward the bow, the front-right side is the starboard bow and the front-left side is the port bow.

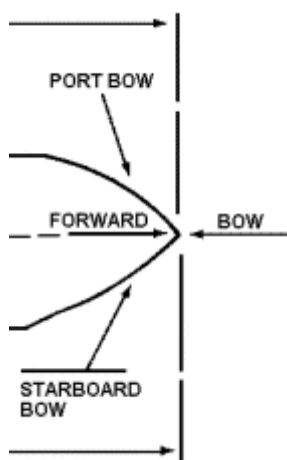


Figure 4.12: Bow

4.8. Stem - Fore peak

The stem is the very most forward part of a boat or ship's bow and is an extension of the keel itself and curves up to the wale of the boat. The stem is more often found on wooden boats or ships, but not exclusively. The stem is part of the physical structure of a wooden boat or ship that gives it strength at the critical section of the structure, bringing together the port and starboard side planks of the hull.

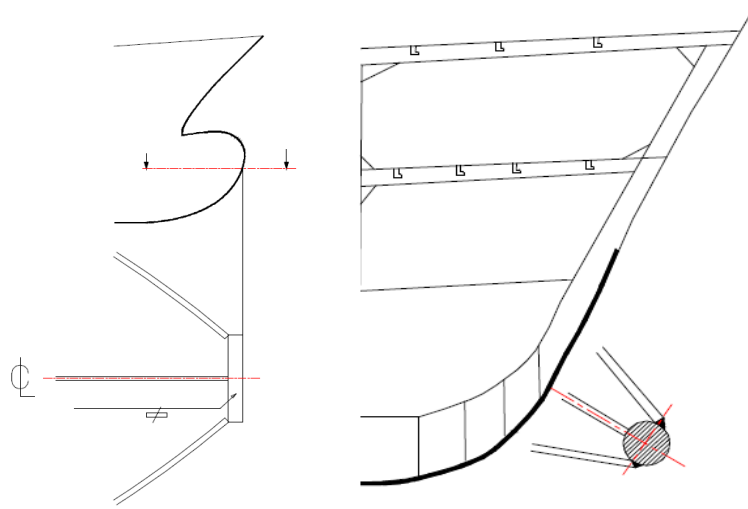


Figure 4.13: Stems

4.9. Double-bottom

Compartments at the bottom of ship between inner and outer bottoms, used for ballast tanks, water, fuel, oil, etc.

Double bottom construction is found on larger vessels. The double bottom space can be used to carry fuel, ballast and fresh water. In addition it provides an extra margin of safety, since in the event of bottom shell damage only the double bottom space may be flooded. The bottom structure is similar to that found in single bottom construction, but with an additional inner skin of plating. Figures 4.8 and 4.9 show transversely and longitudinally framed double bottom constructions.

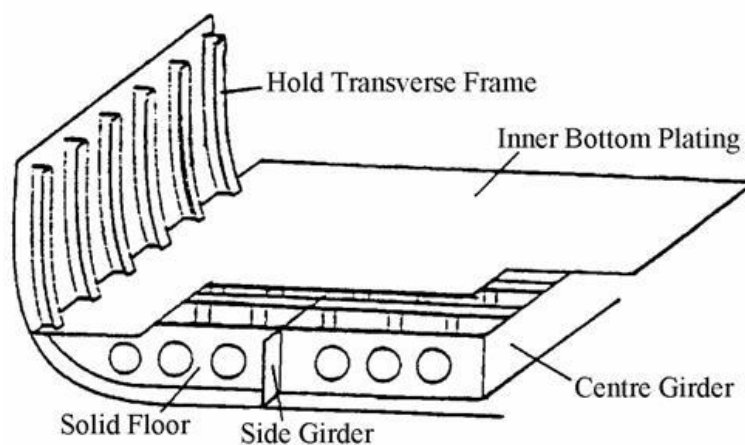


Figure 4.14: Transversely Framed Double Bottom

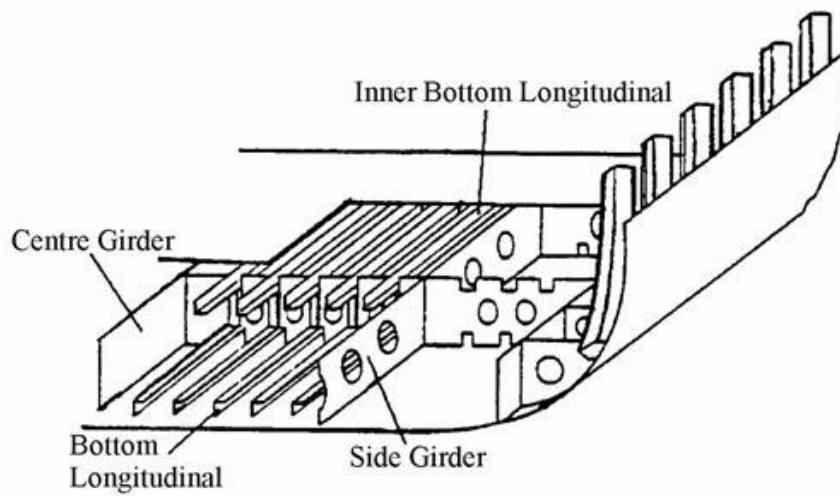


Figure 4.15: Longitudinally Framed Double Bottom

4.10. Rudder

A **rudder** is a device used to steer a ship, boat, submarine, hovercraft or other vessels. Generally, a rudder is "part of the steering apparatus of a boat or ship that is fastened outside the hull", that is denoting all different types of oars, paddles and rudders.

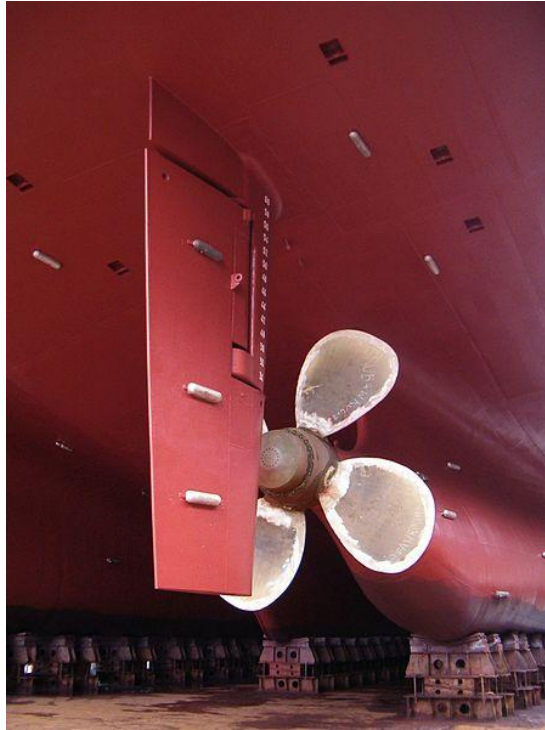


Figure 4.16: Rudder

4.11. Castle

Castle is structure or area raised above the main deck for combat or work purposes.

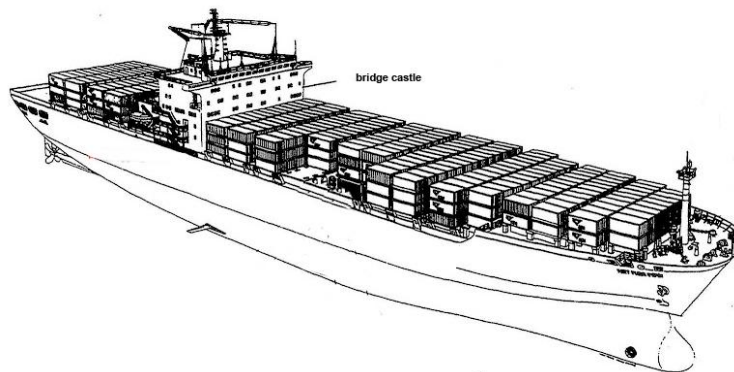


Figure 4.17: Bridge castle (container ship)

4.12. Stern

The **stern** is the rear or aft-most part of a ship.



Figure 4.18: Stern

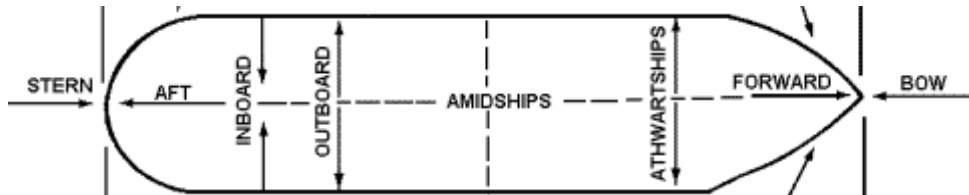


Figure 4.19: Diagram showing the stern

4.13. Stern post

A **sternpost** is the upright structural member or post at the stern of a (generally wooden) ship, to which are attached the transoms and the rearmost left corner part of the stern.

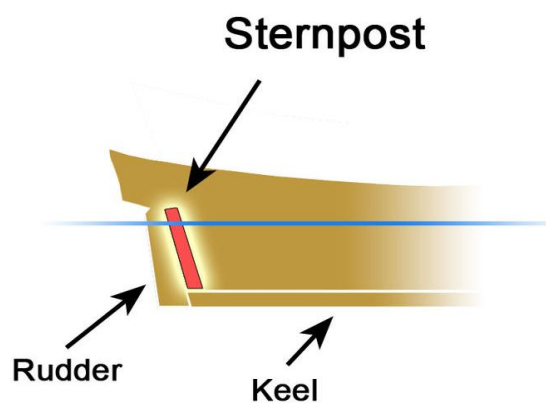


Figure 4.20: Sternpost

4.14. Forecastle

Forecastle refers to the upper deck of a sailing ship forward of the foremast, or the forward part of a ship with the sailors' living quarters.



Figure 4.21: Forecastle

4.15. Keel

Keel is the main structural member or backbone of a ship running longitudinal along centreline of bottom. Usually a flat plate stiffened by a vertical plate on its centreline inside the shell.

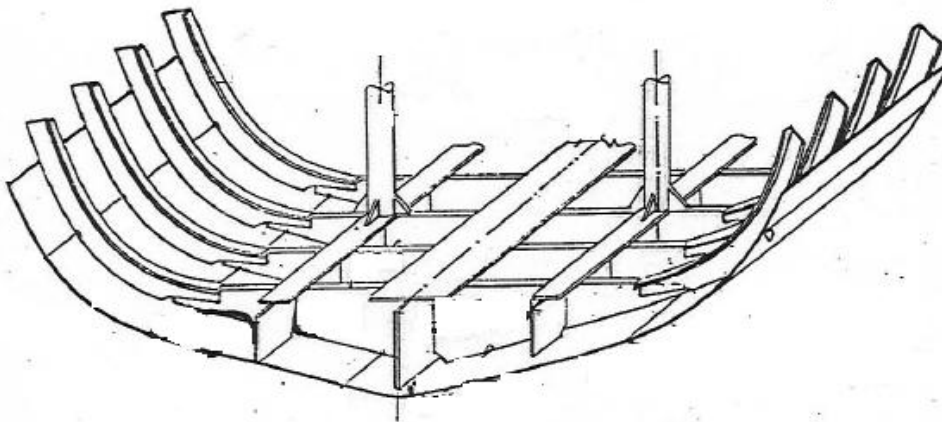


Figure 4.22: Keel

4.16. Port

The **port** is the left side of a ship when looking forward towards the bow; opposite of starboard.

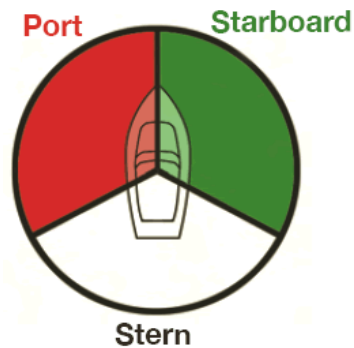


Figure 4.23: Port



Figure 4.24: Port side (Queen Mary II)

4.17. Starboard

The **starboard** is the right side of a ship when facing forward towards the bow.



Figure 4.25: Starboard side (Cruise ship: Freedom of the Seas)

4.18. Quarter

The quarters (port and starboard quarters) are the sides of a ship aft of amidships.

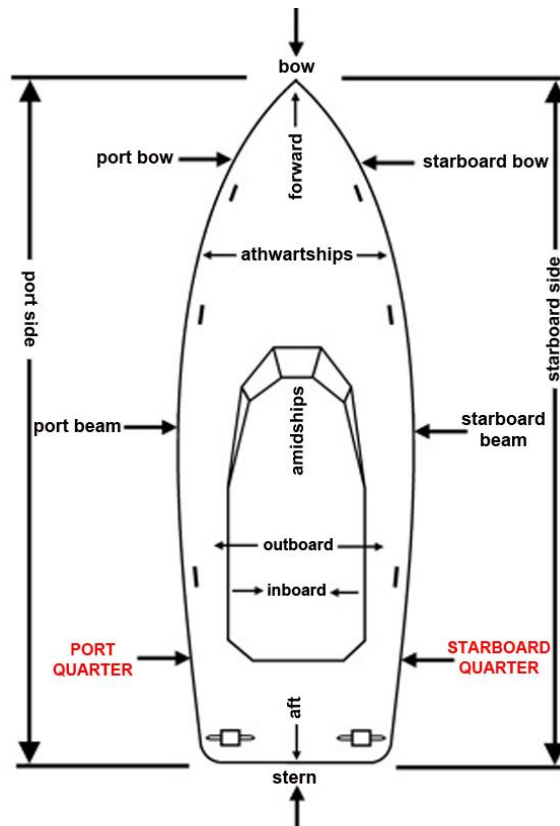


Figure 4.26: Quarters

APPLICATION ACTIVITY

Use vocational language when necessary.

Steps of Process	Suggestions
Translate the text below into Turkish.	<ul style="list-style-type: none">➤ Read the whole text.➤ While reading try to predict the terms that you do not know.➤ Find the english equivalents of the terms from technical dictionaries. That you can't predict.➤ You can find detailed information about the terms from the text.

The depth of ship's bottom or keel below the waterline is draught. The beam of the ship is the distance between the two sides.

The frames, bulkheads, floors and beams complete the skeleton of hull.

The frames which are ribs of the ship are covered by plating.

CHECKLIST

If you have behaviors listed below, evaluate yourself putting (X) in “**Yes**” box for your earned skills within the scope of this activity otherwise put (X) in “**No**” box.

Evaluation Criteria	Yes	No
1. Can you define the main deck and say the types of deck?		
2. Can you show the bottom of the ship on the ship diagram?		
3. Can you define board and wing (side) of the ship?		
4. Can you show the bow and the stern of the ship on the diagram?		
5. Can you say the purpose of the double bottom?		
6. Can you state the function of a rudder in a ship?		
7. Can you define the stern post?		
8. Can you define forecastle?		
9. Can you show the quarters on the ship diagram		
10.Can you name all of the main sections of a ship?		

EVALUATION

Please review your "No" answers in the form at the end of the evaluation. If you do not find yourself enough, repeat learning activity. If you give all your answers "Yes" to all questions, pass to the "Measuring and Evaluation".

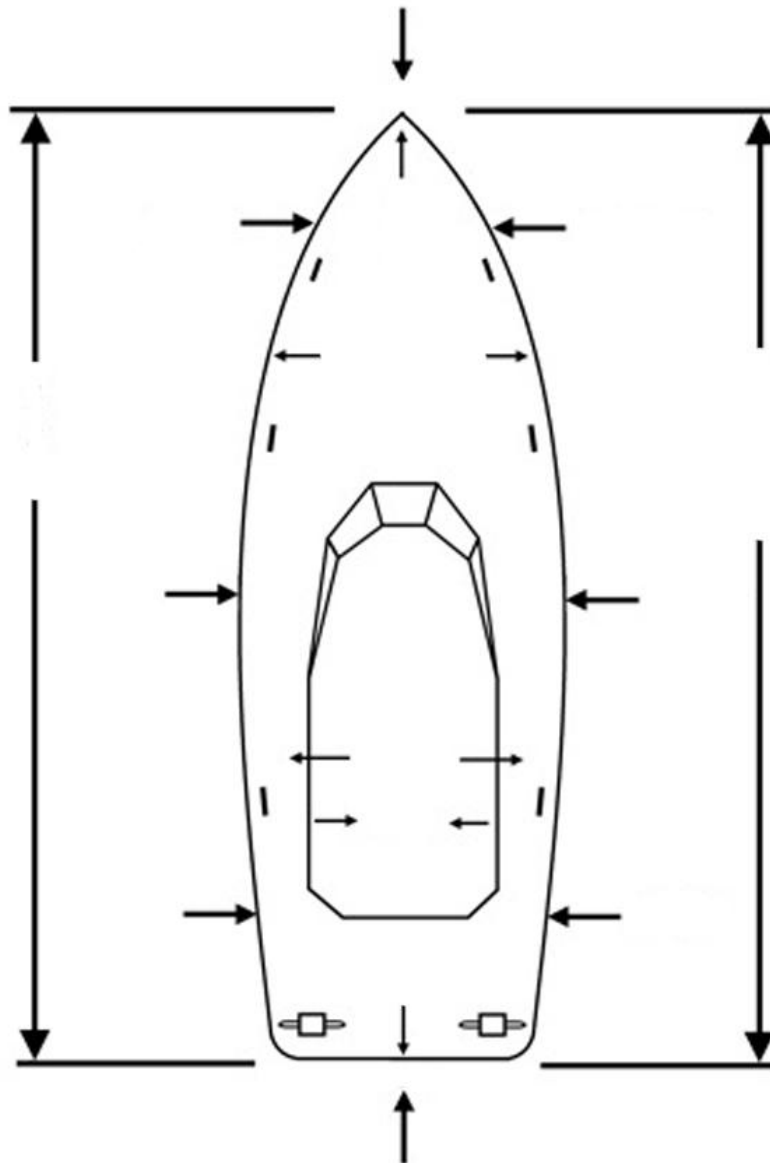
MEASURING AND EVALUATION

Exercise 1:

Evaluate the given knowledge, If the knowledge is **TRUE**, write “**T**” , if it is **FALSE**, write “**F**” to end of the empty parenthesis.

1. ()The main deck is the upper deck of a vessel.
2. ()The area above the waterline of the hull surface is called the ships side and anything below that line is called the draft.
3. ()The bilge is the lowest compartment on a ship where the two sides meet at the keel.
4. ()Double bottoms are compartments at the deck of ship between inner and outer bottoms, used for ballast tanks, water, fuel, oil, etc.
5. ()A rudder is a device used to steer a ship.
6. ()The stern is the forward part of a ship.
7. ()Forecastle is the main structural member or backbone of a ship running longitudinal along centreline of bottom.
8. ()The port is the right side of a ship when looking forward towards the bow.
9. ()A sternpost is the upright structural member or post at the stern of a ship.
10. ()The front end of the ship is the stern.

Exercise 2: Write the main sections and directions of the ship in the following:



EVALUATION

Please compare the answers with the answer key. If you have wrong answers, you need to review the Learning Activity. If you give right answers to all questions, pass to the next learning activity.

MODULE EVALUATION

Complete the following sentences using the words below

Starboard/sternpost/port/Battleship/ ports boat/chemical tanker/ Hawsehole
/service ships/bow/amidships

1. The is the left side of a ship when looking forward towards the bow; opposite of starboard.
2. The is the right side of a ship when facing forward towards the bow.
3. A is the upright structural member or post at the stern of a (generally wooden) ship, to which are attached the transoms and the rearmost left corner part of the stern.
4. A is generally considered to be designed with the sports enthusiast and racing.
5. A is a type of tanker designed to transport chemicals in bulk.
6. is a vessel armed, armoured, and otherwise equipped for naval warfare.
7. The front end of the ship is the
8.- vessels which serve the merchant fleets and operate in harbors, inland waters and water areas.
9.: opening in the front of the ship for cables and chains.
10. The central or middle area of a ship is

EVALUATION

Please compare the answers with the answer key. If you have wrong answers, you need to review the Learning Activity. If you give right answers to all questions, pass to the next learning activity

ANSWER KEYS

LEARNING ACTIVITY-1: ANSWER KEYS

1	True
2	True
3	False
4	False
5	True
6	True
7	True
8	False
9	False
10	True

LEARNING ACTIVITY-2: ANSWER KEYS

1	False
2	True
3	True
4	True
5	False
6	False
7	True
8	False
9	True
10	True

LEARNING ACTIVITY-3: ANSWER KEYS

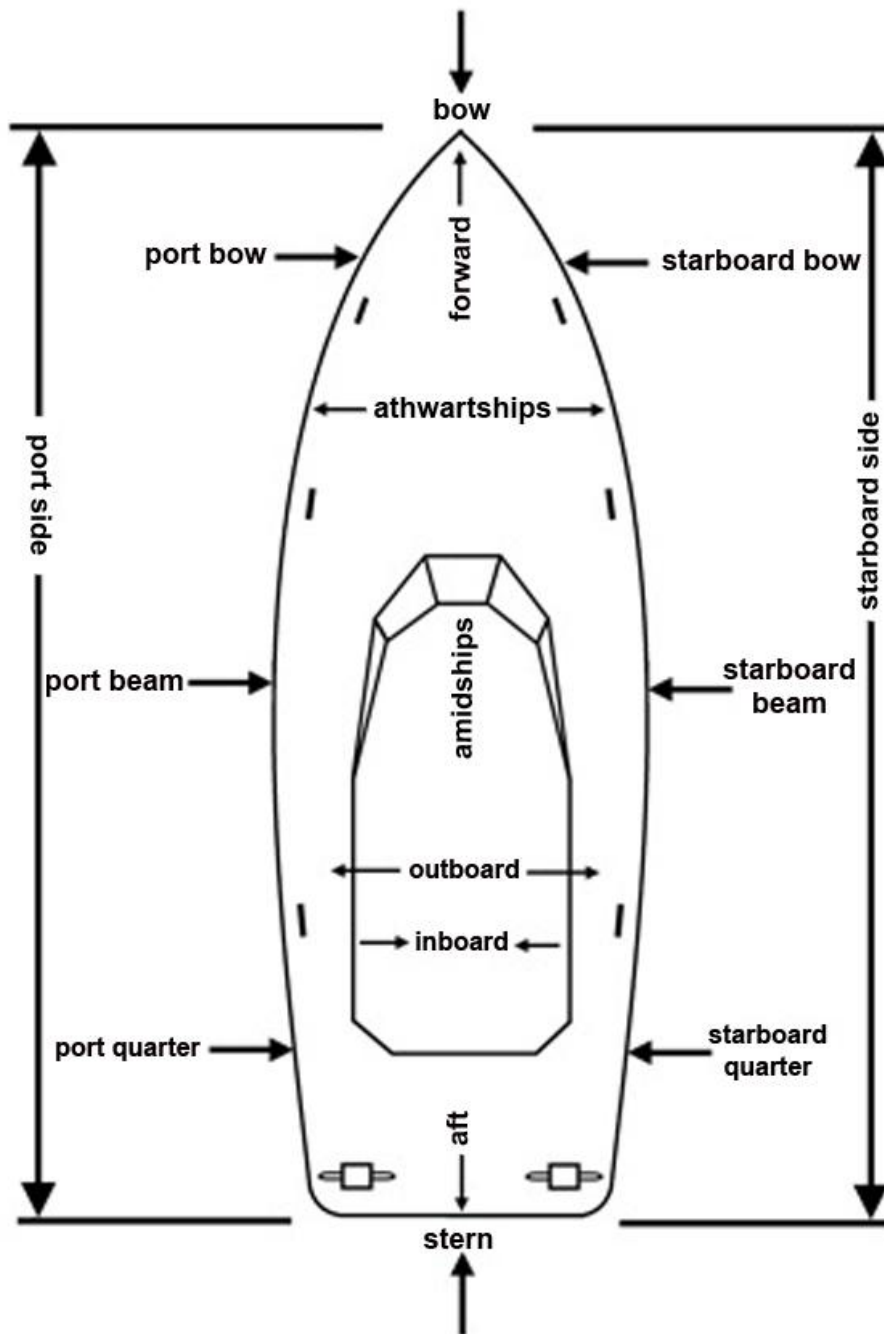
1	True
2	True
3	False
4	False
5	True
6	False
7	True
8	False
9	False
10	True

LEARNING ACTIVITY-4: ANSWER KEYS

Exercise 1:

1	False
2	False
3	True
4	False
5	True
6	False
7	False
8	True
9	True
10	False

Exercise 2:



MODULE EVALUATION ANSWER KEYS

1	port
2	starboard
3	sternpost
4	sports boat
5	chemical tanker
6	battleship
7	bow
8	service ships
9	hawsehole
10	amidships

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