

ΑΕΝ ΑΣΠΡΟΠΥΡΓΟΥ

ΣΧΟΛΗ ΠΟΙΑΡΧΕΩΝ

2010 - 2011

Ε' ΕΞΑΜΗΝΟ

ΝΑΥΤΙΚΑ ΑΓΓΛΙΚΑ

(UNIT I)

ΕΠΙΜΕΛΕΙΑ

~~ΔΙΑΜΑΝΤΗ ΑΓΓΛΙΚΑ~~

GRAMMAR + LISTENING

1a Import and export



Read these questions. Make notes then discuss your answers with a study partner.



- 1 Is coffee a popular drink in your country?
- 2 Where does the coffee which you drink come from?
- 3 Can you describe any of the stages in coffee production?

1b How is coffee produced?



Look at the pictures. They show different stages in the process of coffee production. Try to put the pictures in the correct order.

1



2



3



4



5



6



7



8



9



10



1c

You are going to hear a radio programme about how coffee is processed for export. Before listening, use your dictionary to check the meaning of the words in colour.

a coffee plantation

hand picked

a coffee crop

pulp

roasted

a harvest of coffee

graded by size

the hulling process



Listen to the cassette. Check the order of the pictures in Exercise 1b.

1d True or False?

9



Read these statistics about coffee production and consumption. Do you think they are true or false?

- 1 About 32 million cups of coffee are consumed in the UK per year.
- 2 Coffee is produced by forty countries in Africa.
- 3 Coffee trees can continue to produce fruit for a hundred years.
- 4 Three coffee beans are contained inside each 'cherry'.
- 5 A year's harvest from fourteen trees is needed to produce one 100g jar of coffee.
- 6 Coffee is the most valuable commodity in world trade today.



Listen to the cassette again and check your answers.



2



Read this summary of the process described in the radio programme. What is done at each stage? Complete the summary using your own words.

Young coffee trees on hillsides and for five years until they are mature enough to bear fruit, called 'cherries'. When the cherries are ripe they and then in the sun. In the hulling process, the coffee beans from the skin and pulp. After hulling, the beans into sacks and to a factory where each bean Next, the beans overseas and to a factory where they are roasted and Finally, the packaged coffee beans to retail outlets throughout the country where they by consumers.

Present Simple Passive

In the summary in Exercise 2d the missing verbs are in the Present Simple Passive. The passive is used to change the emphasis in a sentence. Compare these examples.

active	passive
Consumers buy the coffee.	The coffee is bought by consumers.
(The emphasis is on the people.)	(The emphasis is on the item and the action.)

In passive sentences the action is more important than the person or thing who does the action. Compare these examples.

active	passive
People load the sacks onto a truck.	The sacks are loaded onto a truck
	by people.
	(It is not important to know who loaded them.)

Sometimes it is important to know who or what does the action in a passive sentence. To indicate this, use **by**.

The goods are checked **by a customs official**.

The beans are transported to supermarkets **by truck**.

The form of the Present Simple Passive is:

Present Simple of **be** (is / are) + **past participle** of the verb

active	passive
Farmers harvest the beans	The beans are harvested by farmers

Notice that **is** and **are** agree with the subject, not the person who does the action.

The beans are picked by hand.

The cargo is loaded at the docks.

Are the beans roasted before they are shipped overseas?

Is the cargo transported in containers or sacks?



Read these sentences. Change the emphasis of these sentences by rewriting them in the Present Simple Passive. Indicate who or what does the action only if it is important.

- 1 The Cook prepares the food. The food is prepared by the Cook
- 2 A steward cleans the officers' cabins every day. The officers' cabins
- 3 People speak Portuguese in Brazil. Portuguese
- 4 Someone monitors the fuel levels regularly. The fuel levels
- 5 A German company owns this vessel. This vessel
- 6 Our ships transport oil from the Middle East. Oil
- 7 People from all over the world play football. Football
- 8 A naval architect designed the ship. The ship

4b Where are the tools kept?



Write some questions in the Present Simple Passive using the words in brackets.

- | | |
|--|-----------------------------------|
| 1 (where / the tools / keep) | <u>Where are the tools kept</u> ? |
| 2 (how / wheat / transport) | ? |
| 3 (how much / stevedores / pay) | ? |
| 4 (what / radar / use for) | ? |
| 5 (what goods / import / to the USA) | ? |
| 6 (who / those machines / build by) | ? |
| 7 (when / the grain / harvest) | ? |
| 8 (mail / deliver / every day) | ? |
| 9 (where / the ship / register) | ? |
| 10 (supplies / order / on a daily basis) | ? |

R/C + GRAMMAR

5a From sail to steam



You are going to read an article about the importance of steam power to a shipping company. Read these questions then scan read the article to find the answers.



- 1 In what year was the company P&O founded?
- 2 How many days did the first steamship take to cross the Atlantic?
- 3 What happened to the Don Juan?
- 4 What were the names of the two vessels that sailed to Alexandria?
- 5 What did the Hindostan achieve in 1843?
- 6 How many miles is the overland stretch from Alexandria to Suez?

From Sail to Steam

1

Today, P&O is known as one of the largest cruise ship lines that operates the most modern of vessels. The company owes its reputation to two men, Anderson and Willcox, who founded it in 1837. The company was established at a time when the advent of steam power was changing the face of industry and transportation. Before the days of steam, international trade was dependent on sailing ships. These vessels were inexpensive and economical to operate. However, sea passages were dependent on the weather and tides. The introduction of steam engines to ship building in the early eighteen hundreds revolutionised seafaring, giving ships the power to sail against nature for the first time ever.

2

As with any invention, however, not everyone favoured the use of steam engines in shipping, insisting that nothing could replace the craft of sailing. In the early days, the British Navy itself opposed the introduction of steam on the grounds that its advantages were outweighed by its disadvantages. The first steamers used single-cylinder engines powered by coal and were consequently expensive, dirty and inefficient to run. Then there was the issue of comfort: because the steamers used paddles more suited to rivers than the open seas, they had a tendency to pitch, roll and corkscrew through bad seas. Every time the paddles came out of the sea, the engine would stall so the early steamships also needed a full complement of sails. Consequently, steamers required two crews: one for sailing and one for engineering, all adding up to substantial costs. The Savannah is said to be the first steamship to cross the Atlantic in 1819 but she was designed principally as a sailing ship with detachable paddles that were in fact hardly used at all during her 21-day crossing. To critics, it seemed that steamers could never replace the elegant sailing ships with their cost-free power supply and requisite handling skills.

3

Anderson and Willcox, however, were among those who realised the commercial potential of steamships in providing faster and more regular services. Their primary ambition was to run regular crossings from Britain to Spain and Portugal which, they were convinced, would attract both merchants and passengers. Initially, their company was called 'The Peninsular Steam Navigation Company' which later became 'The Peninsular and Oriental Steam Navigation Company' as they expanded their lines to Egypt and India.

4

The cost of building and running steamships made the new era of shipping a high risk venture. Bankruptcy was common among steamship owners and Anderson and Willcox could not afford to operate without external investment. Eventually they managed to win a government contract to transport mail from Britain to Spain and Portugal by steamship. This guaranteed them the income that they needed and in November 1837 the first ship to sail under the name of P&O set off for Spain. The vessel was the Don Juan, the largest in the fleet of seven steamships. Her voyage was, however, ill-fated. Returning from Spain with mail and cash, she was grounded off the south of Spain with Anderson and his wife aboard. Although the ship was wrecked, no one was hurt and, just as importantly, the mail was saved and despatched to its destination without further delay. Fortunately, the incident did not spell disaster for the future of P&O and the company continued to expand.

5

The company's reputation came to no harm and within just a year of the disaster P&O was planning to extend its mail services through the Mediterranean to Egypt and eastwards to India. After winning the contract to deliver mail as far as Alexandria, the company was incorporated by a Royal Charter in 1840 giving it the necessary capital to buy two more vessels, the Great Liverpool and the Oriental. Weighing 1,600 and 1,750 tons respectively, these were the largest vessels that P&O had to date and they provided the transport for both mail and passengers to Alexandria, the key staging post for the journey to India.

6

Then as now, there were two routes from Europe to India: via the Cape of Good Hope or via Suez. The first steamers were able to cut the time it took to go around the Cape by following the African coast south, a direct route that sailing ships had never been able to take because of the opposing currents. However, this passage was lengthy and required much advance planning for coal fuelling and restocking. As east-bound mail could be delivered more quickly overland, steamship companies turned their attention to the ancient Suez route.

7

For thousands of years countless trading nations had navigated the route from Suez through the Red Sea to Africa and India. And as generations of navigators knew, there was one perennial problem with the route: the monsoon. Under traditional sail, the change of the monsoon winds meant that only one voyage a year could be made from Suez to the Gulf and back. The coming of steam thus made maritime history.

8

In order to outstrip the monsoon winds, steamers had to be bigger and better than ever before. Initial experiments with steam-powered vessels sailing to the east were of limited success so orders were placed by P&O for two new vessels, their largest paddle steamers yet. The Hindostan (2,018 tons) and the Bentinck (1,800 tons) had 520 hp single-cylinder engines, were 240 feet long, were built of wood with iron bulkheads and were specially designed to combine reliability with passenger comfort. The Hindostan was allocated the Suez to Calcutta route and in 1843 she defeated the monsoon wind by completing the trip in just 25 days.

9

With regular crossings now established, the scene was set for a boom in world trade and communications. When the Suez Canal was opened in 1869 the sea link from Europe to the east was complete. Passengers no longer had to put up with the 150-mile overland trip from Alexandria to Suez by camel. During the same period there were improvements in marine engineering which began to change the design of the ocean-going steamer: the single-cylinder engine was replaced with double- and triple-expansion engines; screw propellers superseded the old wooden paddles and iron was gradually adopted as a new building material. As the golden age of the sailing ship faded, entrepreneurs like Anderson and Willcox were finally able to realise their dream of the power of steam.



5b



Read these sentences. Each sentence summarises the topic of one of the paragraphs in the article. Match each topic sentence with a paragraph.

Topics

Paragraph

- | | |
|---|--------------------------|
| 1 The first stage of the journey from Britain to Egypt. | <input type="checkbox"/> |
| 2 The aim of the company's founders. | <input type="checkbox"/> |
| 3 The limits of the Suez route. | <input type="checkbox"/> |
| 4 The opposition to steamships. | <input type="checkbox"/> |
| 5 The evolution of steamships. | <input type="checkbox"/> |
| 6 Overcoming weather conditions. | <input type="checkbox"/> |
| 7 P&O's first official voyage. | <input type="checkbox"/> |
| 8 The route via Africa. | <input type="checkbox"/> |
| 9 The background of the company. | <input type="checkbox"/> |

5c



Work with a study partner.



Person A: Look at paragraphs 1-4 of the text. Prepare some more scan reading questions like the ones in Exercise 5a. Ask your partner your questions. Then answer his questions for the rest of the text.

Person B: Look at paragraphs 5-9 of the text. Prepare some more scan reading questions like the ones in Exercise 5a. Answer your partner's questions about the first part of the text. Then ask him your questions.

6a

Past Simple Passive

Look at these examples of the Past Simple Passive from the text From Sail to Steam.

The Hindostan was allocated the Suez to Calcutta route. (paragraph 8)

Iron was gradually adopted as a new building material. (paragraph 9)

The form of the Past Simple Passive is:

Past Simple of be (was / were) + past participle of the verb



Read From Sail to Steam in Exercise 5a again. Find more examples of the Past Simple Passive and write them down.

6b



Put the words in order to make questions in the Past Simple Passive.

- 1 fire this were extinguishers the morning checked ?
- 2 broken what vessel up in the year was ?
- 3 1965 who sold in to was the vessel ?
- 4 funnels why shortened were ship's the ?
- 5 by interior was who designed the ?
- 6 the registered under was flag the tanker Liberian ?
- 7 that the detained why ship was in harbour ?
- 8 of completed when the was ship construction the ?

Verbs not used in the passive

Some verbs cannot be used in the passive because they do not take an object. Compare the difference between these examples.

Active

subject	active verb	object
Everyone	read	the book.
The boy	killed	the spider.

Passive

subject	passive verb	
The book	was read	by everyone.
The spider	was killed	by the boy.

subject	active verb	(no object)
The guests	arrived	on time.
The spider	died.	
The children	laughed	loudly.

(the passive form is not possible)



Read these sentences, which are in the active form. Decide if the passive form is possible. If it is, rewrite the sentence.

- 1 Fifty people attended the meeting. The meeting was attended by fifty people.
- 2 Suddenly the barrels fell from the sling. (passive not possible)
- 3 The Captain is a fair person.
All crews like him.
- 4 I go to the gym every morning to keep fit.
- 5 The passengers disembarked from the vessel.
- 6 The pilot comes to the vessel by boat.
- 7 All seafarers completed the training course.
- 8 Carelessness often causes accidents on board.
- 9 We travelled to six countries on our last trip.
- 10 These books cost a lot of money.



Put the verbs in brackets into the simple present or simple past tense and then change the sentences into Passive voice

1. They _____ (clean) the steel plates by shot blasting and then _____ (coat) them with primer paint.

2. When a ship is ready, we _____ (launch) her
into a dry dock which we _____ (flood) with
water.

3. The chief officer _____ (work) out a mainten-
ance programme for each day.

4. The tanker _____ (take) on supplies at Cape
town yesterday.

5. _____ you _____ (inspect) all piping connections
before you could find the leak?

Ex. Put the following verbs in the blanks of the bubbles in the
right form of the
passive voice.

- compress
- condense
- drive
- explode
- look
- make
- operate
- push out
- get started
- suck



Different types of marine engine

There are four main types of marine engine: the diesel engine, the steam turbine, the gas turbine and the marine nuclear plant. Each type of engine has its own particular application.

The diesel engine is a form of internal combustion engine similar to that used in a bus. Its power is expressed as brake horsepower (bhp). This is the power put out by the engine. Effective horsepower is the power developed by the piston in the cylinder, but some of this is lost by friction within the engine. The power output of a modern marine diesel engine is about 40,000 brake horsepower. This is now expressed in kilowatts. By comparison the engine of a small family car has an output of about 80 bhp. Large diesel engines, which have cylinders nearly 3 ft in diameter, turn at the relatively slow speed of about 108 rpm. These are known as slow-speed diesel engines. They can be connected directly to the propeller without gearing. Although higher power could be produced by higher revolutions, this would reduce the efficiency of the propeller, because a propeller is more efficient the larger it is and the slower it turns. These large slow running engines are used in the larger merchant ships, particularly in tankers and bulk carriers. The main reason is their low fuel consumption. More and more of the larger merchant vessels are being powered by medium-speed diesel engines. These operate between 150 and 450 rpm, therefore they are connected to the propeller by gearing. This type of engine was once restricted to smaller cargo ships, but now they are used in fast cargo liners as well as in tankers and bulk carriers. They are cheaper than slow-speed diesel engines, and their smaller size and weight can result in a smaller, cheaper ship.

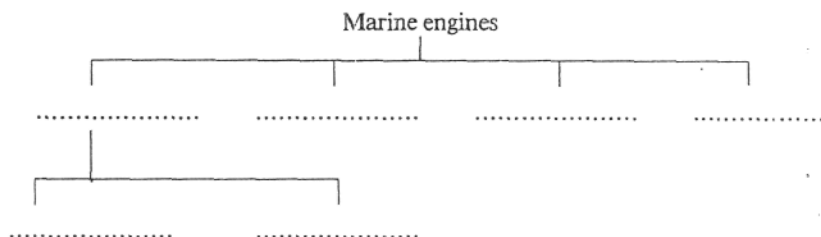
In steam turbines high pressure steam is directed into a series of blades or vanes attached to a shaft, causing it to rotate. This rotary motion is transferred to the

propeller shaft by gears. Steam is produced by boiling water in a boiler, which is fired by oil. Recent developments in steam turbines which have reduced fuel consumption and raised power output have made them more attractive as an alternative to diesel power in ships. They are 50 per cent lighter and on very large tankers so of the steam can be used to drive the large cargo oil pumps. Turbines are often used in container ships, which travel at high speeds.

Gas turbines differ from steam turbines in that gas rather than steam is used to turn a shaft. These have also become more suitable for use in ships. Many naval vessels are powered by gas turbines and several container ships are fitted with them. A gas turbine engine is very light and easily removed for maintenance. It is also suitable for complete automation.

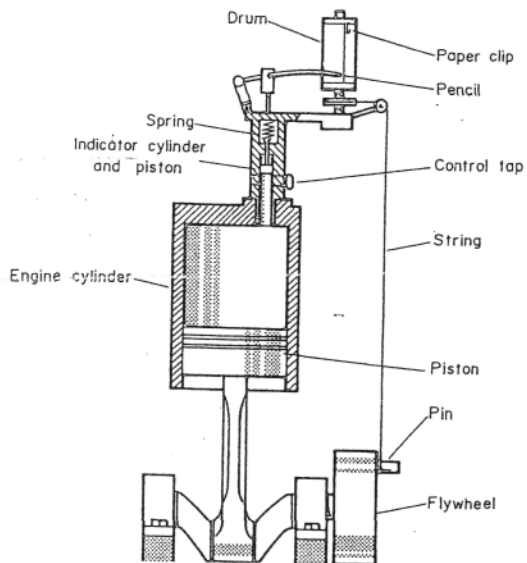
Nuclear power in ships has mainly been confined to naval vessels, particularly submarines. But this form of power will be used more in merchant ships as oil fuels become more expensive. A nuclear-powered ship differs from a conventional turbine ship in that it uses the energy released by the decay of radioactive fuel to generate steam. The steam is used to turn a shaft via a turbine in the conventional way.

Complete this diagram to form a summary of the basic types of marine engine.



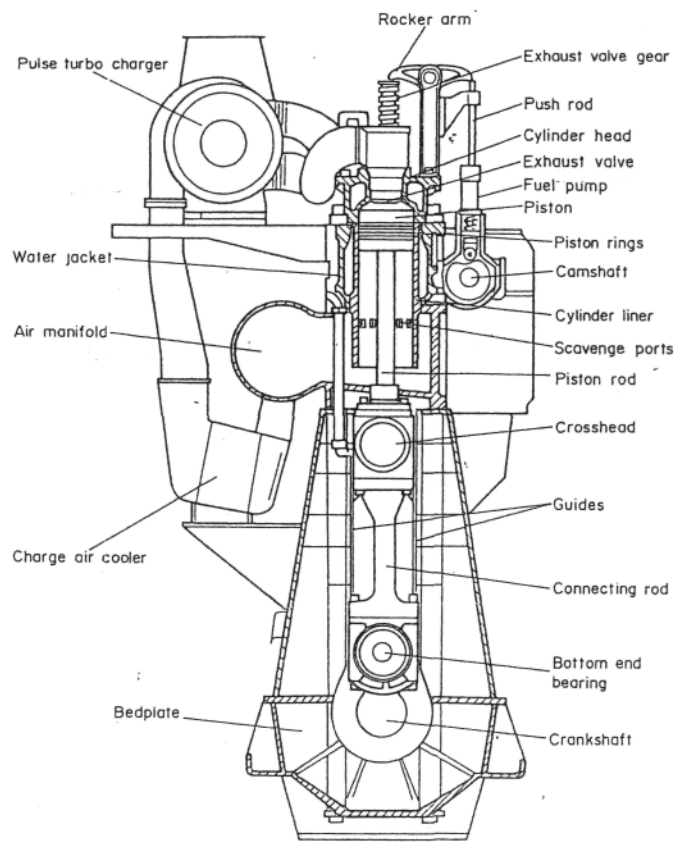
Now fill in this box to summarize the application of these engines.

Type of engine	Application
slow-speed diesel	
medium-speed diesel	
steam turbine	



This is the diagram of an engine pressure indicator.

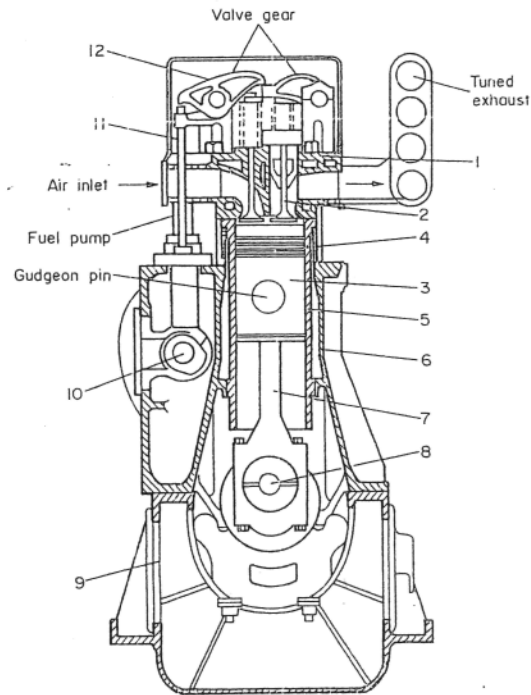
This is the diagram of a two-stroke slow-speed diesel engine



Ex

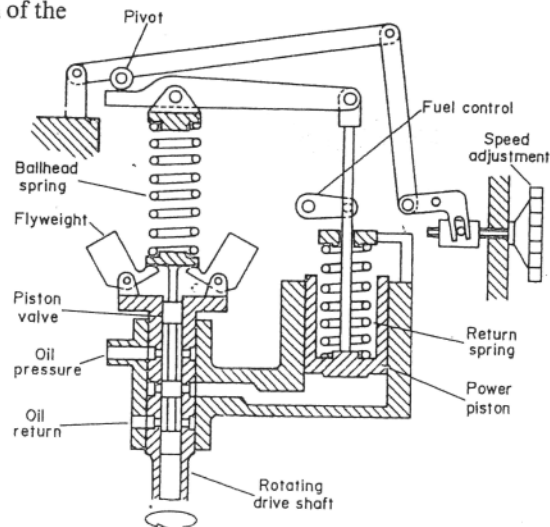
Here is the diagram of a four-stroke medium-speed diesel engine. After studying the previous diagrams, try to name parts 1-12.

19



- | | | |
|---------|---------|----------|
| 1 | 5 | 9 |
| 2 | 6 | 10 |
| 3 | 7 | 11 |
| 4 | 8 | 12 |

Stage 1. Study the diagram of the governor.



Ex

Stage 2. Join some of these sentences together to form an introductory paragraph.

The diagram above shows a hydraulic engine governor. This governor may be fitted to control the speed of an auxiliary diesel engine. The governor incorporates two systems. The one consists of the mechanical ballhead. This senses any change in the engine speed. The other consists of the hydraulic piston valve. It also consists of the power piston. This operates the fuel pump control setting. Any alteration in speed setting can be made by altering the speed adjustment control.

Functions of auxiliary machinery

Besides running and maintaining the main propulsion machinery of the ship, the Engineer Officer has a great deal of auxiliary machinery to look after. Auxiliary machinery covers everything mechanical on board ship except the main engines and boilers. It includes almost all the pipes and fittings and the equipment needed to carry out a number of functions. These functions may be summarized as follows.

To supply the needs of the main engines and boilers. Air compressors are used to supply compressed air for starting engines. Coolers are used for cooling either oil or water. Water for the boilers is also heated before being admitted into the boiler by feed water heaters. This increases the efficiency of the boiler.

To keep the ship dry and trimmed. This is done through the bilge and ballast pumping systems. The former removes water which has gathered in machinery, cargo and other spaces. The latter pumps water into and out of ballast tanks. In general cargo ships, these systems are usually interconnected and served by the same pumps. In tankers and other bulk carriers, these systems are entirely separate, because these ships may need to ballast at 12,000 tonne/hour and therefore need larger pumps.

To supply domestic needs such as fresh water from distillation plant, sanitation from sewage plant and heating and ventilation from heaters and air-conditioners.

To apply the main power of the engines for propulsion and manoeuvring. The engine power is transmitted to the propeller by a line of steel shafting. This is made up of the thrust shaft, intermediate shafts and the propeller shaft. Steering gear is also necessary to operate the rudder for manoeuvring.

To supply the ship with electrical power and lighting. This is done by steam or diesel-powered generators.

To moor the ship and handle cargo. Deck machinery is extensive and varied. It can be divided into anchor-handling machinery – windlass and capstans, mooring machinery – winches and capstans, and cargo-handling machinery – winches and cranes. It also includes cargo oil pumps.

To provide for safety. Firefighting and fire detection equipment, lifeboat engines and launching gear are also included.

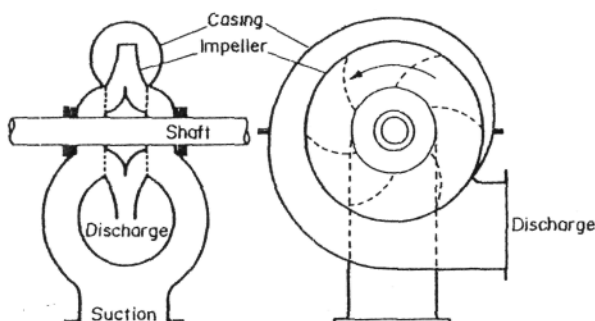
Responsibility for auxiliary machinery is often delegated to individual engineer officers, each one taking responsibility for the efficient working of certain items. A lot of equipment is duplicated, so that for example, one generator can be overhauled without cutting off the supply of electricity to the ship. Engineer officers on tankers are also involved in operating the cargo pumping machinery, although the pump rooms themselves are often manned by officers from the Deck Department.

(Ex) Underline the terms relating to auxiliary machinery

Ex write a description of different types of pump used on board by joining the following groups of sentences.

14

Centrifugal pumps consist of an impeller inside a casing.
This impeller rotates at high speed.
The liquid is thrown by centrifugal force against the surrounding casing.
The liquid enters through a suction pipe at the centre.
The liquid is then discharged through the delivery outlet.



Centrifugal pump

A simple kind of reciprocating displacement pump is the single-acting ram pump.

This consists of a ram moving up and down inside a chamber.

The chamber is fitted with a non-return suction valve and a non-return delivery valve.

When the piston moves up, a vacuum is formed in the chamber.

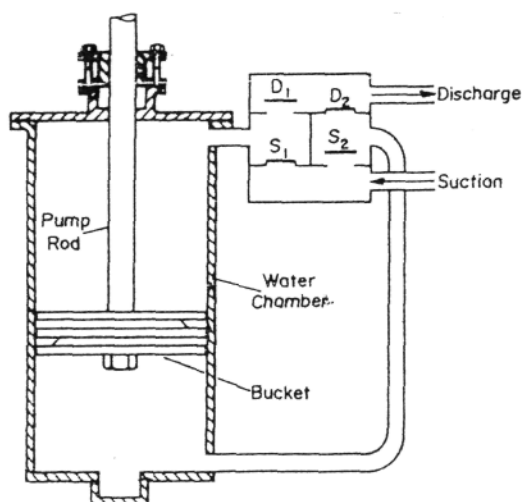
Liquid is drawn into the chamber through the suction valve.

Then the piston moves down.

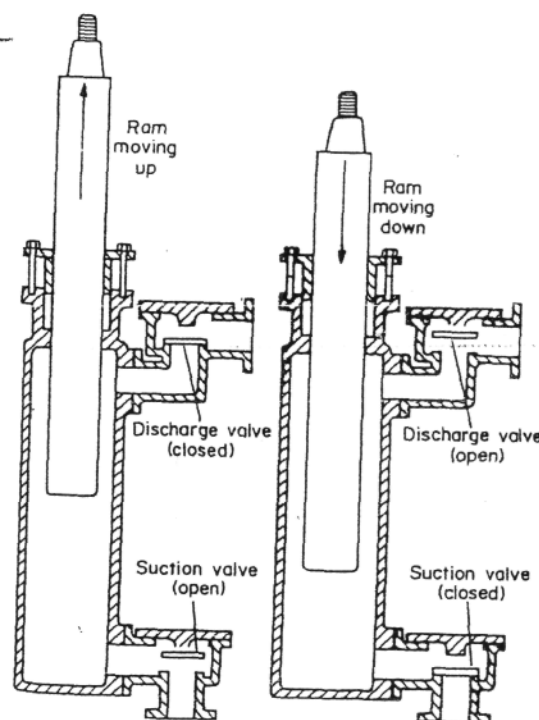
This creates a force on the liquid.

The suction valve is closed by this force.

The liquid is forced out through the delivery valve.



double-acting piston pump



Single-acting ram pump

Another type of reciprocating displacement pump is the double-acting piston pump.

This works on the same principle as the single-acting pump.

The chamber is fitted with suction and return valves at the top and bottom.

The liquid can be drawn in and discharged on each stroke.

Pumps are used on board ship.

These pumps can be divided into two main groups.

The two main groups are displacement pumps and centrifugal pumps.

5d Idiomatic expressions



Languages are often influenced by changes in society and technology. Here are some examples of informal idioms using the theme of steam power. They are not literal expressions. Read these sentences.

- 1 He completed the project entirely under his own steam.
- 2 The team played well at the start of the game but now they are running out of steam.
- 3 When the Chief Engineer is angry, he shouts to let off steam.
- 4 The local residents are very steamed-up about the plans to build a factory near their houses.
- 5 There isn't much time to finish this job so we'll have to go full steam ahead to get it done.



Now match each of the idioms with the correct definition.

- | | |
|---------------------------------|---|
| 1 under one's own steam | (a) be upset about something |
| 2 run out of steam | (b) get rid of bad feelings about something |
| 3 let off steam | (c) work at full capacity |
| 4 be steamed-up about something | (d) to have exhausted one's energy to do something |
| 5 go full steam ahead | (e) on one's own initiative without assistance from anyone else |

COMMUNICATION SKILLS : speaking + writing

4c Trade in your countries



Work with a study partner. First, note down your own answers to the questions. Then exchange information with your study partner.



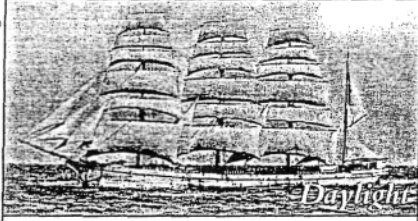
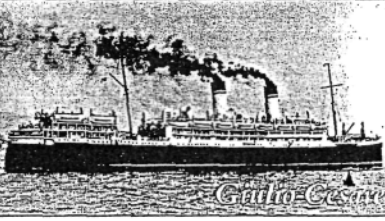
1	YOU	YOUR STUDY PARTNER
1 What types of goods are imported to your country?		
2 Where do the goods come from?		
3 Are the imported goods processed upon arrival or in the country of origin?		
4 What goods are exported from your country?		
5 How are the goods transported for export?		
6 How important is this export product to your country?		
2	YOU	YOUR STUDY PARTNER
Choose one commodity which is exported from your country. What are the stages in the process leading from production to export?		

Work with a study partner.

Person A: Read the information in the table below. Your partner has the details you need to complete the information about the Giulio Cesare. What questions will you ask him? Exchange information about the two vessels by asking and answering the appropriate questions.

Person B: Turn to **Unit 6 Exercise 7** in the Pairwork Section at the back of the book.

Person A:

	
<p>Type of Vessel: square-rigged four-mast sailing ship</p> <p>Sister ship: <i>Brilliant</i></p> <p>Built: 1901 for the Anglo-American Oil Company; designed to carry oil</p> <p>Launched: on the Clyde in 1901</p> <p>Gross tonnage: 3,756</p> <p>Length: 369 feet</p> <p>Beam: 49 feet</p> <p>Last voyage: 1920-21</p> <p>Bought by the Standard Transportation Company of Hong Kong in 1914; sold to Charles Nelson of San Francisco in 1921; bought by James Griffiths & Sons in 1924 and used as a barge for transporting gypsum; rerigged and fitted with engines in 1943 and used during WWII, making a passage from Vancouver to Cape Town; bought by Murray Simonsem in 1945, sailing under the Brazilian flag.</p>	<p>Type of Vessel:</p> <p>Sister ship: <i>Duilio</i></p> <p>Built: completed in in Wallsend-on-Tyne, England; designed by</p> <p>Owners: NGL, Italy</p> <p>Gross tonnage:</p> <p>Length: 634 feet</p> <p>Beam: feet</p> <p>Passengers: first class 243; second class; steerage 1,824</p> <p>Maiden voyage: in May 1922</p> <p>Giulio Cesare was used on the passenger service from 1934-39; transferred to the route until WWII; used to transfer troops to in 1940; used by the in 1942 and 1943 for three voyages round Africa; sunk during WWII in 1944; refloated, then broken up in</p>

Write the history of a vessel you know. Choose your current vessel or one of the vessels in Exercise 7. Include some of these points:

- vessel type
- sister ship
- builders
- date and place of construction
- length
- events during her lifetime
- gross tonnage
- port of registration
- maiden voyage
- last voyage
- beam