

UNIT 1

SHIPPING

READING COMPREHENSION

HOW MERCHANT SHIPS OPERATE

Merchant ships are designed to carry cargo.

Some are also designed to carry passengers.

Nowadays most merchant ships are built to carry cargo. A few still carry passengers.

Merchant vessels can operate in the following three basic ways.

THEY CAN OPERATE AS LINERS. Liners are employed on regular routes on a fixed timetable. A list of their arrival and departure dates is published in advance. They sail whether they are full or not.

THEY CAN OPERATE AS TRAMPS. Tramps do not sail on regular routes.

They do not keep to a fixed timetable. They are employed in all parts of the world where there is cargo for them to carry. **A LARGE NUMBER OF MERCHANT SHIPS OPERATE AS SPECIALIZED VESSELS.** These are designed to carry a particular type of cargo.

GRAMMAR

QUANTIFIERS

Quantifiers, or amount words, indicate the approximate quantity or amount of the noun they qualify or represent.

STUDY THE TABLE BELOW WHICH GIVES THE MOST COMMONLY USED QUANTIFIERS.

| AMOUNT | COUNTABLES | UNCOUNTABLES |
|------------------------|---|---|
| a total amount | all | all |
| an almost total amount | most | most |
| a large amount | many a lot (of) a large number (of) | much a lot (of) a large amount (of) |
| a small amount | some several a few | some a little |
| a very small amount | few | little |
| zero amount | no none | no none |

STUDY THE FOLLOWING POINTS AND EXAMPLES:

1- ALL, MOST, MANY, MUCH, SOME, SEVERAL, (a) FEW, (a) LITTLE, can be used without a noun to avoid repetition.

e.g. All liners carry passengers or cargo.

All follow regular routes.

Some cargo is carried in holds. Some carried on deck.

Note: MUCH is normally used in only negative and interrogative sentences.

e.g. He had not much money so he walked into town. Is there much cargo to be unloaded?

2- When A LARGE NUMBER, A LARGE AMOUNT and A lot are followed by a noun, OF must be used.

e.,g. A large number of merchant ships carry bulk cargo.

3- No and NONE are used as follows:

e.g. No tankers can carry passengers. NONE should discharge oil into the sea.

4- There is a POSITIVE / NEGATIVE contrast between A LITTLE and LITTLE and between A FEW and FEW.

Study the differences in meaning in these sentence pairs:

There was a little time before the ship sailed, so he stayed ashore longer.

There was little time before the ship sailed, so he went on board immediately.

A few people were sitting on deck, because the sun was shining.

Few people were sitting on deck, because the wind was cold.

EXERCISE 1. Complete the table below to show which quantifiers can be used with the COUNTABLE noun ‘Passengers’ and the UNCOUNTABLE noun ‘money’. Two have been done for you. If the noun cannot be used with a particular quantifier, you must leave a blank space.

| Quantifier | Countable noun | Uncountable noun |
|-------------------|----------------|------------------|
| several | | |
| no | | |
| a lot of | | money |
| few | | |
| much | | |
| a large number of | | |
| a little | | |
| all | | |
| many | passengers | |

| Quantifier | Countable noun | Uncountable noun |
|-------------------|----------------|------------------|
| a large amount of | | |
| a few | | |
| some | | |
| most | | |
| little | | |

EXERCISE 2. Choose a suitable quantifier and either ‘passengers’ or ‘money’ to complete these sentences:

- travel by cargo liner.
- is needed to operate a shipping fleet.
- enjoy being at sea when it is rough.
- are allowed down in the engine room.
- on board ship should be kept in a safe place.

APPLIED TERMINOLOGY

(A) Terms relating to shapes.

The shapes of objects can be referred to by using a number of methods:

(1) By using the names of geometric figures.

e.g. square (square) - rectangle (rectangular) - triangle (triangular) - circle (circular) - semicircle (semicircular) - ellipse / oval (elliptical / oval) - cube (cubic) - cylinder (cylindrical) - pyramid (pyramidal) - sphere (spherical) - hemisphere (hemispherical) - cone (conical) .

(2) By using letters of the alphabet.

e.g. a beam shaped like the letter I=an I - beam. a pipe shaped like the letter S= an S- shaped pipe

(3) By using objects with well - known shapes

e.g. an eye a mushroom a needle a heart a kidney a finger

(B) Terms relating to Measurement.

We can describe the length of an object using four different patterns:

- a) The beam is three metres in length
- b) The beam has a length of three metres.
- c) The length of the beam is three metres.
- d) The beam is three metres long.

WIDTH / BREADTH, HEIGHT, DEPTH and THICKNESS are described using the same patterns.

PADIUS - DIAMETER - CIRCUMFERENCE are described using patterns a,b,c.

EXERCISE 1. Complete this table.

| NOUN | ADJECTIVE |
|-------------|------------------|
| WIDTH | |
| BREADTH | |
| HEIGHT | |

| NOUN | ADJECTIVE |
|-------------|------------------|
| DEPTH | |
| THICKNESS | |

NEW WORDS TO STUDY

| | |
|----------------|---|
| ARRIVAL | : COMING TO A PLACE. |
| BOARD | : SHIP'S SIDE. |
| BREADTH | : DISTANCE FROM SIDE TO SIDE / WIDTH. |
| BULK | : ARCHAIC. |
| CARGO | : THE GOOD, MERCHANDISE OR WHATEVER IS CONVEYED. |
| DECK | : A PLATFORM IN A SHIP EXTENDING WITHIN THE HULL FROM SIDE TO SIDE AND FROM STERN TO STERN. |
| ENGINE | : MACHINE WITH MOVING PARTS THAT CONVERTS ENERGY SUCH AS HEAT, ELECTRICITY INTO MOTION. |
| HEIGHT | : MEASUREMENT FROM THE BOTTOM TO THE TOP OF A THING. |
| LINERS | : LARGE PASSENGER OR CARGO SHIP TRAVELLING ON A REGULAR ROUTE. |
| MERCHANT SHIPS | : SHIPS USED FOR TRANSPORTING GOODS. |
| OIL | : ANY OF VARIOUS THICK SLIPPERY LIQUIDS - PETROLEUM. |
| PASSENGER | : PERSON TRAVELLING IN A CAR, SHIP. |
| PIPE | : TUBE THROUGH WHICH LIQUIDS OR GASES CAN FLOW. |
| ROUTE | : WAY TAKEN OR PLANNED TO GET FROM ONE PLACE TO ANOTHER. |
| SAIL | : TRAVEL ON WATER IN A SHIP USING SAILS OR ENGINE POWER. |
| TANKER | : SHIP OR AIRCRAFT FOR CARRYING PETROLEUM. |
| TIME TABLE | : LIST SHOWING THE TIME AT WHICH CERTAIN EVENTS WILL TAKE PLACE. |
| TRAMP STEAMER | : CARGO SHIP THAT DOES NOT TRAVEL ON |

A REGULAR ROUTE.
VESSEL : SHIP OR BOAT.
WIDTH : MEASUREMENT FROM SIDE TO SIDE.



UNIT 2

SHIP TYPES

READING COMPREHENSION

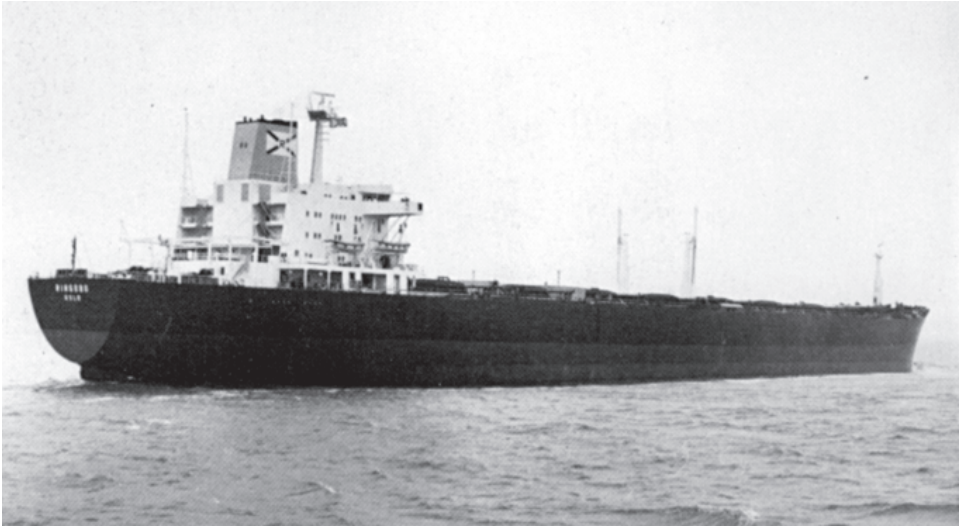
TYPES OF MERCHANT SHIP

Merchant ships can be classified according to what they carry. Most are designed to carry cargo, but a few still carry passengers.

Cargo ships can be divided into two basic types. One type carries dry Cargo, The other carries liquid cargo. Multi - deck vessels are a traditional type of dry cargo ship. Their holds are divided horizontally by one or two ‘tween decks. Dry bulk cargo is carried in bulk carriers. These do not have ‘tween decks. Container ships are the most modern type of dry cargo carrier. They carry containers of standard dimensions. Fruit, meat and dairy produce are carried in refrigerated ships. Oil tankers are the most common type of liquid



Turbine tanker equipped to refuel ships at sea.



OBO Carrier



Container vessel

cargo carrier. They are often very large. Two other types of liquid bulk carrier of growing importance are liquefied natural gas (LNG) carriers and chemical carriers.

In comparison with cargo vessels, passenger ships are fewer in number and

type, Passenger liners are the traditional type of passenger ship. Nowadays their number has been greatly reduced. Cruise ships are another type of passenger vessel. These are often converted passenger liners. Ferries are the most common type of passenger vessel. Many of them are also designed to carry vehicles.

GRAMMAR

(A) ARTICLES

THE, A, AN, ZERO ARTICLE

Nouns in English can be preceded by the definite article (THE) or by the indefinite article (A,AN) or by no article at all.

The definite article (THE) is used when the noun (singular or plural, countable or uncountable) being referred to has a particular rather than a general reference, that is, when we can identify what is being referred to.

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

1. When the noun has been mentioned already.
e.g. Colliers are designed to carry coal. The coal is carried in bulk.
2. When words following the noun define which particular one it is.
e.g. Ships of all types use this port; The ship over there is an LNG carrier.
3. When there is only one of the noun in the world, or only one in the context being referred to.
e.g. The sun, the equator (with reference to the earth)
The bridge, The Captain (with reference to a ship)
This quality of uniqueness is also present with superlatives.
e.g. The largest ship, the most important port.

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 ship in the port.

When the noun is plural, or when the noun is used as an uncountable

noun, no article is used.

e.g. There were cadets on board.

There was oil floating on the water.

EXERCISE. Write out the paragraph below using A, AN, THE or no article as appropriate:

..... largest type of cargo ship is tanker. tankers are designed to carry liquid cargo such as oil. cargo is pumped directly into holds by powerful pumps. holds are constructed as tanks. tanks are subdivided into central tank, two wing tanks and expansion tank. expansion tank allows oil to expand in hot weather.bridge superstructure and engine room are situated aft to leave more room for cargo. bridge is connected to forecastle by catwalk. tankers which are over 500,000 dwts are known as ultra large crude carriers (ULCC_s)

(B) LOGICAL CONNECTIVES

Here are more connecting words for Joining statement:

BECAUSE, THEREFORE, HOWEVER.

study how they are used in these examples:

1. **BECAUSE** gives the reason or cause.

(a) Multi - deck vessels have'tween decks.

(b)' Tween decks help stowage.

(a) + (b) Multi - deck vessels have' tween decks **BECAUSE** these help stowage.

2. **THEREFORE** expresses consequence or result.

(a) Ships are designed for many purposes.

(b) Their type and size vary considerably.

(a) + (b) Ships are designed for many purposes, **THEREFORE** their type and size vary considerably.

3. **HOWEVER** introduces a qualification or concession.

(a) Passenger liners carry passengers.

(b) Some carry a large amount of cargo as well.

(a) + (b) Passenger liners carry passengers; HOWEVER, some carry a large amount of cargo as well.

EXERCISE: Now Join these pairs of sentences using BECAUSE, THEREFORE, HOWEVER, as appropriate:

- (a) Multi - deck vessels usually carry general cargo.
Some carry containers as well.
- (b) Passenger liners have high superstructures.
They need a large number of decks.
- (c) Many ferries are designed to carry vehicles. They have doors at the bows or stern.
- (d) Cargo ships are usually designed to carry dry or liquid cargo.
OBO (Oil, Bulk, Ore) ships are designed to carry both.
- (e) Bulk carriers carry large quantities of loose cargo.
They have large unobstructed holds.
- (f) Passenger liners often operate as cruise ships for part of the year.
There is not always enough business for them on liner routes.

APPLIED TERMINOLOGY

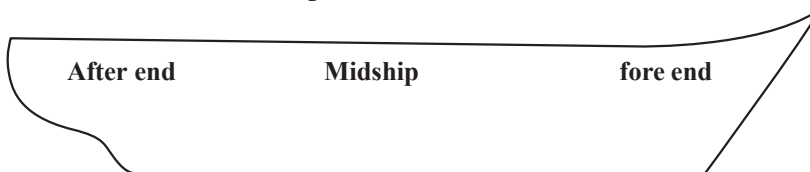
A) Terms relating to a ship's hull.

The main body of a ship is called the HULL.



Hull

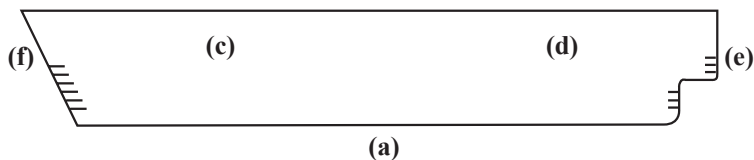
The hull is divided into three parts:



The foremost part is called the BOW and the rearmost part is called the STERN.

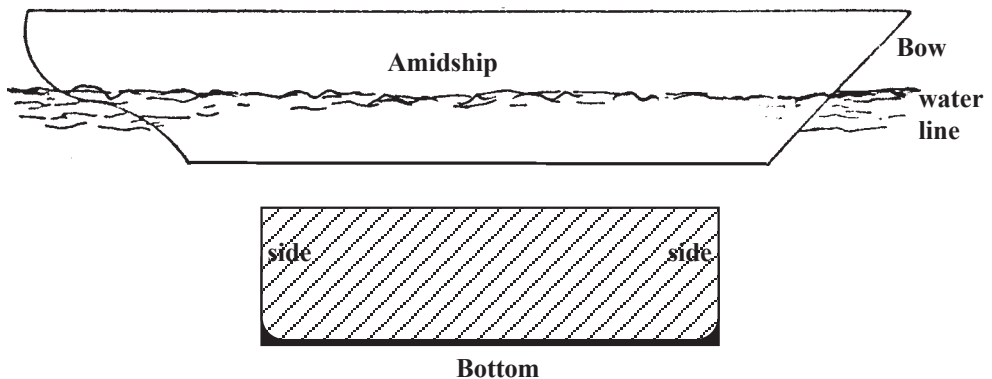


EXERCISE: Cover the diagrams above and label and diagram below where indicated.



B) Terms relating to the hull surface.

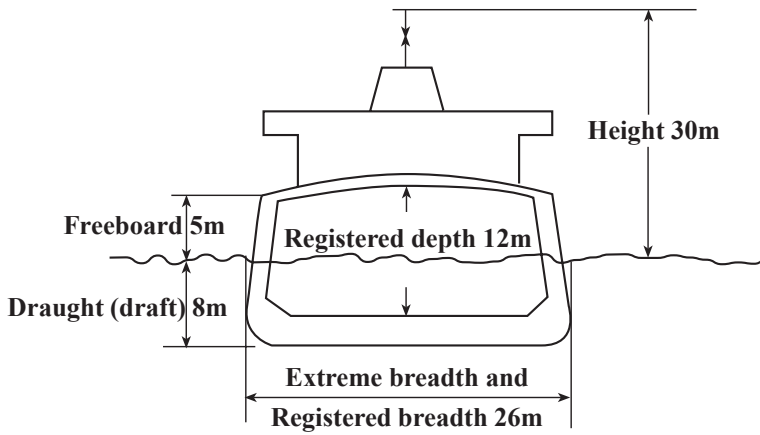
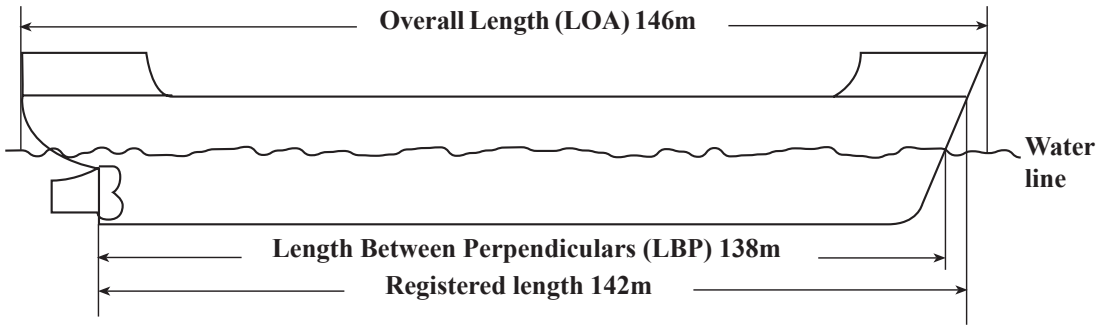
The hull surface may be referred to using the following terms.



PORT SIDE : When standing in a ship and facing the bow, the left - hand side is called the port side and the right-hand side is called starboard side.

C) Terms relating to measurement.

Study the diagrams below showing some important ship dimensions:



(Note: Draught (draft), freeboard, height depend on load carried. Draught may be expressed verbally)
 e.g. (The ship draws 8 meters.)

NEW WORDS TO STUDY

| | |
|-----------|--|
| BOW | : THE FORWARD PART OF A SHIP. |
| BRIDGE | : A STRUCTURE AMIDSHIPS ABOVE THE MAIN DECK OF A SHIP. |
| CADET | : ONE UNDERGOING TRAINING FOR OFFICER SHIP. |
| CAPTAIN | : A RANKING NAVAL OR MARITIME OFFICER. |
| CATWALK | : A RAISED GANGWAY THAT RUNS THE LENGTH OF A TANKER AND GIVES PASSAGE FORWARD AND AFT. |
| COAL | : A PIECE OF CARBON OR CHARED WOOD. |
| COLLIER | : A SHIP EMPLOYED IN TRANSPORTING COAL. |
| CONTAINER | : METAL COMPARTMENT IN WHICH FREIGHT IS PLACED FOR CONVENIENCE OF MOVEMENT. |
| CRUISE | : TO SAIL ABOUT TOUCHING AT A SERIES OF PORTS AS DISTINGUISHED FROM VOYAGING TO A SET DESTINATION. |
| DRAFT | : THE DEPTH OF WATER A SHIP DRAWS. |
| DRAUGHT | : THE DEPTH OF WATER A SHIP DRAWS. |
| FERRIES | : BOATS, HOVERCRAFTS, ... THAT CARRIES PEOPLE AND GOOD ACROSS A STRETCH OF WATER. |
| HULL | : BODY OF A SHIP. |
| MIDSHIP | : AMIDSHIP, HALF WAY BETWEEN THE BOWS AND ASTERN OF A SHIP. |
| PORT | : THE SIDE OF A SHIP THAT IS ON THE LEFT WHEN ONE IS FACING FORWARD. |

STERN : BACK END OF A SHIP OR BOAT
STOWAGE : SPACE USED OR AVAILABLE FOR STOWING.
SUPERSTRUCTURE : STRUCTURE BUILT ON TOP.
VEHICLES : CONVEYANCE SUCH AS A CAR, LORRY.

UNIT 3

SHIP CONSTRUCTION

READING COMPREHENSION

BUILDING SHIPS

Ships cost a lot of money to build. They are bound by various constraints such as the cost of different designs, what is technically possible, what cargoes they are most likely to carry.

A modern shipyard is designed for building ships as cheaply and quickly as possible. Many of the old processes have disappeared or been combined into one fully mechanized process. Machines are now used instead of men. Today, ships can be built in about sixteen months and costs can be kept to a minimum.

Who designs ships? Ships are designed by naval architects. The largest shipping companies have their own naval architects. In Europe and Japan, shipyards employ naval architects to design a ship for a customer, or offer basic designs which can be varied to suit the customer's needs. Shipowners may also go to independent firms of shipping consultants and ask their naval architects to design a ship for them.

When shipowners decide to order a new ship, they tell the naval architect the cargo they want the ship to carry. They also tell him what routes the ship will ply and the desired speed. They put limits on the ship's dimensions and on the price that they are prepared to pay. The ship must also comply with the rules of the classification society and international regulations.

Economic, engineering and safety factors all govern the design of a ship.

Shipbuilding



Assembly of a super tanker in the building dock.



(A) PASSIVES

Study these pairs of sentences:

- | | |
|--|---------|
| 1- Naval architects design ships. | Active |
| Ships are designed by naval architects. | passive |
| 2- Men built the tanker in six months. | Active |
| The tanker was built in six months. | passive |
| 3- First, I measured the piece of metal. | Active |
| First, the piece of metal was measured. | passive |

In each pair of sentences the meaning is similar, but the object in the active sentence has become the subject in the passive one.

(B) TIME RELATORS SEQUENCE

When we want to show that processes or events happen one after the other , we use sequence words or time clauses.

1- SEQUENCE WORDS.

Some common sequence words are: **FIRST, THEN, NEXT, AFTER THAT, AFTERWARDS, LATER, EVENTUALLY, FINALLY.** These are usually put at the beginning of the process or event that they introduce.

e.g. **FIRST**, I want to college **THEN**, I went to sea

These events may be described in a series of sentences, or they may be linked by a semi - colon (;), or the connective **AND**. **EXCEPT** for **FIRST** and **FINALLY** they may be used in any order.

EXERCISE. Study the sentences below which show the sequence of events in the building of a ship. Write them out in a paragraph using the above sequence words to introduce each stage in a sentence.

- 1st - The plans are completed by the naval architects.
- 2 nd - The plans are approved by the classification society.
- 3rd - The parts of the ship are prepared.

- 4th - The parts of the ship are put together.
- 5th - The ship is launched.
- 6th - The ship is fitted out and completed.
- 7th - The ship goes for sea trials.
- 8th - The ship is handed over to her new owners.

2- TIME CLAUSES

Time clauses can begin with AFTER and BEFORE.

Study these examples, which show how THE first two sentences in the above description can be joined together using time clauses.

AFTER the plans are completed by the naval architects, they are approved by the classification society.

BEFORE the plans are approved by the classification society, they are completed by the naval architects.

This time we are joining the first two sentences to form one sentence; the plans in the time clause becomes they in the main clause.

EXERCISE. Using the events in the previous exercise, complete these sentences:

- (a) After the parts of the ship are prepared
- (b), she is fitted out and completed.
- (c), she goes for sea trials.

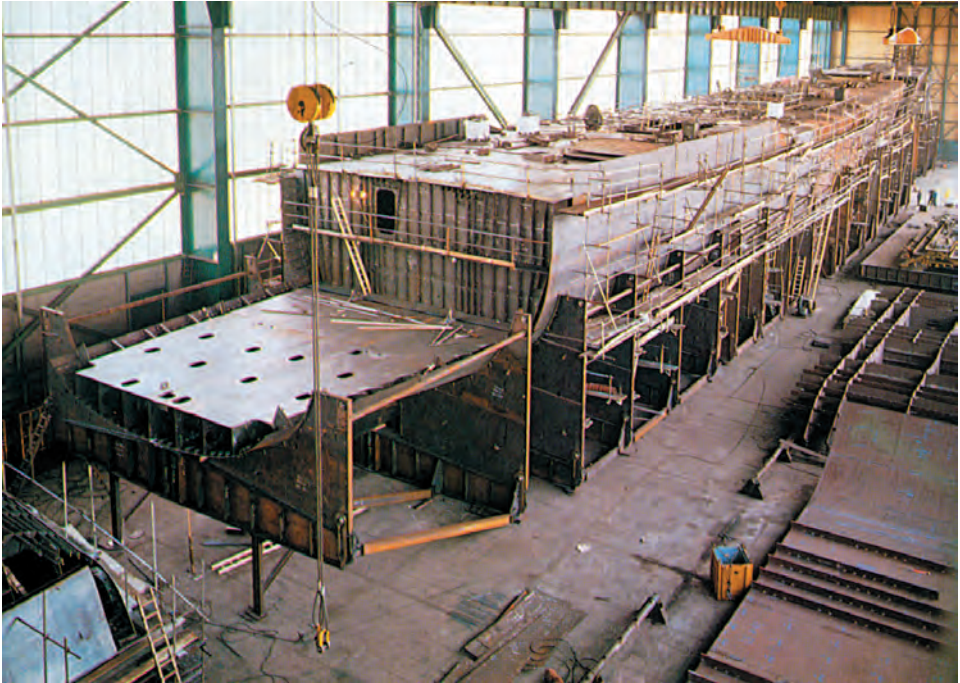
3. REDUCED TIME CLAUSES.

When the subject of the time clause is the same as the subject of the main clause, the time clause can be reduced in the following way:

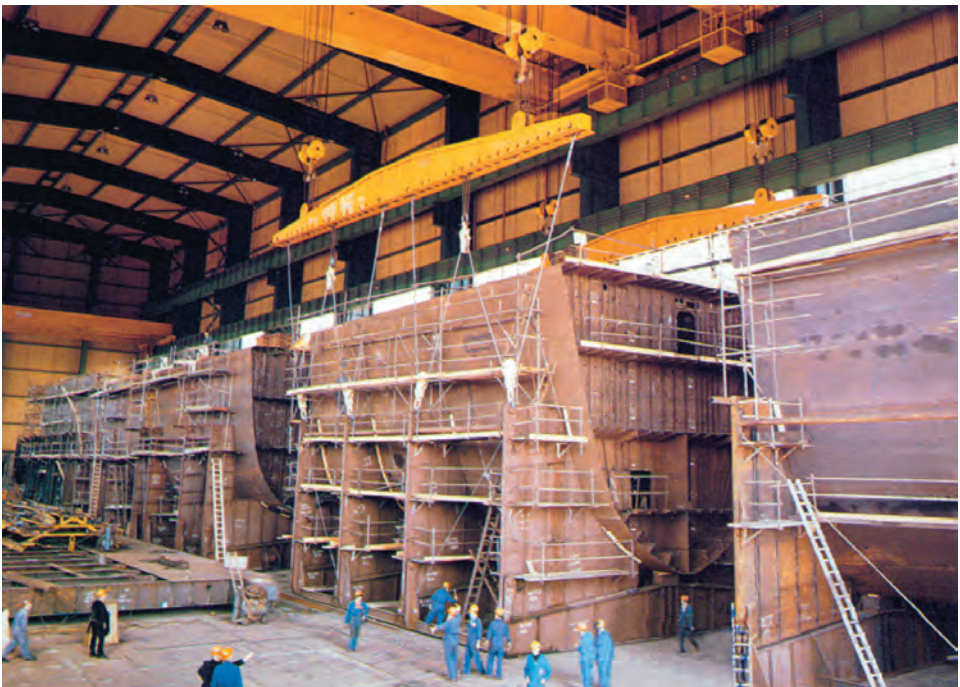
AFTER the plans are completed by the naval architects, they are approved by the classification society.

AFTER **being completed** by the naval architects, **the plans** are approved by the classification society.

EXERCISE. Reduce the sentences that you have completed in previous exercise so that they are like the example above.



No. 1 Frigate under construction in Assembly Hall

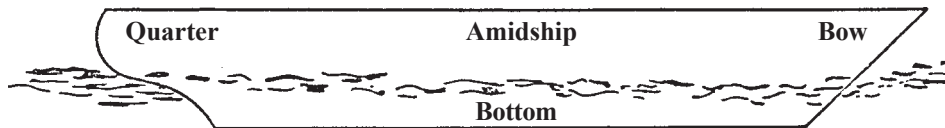


First big section almost completed for descaling and coating

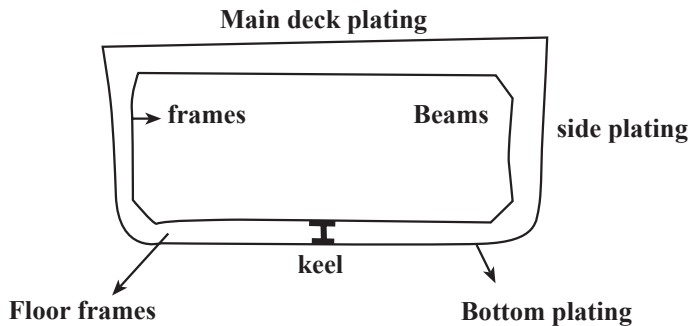
APPLIED TERMINOLOGY

(A) Terms relating to the hull.

The main part of a ship is the hull. This is the area between the MAIN DECK, the SIDES and the BOTTOM.

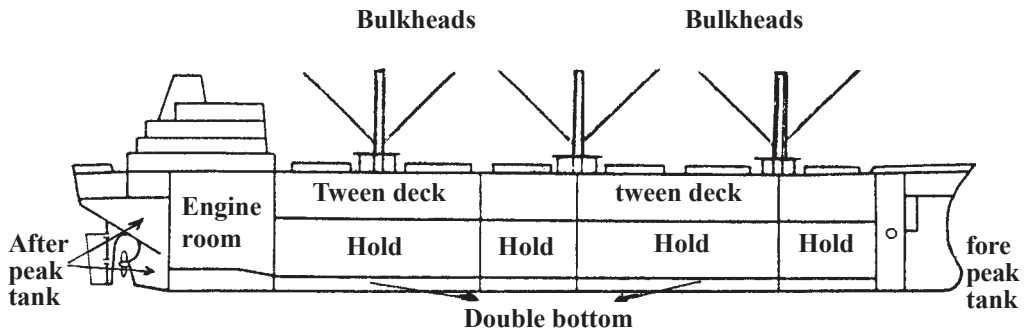


It is made up of FRAMES covered with PLATING.



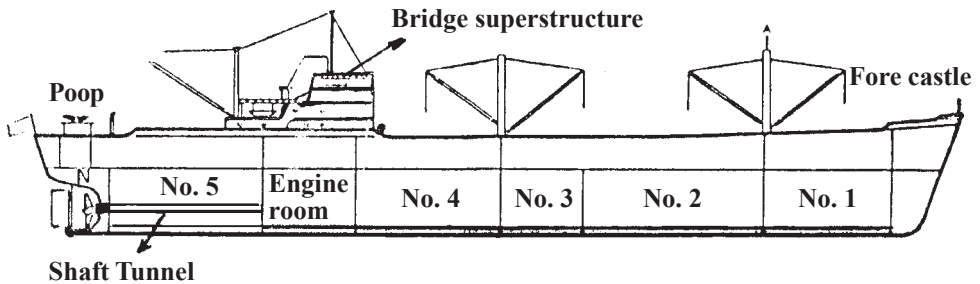
The hull is divided up into a number of watertight compartments by DECKS and BULKHEADS. Bulkheads are vertical steel walls going across the ship and along. Decks divide the hull horizontally. Those dividing up cargo spaces are known as, TWEEN DECKS. The hull contains the ENGINE ROOM, cargo space and a number of tanks. In dry cargo ships the cargo space is divided into HOLDS, in liquid cargo ships it is divided into TANKS. At the fore end of the hull are the FORE PEAK TANKS and at the after end are the AFTER PEAK TANKS. They are used for fresh water and water ballast. The space between the holds and the bottom of the hull contains DOUBLE BOTTOM TANKS.

It's purpose is to provide a safeguard in the event of grounding, which happens to about two ships. This space is used for water ballast, fresh water or bunkers.

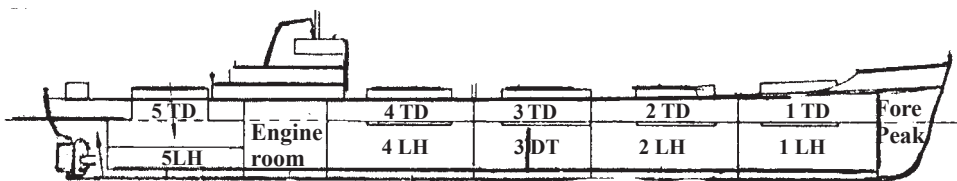


(B) Terms relating to superstructure

All permanent housing above the main deck is known as SUPER STRUCTURE. The basic pattern of super structure for a traditional dry cargo ship is known below.



EXERCISE. complete this description of a modern cargo ship:



The diagram above shows the layout of a modern dry cargo ship. The hull is divided up into a number of watertight by decks and steel At the fore and after ends of the hull are the tanks and the tanks. The is situated at the after end of the ship to leave more room for cargo. The cargo space is divided up into

These also have Above the main deck is the At the fore end is the At the after end the superstructure and the are combined.

NEW WORDS TO STUDY

| | |
|------------------------|--|
| BEAM | : MOVING TOWARD OR DIRECTED AT A SHIP'S BEAM. |
| BOTTOM | : THE UNDER SURFACE AS OPPOSED TO THE TOP SURFACE. |
| BULKHEAD | : AN UPRIGHT PARTITION SEPARATING COMPARTMENTS. |
| CLASSIFICATION SOCIETY | : A SOCIETY FOR THE PROMULGATION OF RULES FOR THE CONSTRUCTION OF VESSELS. |
| FRAMEWORK | : STRUCTURE GIVING SHAPE AND SUPPORT. |
| GIANT TANKER | : A VERY LARGE TANKER. |
| KEEL | : TIMBER OR STEEL STRUCTURE ALONG THE BOTTOM OF A SHIP. |
| SHIPYARD | : AN AREA WHEN SHIPS ARE MADE UP. |
| TRIAL | : PRELIMINARY TEST OF THE QUALITY, EFFECTIVENESS, ABILITY. |
| WATERTIGHT | : MADE OR FASTENED SO THAT WATER CANNOT GET IN OR OUT. |

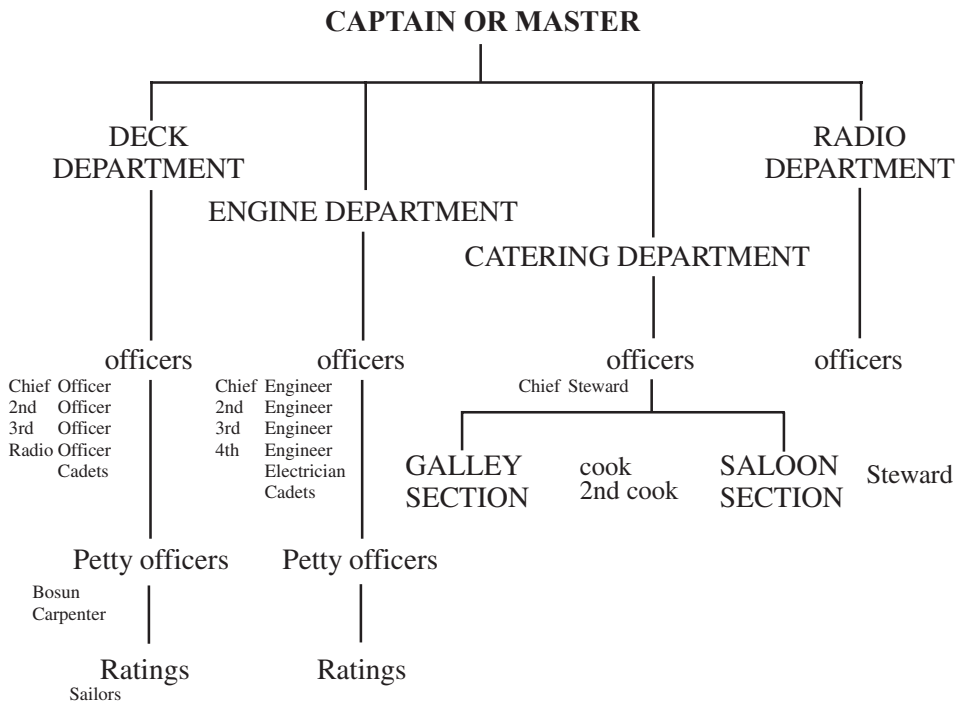
UNIT 4

MANNING

READING COMPREHENSION

THE ORGANIZATION OF A SHIPS AND TYPICAL CREW

Study this diagram. What do you think the passage is about? In what order do you think the writer will discuss the organization of a ship's officers and crew?



Now read the passage

CAPTAIN

The man in charge of a ship is the captain or Master. He is responsible for the ship and shipowner her cargo and the safety of the crew. also he is the one person answerable in law for the safe and efficient runing of the ship.

Although his correct title is the Master, he is addressed as ‘captain’.

The organization of the crew of a vessel is changing, but it is still customary to find Deck, Engine, Catering and Radio Departments in ships of a reasonable size. Each department is made up of a varied number of officers and ratings.

The chief officer, or first Mate is also usually responsible for discipline, the upkeep of the general fabric of the ship and the cargo stowage he is often called, is the Master’s chief officer and head of the Deck Department. He is assisted by a second officer. Several companies employ a first officer as well as a chief officer. The Deck Department also includes a Boatswain (Bosun) carpenter, and numbers of ratings. These are made up of Able Seaman (AB), Ordinary Seamen (OS) and a middle grade known as Efficient Deck Hands (EDH). There are other grades of Seamen. On some ships Navigating cadets are carried for training purposes.

THE SECOND OFFICER

Second officer usually keeps the 4- 12 watch and has an overall responsibility for the navigation of the ship and the upheep of the navigational equipment.

THE THIRD OFFICER

The third officer keeps the 8-12 watch and is perhaps responsible for the ships safety equipment.

THE CADETS

The cadets both deck and engine will spend of their training period familiarising themselves will all the activities that go on aboard ship, part of their time ashore in a technical college learning the technical theory and the final part understuding the officers learning practically the work and responsibilities.

THE BOSUN

The bosun is the foreman of the crew and puts into effect the chief officer's directions on the day - to - day running and maintenance of the ship.

CARPENTER

carpenter or general handyman is often carried to general deck repairs and maintenance.

THE DECK RATINGS

Deck ratings composed of A.Bs, ordinary Seaman, are divided up into watches where they help maintain a lookout, steer the ship when in confined waters and in fog when the automatic helmsman is not in use and assist the BOSUN in the day - to - day running of the ship.

CHIEF ENGINEER OFFICER

The chief engineer officer is responsible for the engines as the captain is for the ship. he is assisted by other engineer officers.

SECOND ENGINEER OFFICER

The second engineer officer is the executive officer of the engine room and is responsible for the practical upkeep and maintenance of the engine room if watches are kept he usually keeps the 4-8.

THIRD ENGINEER OFFICER

The third engineer officer keeps the 4-12 watch if watches are kept and has practical responsibilities for the engine, e.g. if a steam engine he might have responsibility for the boilers.

FOURTH & JUNIOR ENGINEER OFFICERS

Fourth and Junior officers keep any remaining watches and have responsibilities for certain aspects of maintenance.

The number of engineers and whether any specialist electrical officers are carried will depend on the type of machinery involved.

The engine room petty officers are the storekeeper and Donkeyman. On tankers there is also a pumpman. He is also a petty officer. The engine room ratings are firemen and Greasers.

The catering Department is under the chief steward. It is divided into a saloon and galley section. The former is headed by the second steward, the latter by the ship's cook. They are assisted by several stewards and cooks, and by a number of Junior ratings.

The Radio Department often consists of only one man: the Radio officer. On ships where continuous radio watches are kept there may be three radio officers: a chief, second and third.

(A) FUNCTION

A person's function, or what he does, can be expressed in terms of his responsibility.

STUDY these examples:

1. The Master **is responsible for** the safety of the ship.
2. The safety of the ship is **the responsibility of** the Master.

Note the addition here:

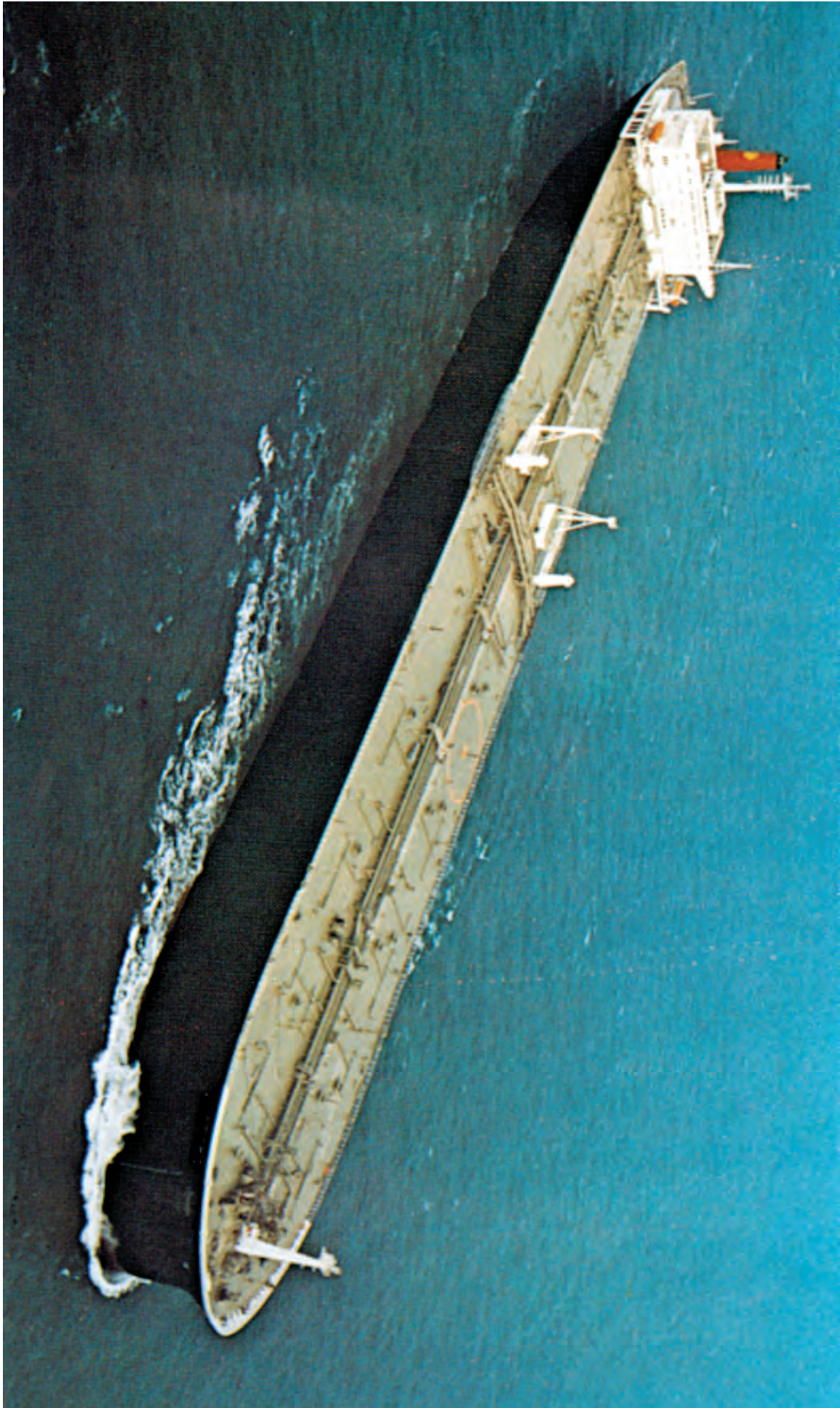
3. The Master is responsible **to the company** for the safety of the ship.

EXERCISE 1. Link the following (do not change their order), using whichever pattern above is appropriate:

- (a) chief officer - Master - the Deck Department.
- (b) Third officer - the life - saving equipment.
- (c) The sounding of tanks and bilges - carpenter.
- (d) Radio officer - Radio communications.
- (e) Chief steward - Master - the catering Department.
- (f) The preparation of food - ship's cook.
- (g) Chief Engineer - the efficient running of his department.
- (h) The loading and unloading of oil - pumpman.

The function of a thing, or what it is used for, can be expressed in a number of ways:

1. By using the phrase: **THE FUNCTION OF IS TO**
e.g. The function of a crane is to lift heavy objects.
2. By using the verb **TO USE + FOR – ING.**
e.g. A crane is used for lifting heavy objects.
3. By using a verb expressing the function.
e.g. A crane lifts heavy objects.
4. By using a prepositional phrase introduced by **WITH.**
e.g. We lift heavy objects with a crane.



EXERCISE 2. Rewrite the following sentences in the three alternative ways.

- (a) The function of a thermometer is to measure temperature.
- (b) A fire extinguisher is used for putting out fires.
- (c) A windless raises and lowers the anchors.
- (d) We measure time with a chronometer.

(B) TIME RELATERS

When we want to show that one event takes place at the same time as another we can link these events using **WHEN**, **WHILE** and **AS**.

1. WHEN and WHILE

WHEN tells us what time two simultaneous action happen. It also implies that the two events are completed, unless otherwise stated.

e.g. When the ship is launched, the crowds cheer.

WHILE tells us that one action is happening at the same time as another.

It is often used with continuous tenses.

e.g. While the men were preparing for the launch, the people started to arrive.

EXERCISE. Fill in the blanks with **WHEN** or **WHILE** as appropriate:

- (a) the Captain steps on board, he is saluted.
- (b) the main engine is being installed, the auxiliary machinery is fitted.
- (c) Constant checks are made, the ship is being built.
- (d) the surveyor inspects the lifeboats, he examines their equipment as well.
- (e) the cargo holds are being lined, the derricks are assembled.
- (f) Different types of paint are used, the ship is painted.

2. Reduced WHEN and WHILE clauses.

clauses introduced by **WHEN** and **WHILE** can be reduced in the same way as clauses beginning with **AFTER** and **BEFORE**, that is, if the subject of the main clause is the same as the subject of the time clause.

e.g. While the ship is being built, she is constantly being tested.

. While being built, the ship is constantly being tested.

3. AS

When two actions are closely connected, AS can be used instead of WHILE.

e.g. AS the ship was leaving the harbour, she hit the Jetty.

AS is often used when the action in the same time clause is the cause of the action in the main clause.

e.g. AS the sun rose, the sky became lighter.

(**Note:** Clauses introduced by AS **cannot** be reduced.)

APPLIED TERMINOLOGY

(A) Terms relating to position in a ship.

At the fore end of a ship is known as FORWARD

At the after end of a ship is known as AFT.

At the midships part is known as AMIDSHIPS.

e.g. The forecastle is situated forward.

The main engines in a tanker are aft.

PORT SIDE and STARBOARD SIDE can be added to these:

e.g. Port side forward, starboard side amidships, port side aft.

The extreme fore end is known as RIGHT FORWARD. The extreme after end is known as RIGHT AFT.

e.g. The ensign is right aft.

Here are some more terms relating to position:

IN FRONT OF is known as BEFORE or FORWARD of BEHIND is known as ABAFT or AFT OF Across the ship from side to side is ATHWARTSHIPS

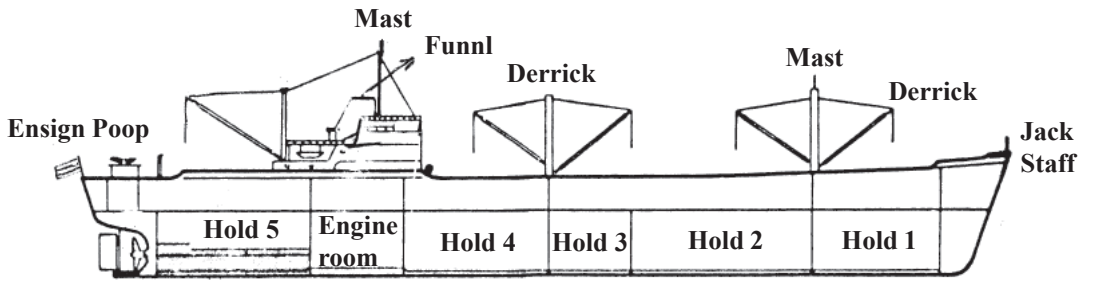
Along the length of the ship from stem to stern is FORE AND AFT.

e.g. Number 1 hold is forward of Number 2 hold. The funnel is always abaft the bridge.

Life rafts can be stowed athwartships or fore and aft.

Now study this diagram of a traditional general cargo ship and read the

description below:



NEW WORDS TO STUDY

| | | |
|-----------------|---|--|
| ABLE SEAMAN | : | SAILOR WHO IS TRAINED AND FIT FOR ALL DUTIES. |
| BILGES | : | THE PART OF THE UNDERWATER BODY OF A SHIP LYING BETWEEN THE FLAT OF THE SHIP'S BOTTOM AND THE STRAIGHT VERTICAL TOPSIDE. |
| BOATSWAIN | : | SERVANT - A PETTY OFFICER ON A MERCHANT SHIP HAVING IMMEDIATE SUPERVISION OF THE DECK FORCE OF BOAT CREWS. |
| BOSUN | : | BOAT CREWS. |
| CARPENTER | : | AN INSTRUMENT FOR MEASURING TIME. |
| CRANE | : | A MACHINE FOR RAISING AND LOWERING HEAVY WEIGHTS. |
| CROWD | : | TO PRESS ON (THE SHIPS CROWDED NORTHWARD). |
| DECK DEPARTMENT | : | THE DEPARTMENT COMPOSED OF THOSE MEMBERS OF A SHIP'S PERSONNEL WHOSE DUTIES INVOLVE THE PRACTICAL HANDLING OF THE SHIP. |
| DERRICK | : | A TALL THREE - LEGGED STAGING ERECTED TO SUPPORT A HOISTING CRANE. |
| FIRST MATE | : | OFFICER SECOND IN COMMAND TO A CAPTAIN ON A MERCHANT SHIP. |
| HARBOUR | : | PLACE OF SHELTER FOR SHIPS. |
| JETTY | : | STONE WALL OR WOODEN PLATFORM BUILT OUT INTO A SEA. |
| JUNIOR RATING | : | WHO HOLDS A LOW RANK IN A PROFESSION. |

| | |
|---------------|--|
| MASTER | : CAPTAIN OF A MERCHANT SHIP. |
| NAVIGATOR | : PERSON WHO NAVIGATES. |
| PETTY OFFICER | : SENIOR NON COMMISSIONED OFFICER IN THE NAVY. |
| SOUND | : TEST OR MEASURE THE DEPTH OF WA- TER IN SHIP'S HOLD. |
| STARBOARD | : SIDE OF A SHIP THAT IS ON THE RIGHT WHEN ONE IS FACING FORWARD. |
| STEWARD | : PERSON WHO ATTENDS TO THE NEEDS OF PASSENGERS ON A SHIP. |
| STOREKEEPER | : SHOPKEEPER |