

**T.C.
MİLLÎ EĞİTİM BAKANLIĞI**

DENİZCİLİK

**GEMİ YAPISI
(MESLEKİ İNGİLİZCE)**

ANKARA, 2016

-
- 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.

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DESCRIPTION

ALAN	Denizcilik
DAL	Güverte İşletme
MODÜLÜN ADI	Gemi Yapısı (Mesleki İngilizce)
MODÜLÜN SÜRESİ	40/18
MODÜLÜN AMACI	Birey/öğrenciye gemiler ve gemi yapısı ile ilgili İngilizce terimleri kullanmaya yönelik bilgi ve becerileri kazandırmaktır.
MODÜLÜN ÖĞRENME KAZANIMLARI	<ol style="list-style-type: none">1. Gemiler ile ilgili İngilizce terim ve cümlelerini kullanabileceksiniz.2. Geminin yapı elemanları ile ilgili İngilizce terim ve cümleleri kullanabileceksiniz.
EĞİTİM ÖĞRETİM ORTAMLARI VE DONANIMLARI	Ortam: İngilizce laboratuvarı Donanım: Projeksiyon, VCD,DVD,CD oynatıcı, bilgisayar, İngilizce denizcilik sözlüğü
ÖLÇME VE DEĞERLENDİRME	Modül içinde yer alan her öğrenme faaliyetinden sonra verilen ölçme araçları ile kendinizi değerlendireceksiniz.

INTRODUCTION

Dear Student,

Marine vehicles are used in various areas such as defending, transportation and the need for these vehicles are increasing day by day in today's world which is getting smaller and smaller. So the amount of vehicles navigating over the seas is getting higher also. It has become an obligation to establish a worldwide system to maintain vessel to vessel and vessel to land communication. The system established by International Association of Maritime has been called Standard Marine Communication Phrases. Knowledge of such patterns is of vital importance, especially in international waters. You will be able to find standard phrases for required for all communication types in this module.

LEARNING ACTIVITY-1

AIM

You will learn types of ships

RESEARCH

- Visit a port and observe what kind of ships are there

1. CLASSIFICATION OF SHIPS AND CONSTRUCTION ELEMENTS

A ship is a large boat which carries passengers or cargoes. The cargo indicates a particular load that is being transported. The ship, in its various forms, has developed its functions depending upon three main factors: type of cargo carried, type of construction and the area of operation. There are three kinds of vessel. These are: 1. Merchant ships 2. War ships 3. Yachts

After you graduate from a Merchant marine Academy, most of you will start working on merchant vessels. This will be your profession. A man of your profession; must first of all know all there is to know about his job and about the place he will be working in. Your working places will be ships or vessels. In this section, we will try to introduce to you the different types of merchant vessels.

Generally speaking, there are three kinds of vessels. These are:

- Warships
- Merchant vessels
- Yachts (Sport crafts)

Our subject is merchant vessels. There are many kinds of merchant vessels. These can be divided into four groups:

- Passenger ships
- Cargo vessels
- Auxiliary vessels
- Fishing vessels

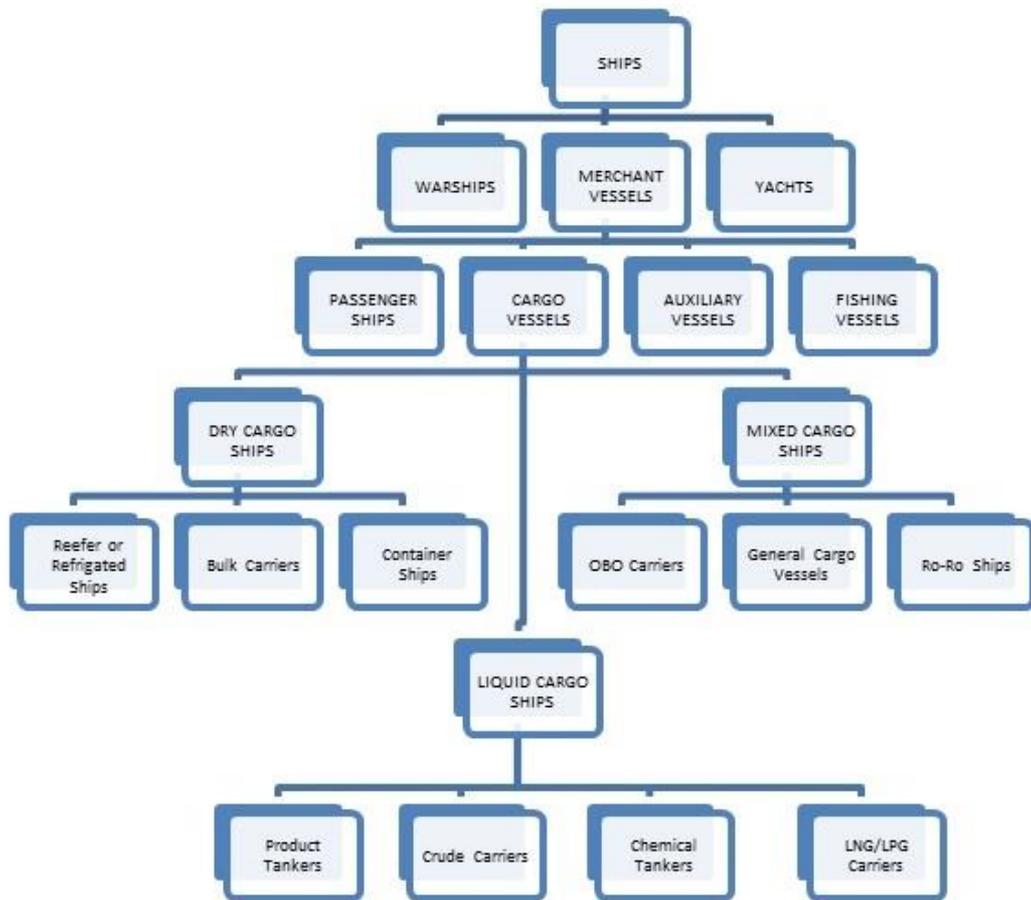


Figure 1.1: Ship Types

1.1. Cargo Ships

Cargo ships are classified into three groups:

Dry cargo ships: I- Reefer or Refrigerated Ships II- Bulk Carriers III- Container Ships

Liquid cargo ships: I- Product Tankers II- Crude Carriers III- Chemical Tankers IV- Gas Tankers

Mixed cargo ships: I- OBO carriers II- General cargo vessels III- Ro-Ro Ships

1.1.1. Dry Cargo Ships

Reefers or Refrigerated Ships:

A reefer ship is a refrigerated cargo ship; a type of ship typically used to transport perishable commodities which require temperature-controlled transportation, such as fruit, meat, fish, vegetables, dairy products and other foods. Cargo may be carried frozen or chilled depending upon its nature. Refrigerated ships are usually faster than general cargo ships.



Picture 1.1: Reefer

Bulk Carriers:

Bulk carriers are single deck vessels which transport single-commodity cargoes such as grain, sugar and ore in bulk. They have long, wide hatches, closed by steel covers which are designed to facilitate rapid loading and discharge of the cargo. They don't have a catwalk. The size of this type of vessel has also steadily increased and ore carriers have reached up to 250,000 tons deadweight. They have low silhouette and compact bridge superstructure. The loading and discharging of bulk cargoes are done by dockside cranes and grabs.



Picture 1.2: Bulk Carrier



Picture 1.3: Bulk Carrier

1.1.2. Liquid Cargo Ships

1.1.2.1. Crude Carriers

Crude Oil/Product Carrier is designed to carry clean oil ,motor sprit or kerosene or black oil such as fuel and diesel oil, from refineries to discharge ports from there it is spread out by road, rail way, pipeline or sea. These tankers are long, low outline, end three-island shape with one or twin funnels. Each island is connected by gangway or catwalk which helps crew members to walk safely in rough weather. These tankers are easily recognizable because of their catwalks.



Picture 1.4: Crude Oil Tanker



Picture 1.5: Crude Oil Tanker

1.1.2.2. Chemical Tankers

A huge variety of chemical cargo is now essential to be carried in bulk. A chemical tanker is a type of tanker ship designed to transport chemicals in bulk. Many of these cargoes are highly acidic and mismatched while others require close control of temperature and pressure. Safety and prevention of contamination are the most important issues about these tankers. To avoid corrosion of the structure, stainless steel is widely used for the tanks.



Picture 1.6: Chemical Tanker



Picture 1.7: Pipes of a chemical tanker

1.1.2.3. Gas Tankers

The liquefied gas carrier is distinguished from the normal oil tanker or bulk carrier by the elaborate deck fittings and pipe work and the horizontal pressure cylinders. This type of vessel is designed for the carriage of propane, butane and methane.



Picture 1.8: Gas tanker

1.1.3. Container Ships

Container ships are designed for the carriage of containers. In certain trades, there are advantages in packing cargo into containers of standard size at the place of manufacture. This cuts handling costs and speeds up delivery time. The majority of containers are designed for general dry cargo but specialized units can take liquid, powder or refrigerated cargoes.



Picture 1.9: Container Ship

1.1.4. Mixed Cargo Ships

OBO Carrier

The multi-purpose bulk carrier has been developed with special tanks to carry oil-bulk-ore. Some ship's hull designated to hold only one of these cargoes. OBO carrier's hull is divided for the bulk cargoes such as grain or ore and surrounded by oil tanks. There are also oil tanks between the floors of the holds and the ship's bottom.



Picture 1.10: OBO Carrier

General Cargo Vessels

General cargo vessels carry packaged items like chemicals, foods, furniture, machinery, motor- and military vehicles, footwear, garments, etc. They usually have four or five holds and one or two tweendecks which run for the full length of the ship so that different cargoes can be stowed for suitable access at the related ports of discharge and weight of the cargo can be easily distributed.



Picture 1.11: General cargo ship

1.1.5. RORO Ships

RORO ships are planned to carry wheeled vehicles. They have flat and unobstructed decks which reduce cargo handling costs. The ramp at the after or fore end allows vehicles to drive on or off the ship. Vehicles stay on board in their loaded position. Accommodations are provided for drivers are usually located additional passenger space.



Picture 1.12: RORO Ship



Picture 1.13: Vehicles are loading in a RORO ship

1.2. Service Ships

Service ships are divided into 5 groups:

- Dredgers
- Tugs
- Icebreakers
- Cable ships
- Supply vessel

1.2.1. Dredger

Dredger is a ship which is constructed with a different machine used to widen the size of harbors, rivers and canals.

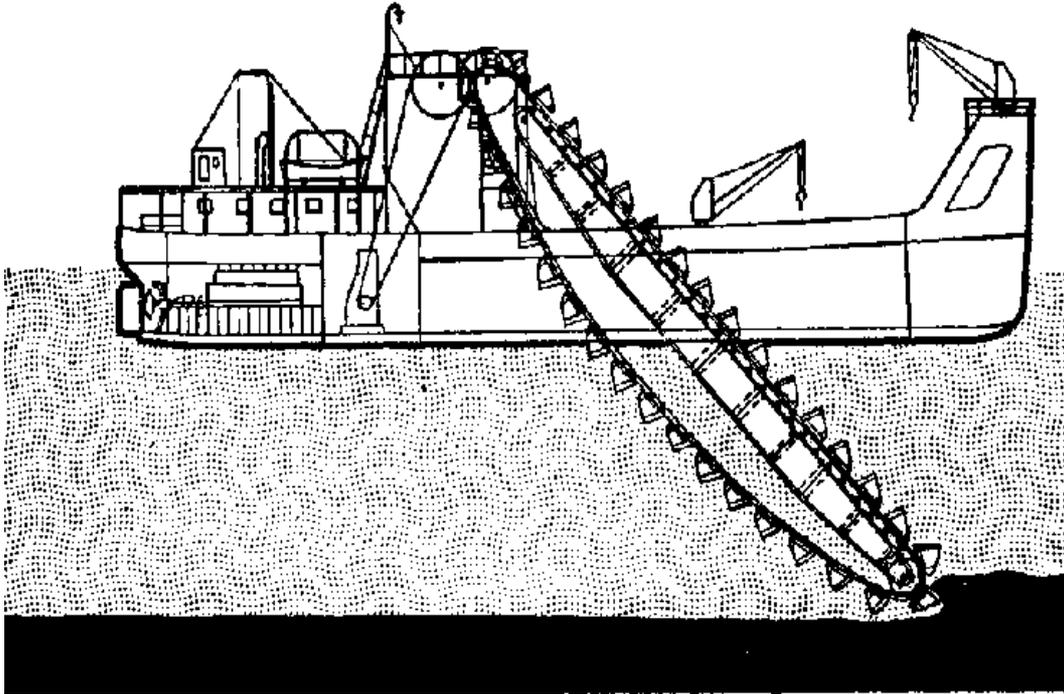


Figure 1.2: How a dredger works



Picture 1.14: Dredger

1.2.2. Tugs

Tugs are small vessels used for towing and helping larger ships to maneuver in curbed places.



Picture 1.15: Tug



Picture 1.16: Tug

1.2.3. Icebreaker

Icebreakers are designed to clear the way for other vessels in the ice covered water. They have thick shell plating and powerful propulsion plant which eases sailing through icy water.



Picture 1.17: Icebreaker Ship

1.2.4. Cable Ship

Cable ship is designed to lay and repair underwater data and communication cables.



Picture 1.18: Cable ship

1.2.5. Supply Vessel

A supply vessel is a multi-purpose service ship which provides assistance to carry stores, fuel-oil, drilling gear and personnel to the offshore units, oil platforms etc. She can also tow.



Picture 1.19: Supply vessel



Picture 1.20: Supply ship with a crane

1.3. Passenger Ships

A passenger ship is a ship whose primary function is to carry passengers from one point to another. The purpose of this carriage may be tourism or transportation.

Passenger ships include ferries, which are vessels for day or overnight short-sea trips moving passengers and vehicles (whether road or rail); ocean liners, which typically are passenger or passenger-cargo vessels transporting passengers and often cargo on longer line voyages; and cruise ships, which typically transport passengers on round-trips, in which the trip itself and the attractions of the ship and ports visited are the principal draw.



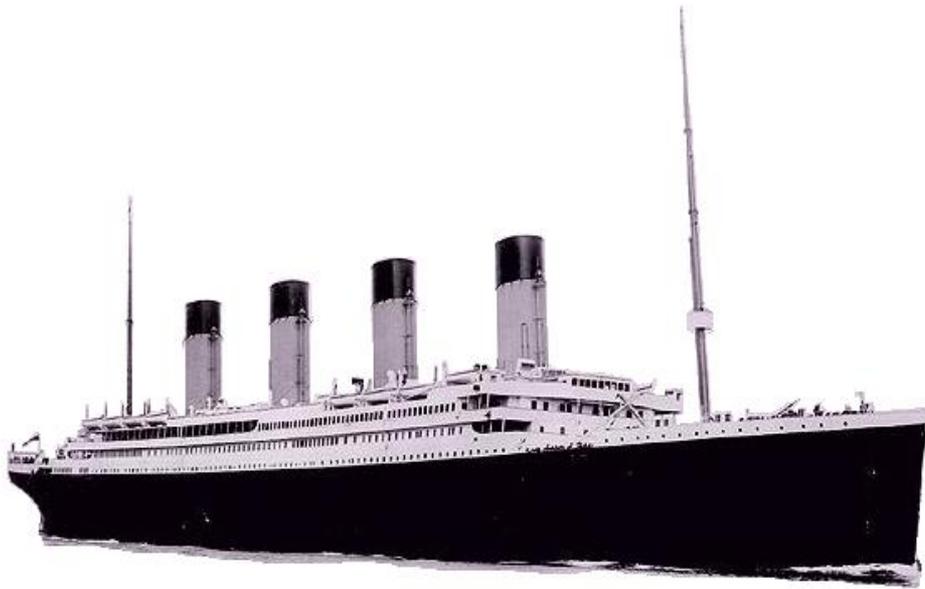
Picture 1.21: Passenger ship

An ocean liner is the traditional form of passenger ship. Once such liners operated on scheduled line voyages to all inhabited parts of the world. With the advent of airliners transporting passengers and specialized cargo vessels hauling freight, line voyages have almost died out. But with their decline came an increase in sea trips for pleasure, and in the latter part of the 20th century ocean liners gave way to cruise ships as the predominant form of large passenger ship.



Picture 1.22: Cruise ship

By convention and long usage, the size of civilian passenger ships is measured by gross tonnage, which is a measure of enclosed volume. Gross tonnage is not a measure of weight, although the two concepts are often confused. Weight is measured by displacement, which is the conventional means of measuring naval vessels. Often a passenger ship is stated to "weigh" or "displace" a certain "tonnage", but the figure given nearly always refers to gross tons.



Picture 1.23: The most famous ocean liner "Titanic"

1.4. Main Parts Of A Ship

There are two main parts of a ship: the hull and the machinery. The main structure of a ship is hull. The hull is divided into three areas: fore end, after end and amidships. The fore end is bow, the after end is stern. The right side of the ship is called the starboard and the other side is port. 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. Today most ships are built with double-hulled bottoms. Fuel and water are commonly stored in the spaces formed by the double bottoms.

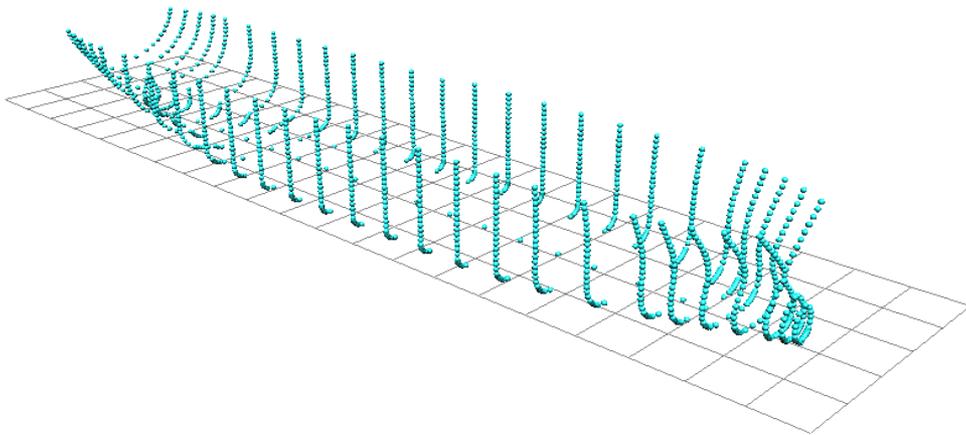


Figure 1.3: A 3D Hull of a ship

The Hull is the main body of the ship.
Stem is the very front end of the hull.
Stern is the very back end of the hull.
Fore Part is front third of the hull.
Midship Part is middle third of the hull.
After Part is back third of the hull.



Figure 1.4: Main parts of a ship

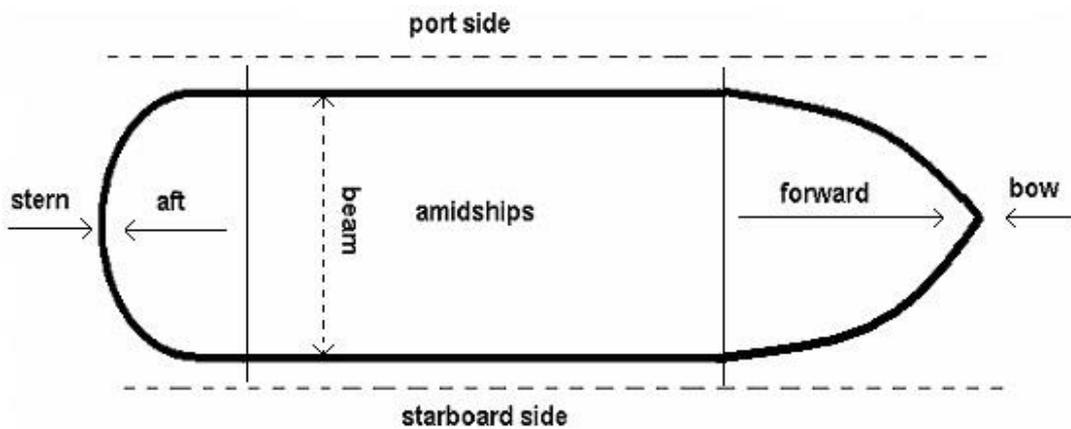


Figure 1.5: Main parts of a ship

Forward is direction towards the front of the ship (Stem).
Aft is direction towards the back of the ship (Stern).
Fore and Aft Line is any line which runs lengthways in the ship from end to end.
Fore and Aft Centre Line is the line joining the middles of the Stem to Stern.

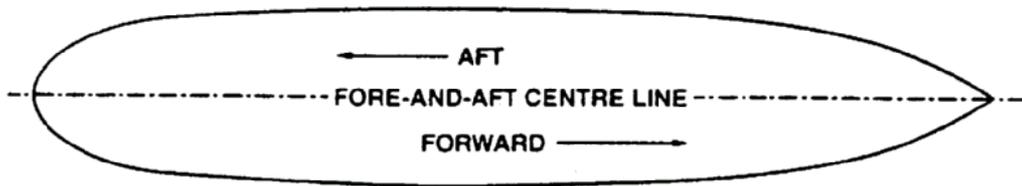


Figure 1.6: Forward and aft sides of a ship

Port Side is left hand side of the ship when facing forward.
Starboard Side is right hand side of the ship when facing forward

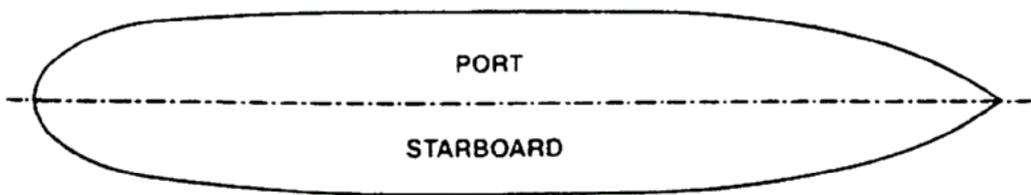


Figure 1.7: Port and starboard sides of a ship

1.4.1. Deck

The upper deck covers the holds and tanks. Deck equipment includes cargo handling, steering, anchoring and mooring arrangements.



Picture 1.24: Deck

1.4.2. Stern

The purpose of steering gear is to keep vessel on a steady course. A ship is steered by its rudder which is a flat plate at the ship's stern. The rudder is turned by steering engine which is located in the steering gear compartment.



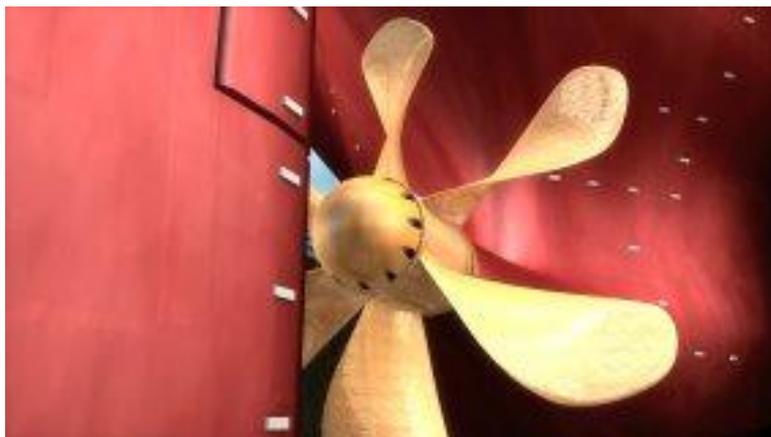
Picture 1.25: Stern of an ancient ship



Picture 1.26: Rudder

1.4.3. Propeller

The ship is moved through the water by one or more propellers. Propellers are made of cast iron, steel or manganese bronze for the resistance to corrosion. Shafts transmit the rotary motion of a ship's engines to its propellers. The engine is fitted in the engine room and most modern engine rooms are highly automated.



Picture 1.27: Propeller

1.4.4. Anchor

An anchor is a device, normally made of metal, used to connect a vessel to the bed of a body of water to prevent the craft from drifting due to wind or current.



Picture 1.28: Anchor

1.4.5. Accommodation

The ship is controlled from the bridge by the captain or navigation officers. Near the bridge there is funnel. The captain, officers and the crew are accommodated in cabins. The meals are prepared in galleys and laundry is done in the laundry room. Officers generally have single accommodation with en-suite shower/wc facilities. Accommodation for staff may be single or shared. Cabins allocated to crew are often shared subject to space availability. Officers usually eat in the officer's mess with waiter service. Crew members dine in the self-service or waiter service crew mess.



Picture 1.29: Crew's cabin



Picture 1.30: Bridge

APPLICATION ACTIVITY

Steps Of Process	Suggestions
<ul style="list-style-type: none"> ➤ Draw a ship picture ➤ Put the English meaning for main parts of the ship 	<ul style="list-style-type: none"> ➤ Use technical English dictionary.

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 remember main parts of ships?		
2. Do you know ships' types?		
3. Can you pronounce ships' names correctly?		

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

Complete these sentences.

- A. Cargo ships are divided into _____ parts.
- B. Bulk carriers are _____
- C. Container ships are designed for _____
- D. Crude Oil/Product Tanker is designed for _____
- E. Gas tankers are designed for _____
- F. RORO ships are planned to _____
- G. Dredger is a ship which is _____
- H. Tugs are small vessels used for _____
- I. Icebreakers are designed to _____
- J. Cable ship is designed to _____

LEARNING ACTIVITY-2

AIM

At the end of this activity, you will have learnt the knowledge about the main ship structure components.

RESEARCH

Make a research about the ships and their structural components on the internet.

2. MAIN SHIP STRUCTURE COMPONENTS

2.1. The Ship Components In The Hull

- **Access holes** cut in ship's structure to permit entering or leaving various compartments.



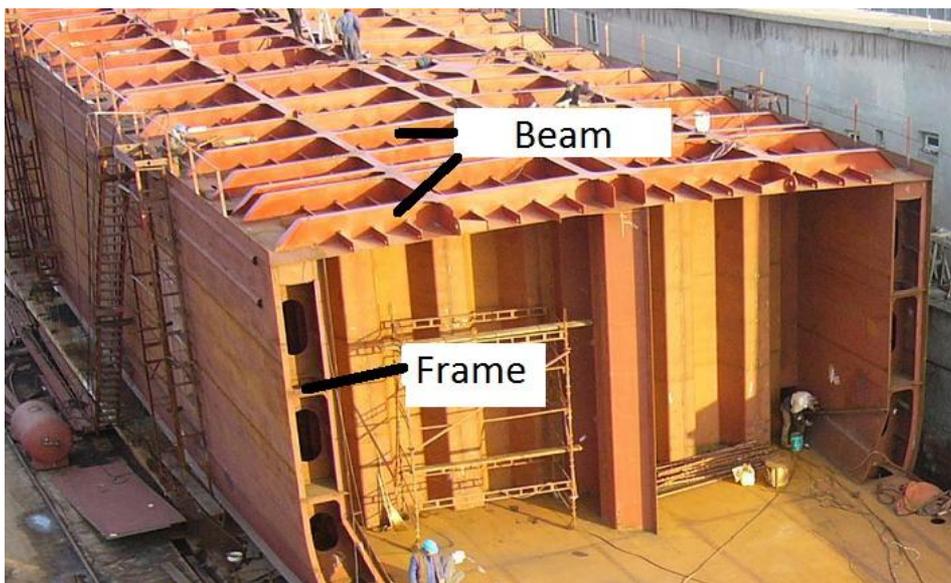
Picture 2.1: Access holes

- **Bilge keel** is a fin fitted on the bottom of a ship at the bilge to reduce rolling. It commonly consists of a plate running fore and aft attached to the shell plating by angle bars. It materially helps in steadying a ship and does not add much to the resistance to propulsion.



Picture 2.2: Bilge keel

- **Beam:** An athwart ship member supporting a portion of a deck. Also, the width of the ship.
- **Frame:** Supporting skeleton of a vessel.



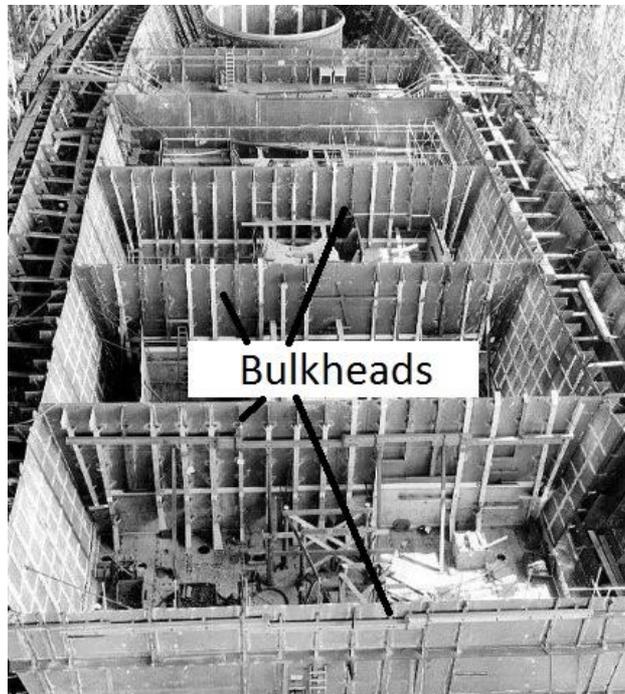
Picture 2.3: Beam & frame

- **Bulbous bow:** Bows constructed with a bulb shaped projection rising from the bottom.



Picture 2.4: Bulbous bow

- **Bulkhead:** A vertical partition corresponding to the wall of a room, extending either athwart ships or fore and aft. A steel partition in a ship.



Picture 2.5: Bulkheads

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



Picture 2.6: Double bottom tanks

- **Keel:** The longitudinal backbone of a vessel supporting the frames.

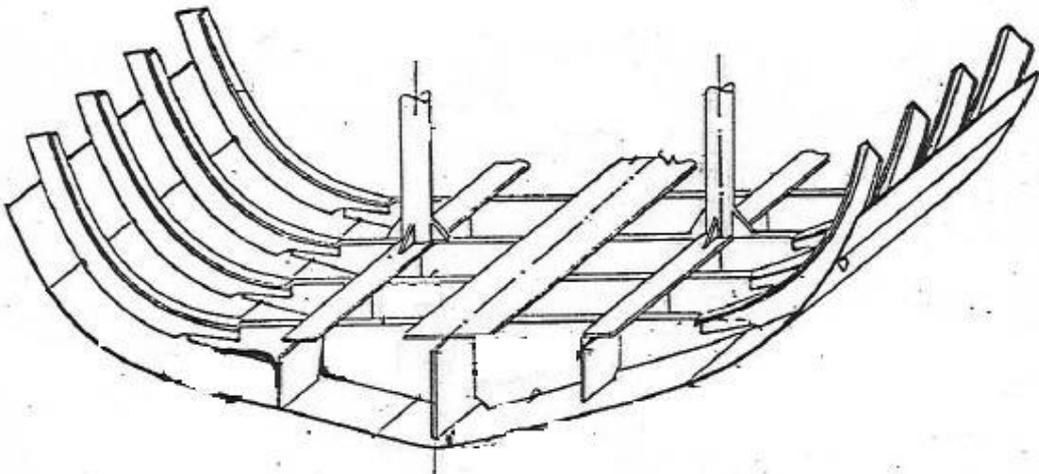
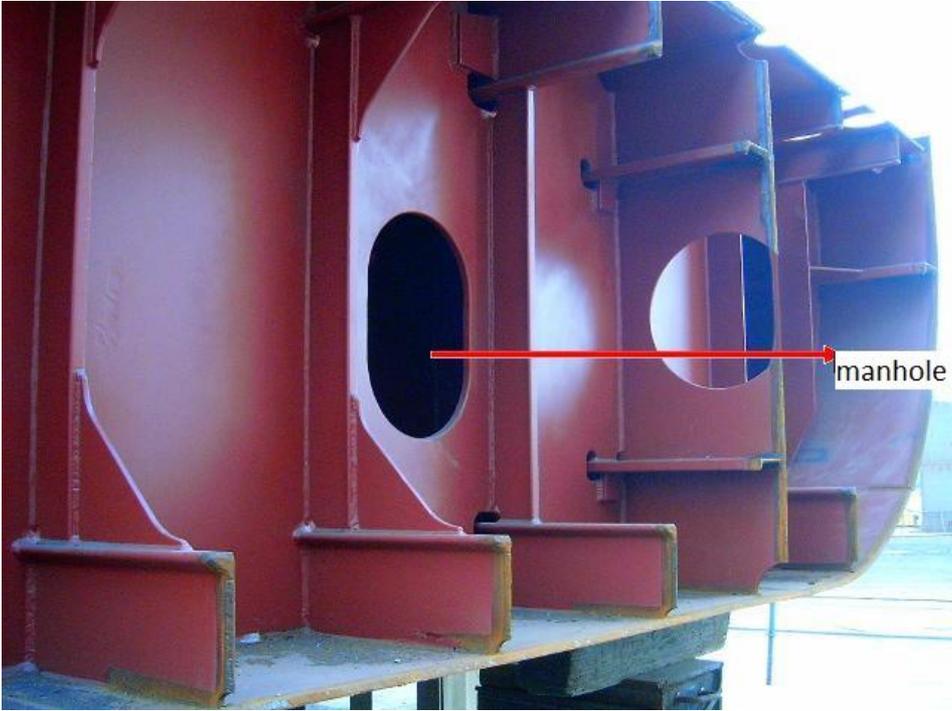


Figure 2.1: Keel

- **Manhole:** A hole cut in a bulkhead, tank top, etc., to allow the passage of a man.



Picture 2.7: Manhole

APPLICATION ACTIVITY

Steps Of Process	Suggestions
➤ Visit a shipyard and take notes of names what you see.	➤ Ask engineers for the parts you don't know.

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
➤ Can you recognize the ship components in the hull?		
➤ Can you say the meaning of beam?		
➤ Can you define the bulkhead structure?		
➤ Can you define the keel?		
➤ Can you say the functions of the manhole and access hole?		

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

Complete these sentences.

- A. Beam is an athwart ship member _____ a portion of a deck.
- B. Frame supports skeleton of _____.
- C. Manhole is a hole to allow _____.
- D. _____ is the longitudinal backbone of a vessel supporting the frames.
- E. _____ is a fin fitted on the bottom of a ship at the bilge to reduce rolling.

MODULE EVALUATION

Find these words in the puzzle.

REEFER-BULKCARRIER-CONTAINERSHIP-OILTANKER-
CHEMICALTANKER-GASTANKER-OBOCARRIER-ROROSHIP-DREDGER-TUG-
ICEBREAKER-CABLESHIP-PASSENGERSHIP-CRUISESHIP

R	E	E	F	E	R	Q	W	U	O	H	F	G	J	F	D	G	H	J	G
R	C	B	U	L	K	C	A	R	R	I	E	R	Q	E	T	Y	U	G	A
Y	O	Q	O	P	R	P	M	N	B	V	C	X	D	E	W	G	J	H	S
J	N	A	I	O	C	H	E	M	I	C	A	L	T	A	N	K	E	R	T
G	T	Z	L	U	O	E	R	O	R	O	S	H	I	P	W	E	R	Y	A
D	A	X	T	Y	B	D	Q	T	Y	J	K	L	G	D	G	H	O	P	N
L	I	S	A	T	O	C	E	Y	D	P	O	I	U	Y	T	R	Q	S	K
H	N	W	N	R	C	V	D	U	R	A	S	D	F	G	H	J	L	V	E
H	E	E	K	R	A	B	X	I	E	Y	D	S	D	B	M	N	X	Q	R
F	R	D	E	N	R	T	U	G	D	W	S	X	C	D	E	R	F	V	H
Q	S	C	R	G	R	J	X	E	G	Q	C	A	B	L	E	S	H	I	P
Z	H	V	T	R	I	K	C	F	E	O	L	I	K	J	H	Y	U	T	G
X	I	B	G	E	E	I	Y	F	R	L	I	E	D	F	Y	U	R	G	K
X	P	G	B	D	R	Y	Y	C	R	U	I	S	E	S	H	I	P	X	Z
C	I	C	E	B	R	E	A	K	E	R	Q	F	G	H	Y	U	O	I	Z
F	T	P	A	S	S	E	N	G	E	R	S	H	I	P	X	C	Q	N	M

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, please contact your teacher and pass to the next module.

ANSWER KEY

LEARNING ACTIVITY 1

Complete these sentences.

- A. Cargo ships are divided into 3 parts.
- B. Bulk carriers are single deck vessels which transport single-commodity cargoes such as grain, sugar and ore in bulk.
- C. Container ships are designed for the carriage of containers.
- D. Crude Oil/Product Tanker is designed for carry clean oil ,motor sprit or kerosene or black oil such as fuel and diesel oil, from refineries to discharge ports from there it is spread out by road, rail way, pipeline or sea
- E. Gas tankers are designed for carry gas.
- F. RORO ships are planned to carry wheeled vehicles.
- G. Dredger is a ship which is constructed with a different machine used to widen the size of harbors, rivers and canals
- H. Tugs are small vessels used for towing and helping larger ships to maneuver in curbed places.
- I. Icebreakers are designed to clear the way for other vessels in the ice covered water.
- J. Cable ship is designed to lay and repair underwater data and communication cables.

LEARNING ACTIVITY 2

Complete these sentences.

- A. Beam is an atwhart ship member supporting a portion of a deck.
- B. Frame supports skeleton of a vessel.
- C. Manhole is a hole to allow to passage of a man.
- D. Keel is the longitudinal backnote of a vessel supporting the frames.
- E. Bilge keel is a fin fitted on the bottom of a ship at the bilge to reduce rolling.

GENERAL REVISION

Find these words in the puzzle.

**REEFER-BULKCARRIER-CONTAINERSHIP-OILTANKER-
CHEMICALTANKER-GASTANKER-OBOCARRIER-ROROSHIP-DREDGER-
TUG-ICEBREAKER-CABLESHIP-PASSENGERSHIP-CRUISESHIP**

R	E	E	F	E	R														G
	C	B	U	L	K	C	A	R	R	I	E	R							A
	O		O																S
	N		I		C	H	E	M	I	C	A	L	T	A	N	K	E	R	T
	T		L		O		R	O	R	O	S	H	I	P					A
	A		T		B														N
	I		A		O				D										K
	N		N		C				R										E
	E		K		A				E										R
	R		E		R	T	U	G	D										
	S		R		R				G		C	A	B	L	E	S	H	I	P
	H				I				E										
	I				E				R										
	P				R			C	R	U	I	S	E	S	H	I	P		
	I	C	E	B	R	E	A	K	E	R									
		P	A	S	S	E	N	G	E	R	S	H	I	P					

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