Unit 18

LEAVING THE DOCK

Basic terms

- *Dock Pilot* - *River Pilot* - *tug-boat* - *transverse thrust* - *effect of the screw* - *singling up* - *mooring ropes* - *skipper* - *handling of ships* - *buoys* - *dolphins* - *slack water*	- *single up* - *make fast* - *slack away* - *heave away* - *let go* - *cast off* - *haul in / heave in* - *hold on* - *heave on* - *keep tightened* - *stemming the tide* - *dockside*

Deck fittings

bitts

bollard

bollard

cleat

roller fairleads

sheaves and cleats

Unmooring / unberthing /undocking manoeuvre

Aft starboard mooring

Unberthing

Water jets in undocking

Unmooring

In the docks the Dock Pilot is concerned with avoiding other shipping and making allowance for the transverse thrust of the screw and wind. The River Pilot must think of tides and currents as well, and his local knowledge of these is of great importance. Before a Pilot (Dock or Sea Pilot) takes a ship through the basins he will want to know how she steers (all ships have different characteristics), the working of her engines, how much power she develops when going astern and her draught. A ship is taken out mainly by tugs, but she still needs to use her own engine power. Another factor to be considered is the effect of the screw (or propeller) on the direction of the ship.

Some time before the Pilot comes aboard the ship, the Master or the Officer of the Watch (OOW) has to tell the officers in charge of the Fore and After (Mooring) Station to single up. Under their control the ratings then cast off all but the essential mooring ropes (lines) so that the vessel is singled up aft and singled up forward. Other equipment is to be tested and made ready for going to sea: the engine-room telegraph, the speed log, the ship's whistle, the steering gear and the winches, for instance. The derricks are to be lowered and secured and all the hatches are to be closed and battened down. The patent log, or speed log, is to be ready for use, the depth finder on, the heaving lines to be at hand, the fenders to be ready, and the mooring ropes are to be clear for coming aboard or carrying along.

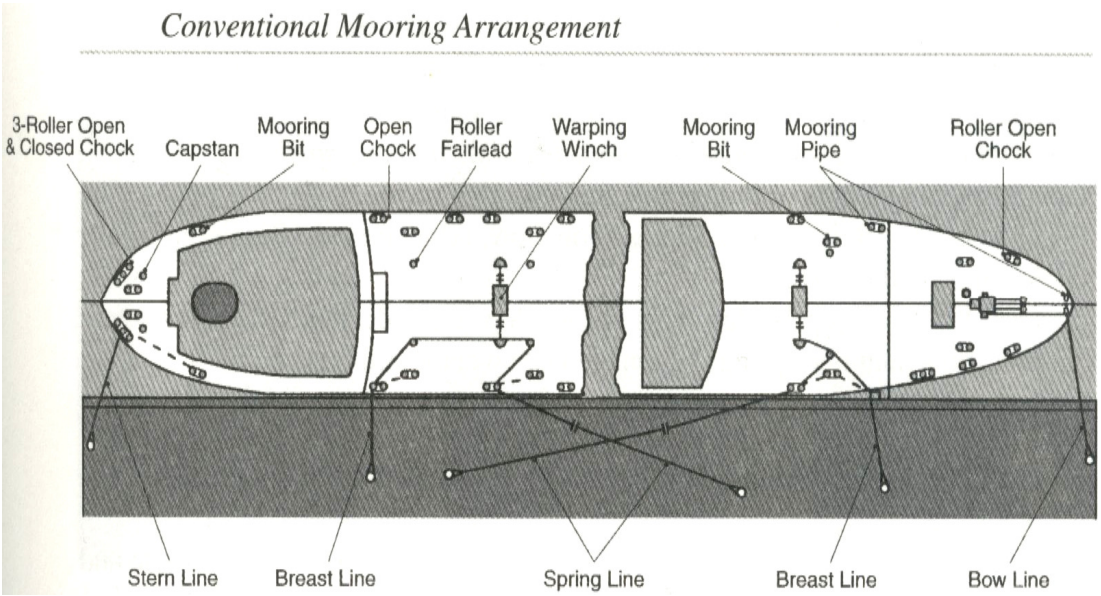
We must be sure that there are no lines, small boats, or obstructions which would be likely to foul the rudder or propeller. A series of blasts on a mouth whistle are sounded; these are intelligible only to the Pilot and the Skipper (Master) of the tug who is to carry out the orders. All ropes are cast off.

The Master should be adept at the handling of ships in enclosed waters as well as at the correct methods of berthing his ship or getting her away from wharfs and quays.

A great deal depends on local conditions: the way the currents run; the set of the tide; the strength and direction of the wind.

The availability of aids to berthing and leaving, such as buoys and dolphins, also have an effect on the choice of methods to be used.

There are, however, some general rules to bear in mind. The best time to berth or leave is at slack water. If, however, there is a tide or current running, the vessel's stem should be turned into it. This is called stemming the tide or current. The procedures for getting away from the dockside differ according to whether the ship is stem on to the tide or stern on to the tide.



TYPES AND USES OF WHARF HARDWARE

Ships tie up to wharves with lines fastened to mooring fittings such as bollards, corner mooring posts, and cleats.

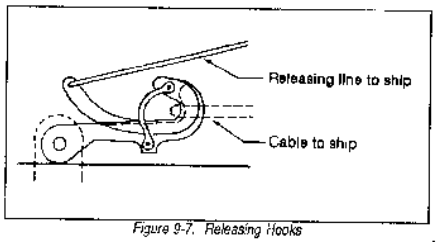


Figure 9-7. Releasing Hooks

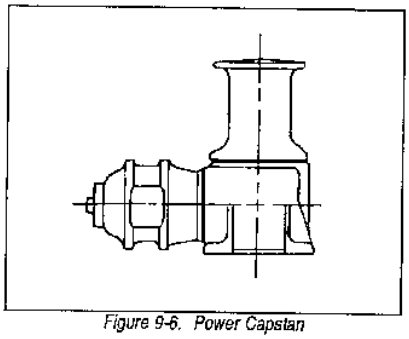


Figure 9-6. Power Capstan

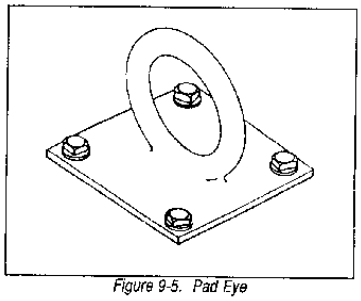


Figure 9-5. Pad Eye

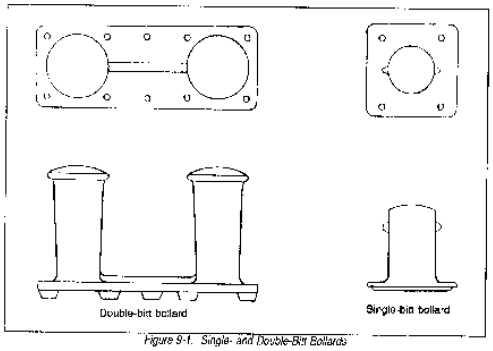


Figure 9-1. Single- and Double-Bitt Bollards

a. **Bollards**. Whether single- or double-bitt, bollards are steel or cast-iron posts to which large ships tie up. To prevent ships' lines from riding up off the post, bollards may have waists smaller than their tops, or they may have caps or projecting, rounded horns. Double bitt bollards are also known as double steamship bitts or simply as double bitts. Bollard bodies may be hollow for filling with concrete after installation. Bollards were once designed to take line pull loads of about 35 tons. Modern container ports usually have bollards with 100-ton line pull capacities.

b. **Cleats** are cast iron with arms extending from a low body. The base may be open or closed. They secure small ships, tugs, and work boats.

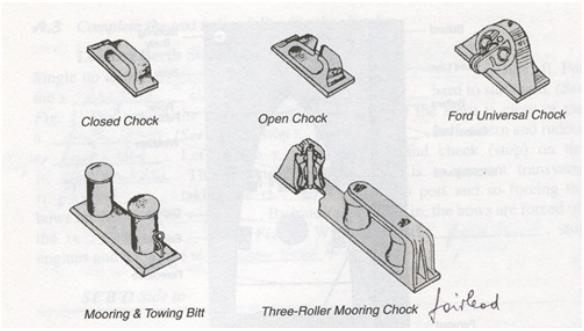
c. Fairleads or chocks are usually made of cast iron. They direct lines and snub lines when working a ship into or out of a berth. A closed chock may be used for a change in the vertical, as well as the horizontal, direction of the line.

d. **Pad eyes** are metal rings mounted vertically on a plate to receive a ship's line. Spliced with thimble and shackle, they are used only for small craft.

e. **Power capstans** are vertical drums operating on spindles. They are used to pull long, large wire-rope lines, especially when the lines are attached to dolphins. Capstans operate electrically or by air.

f. R**eleasing hooks** on the ends of mooring lines are attached to buoys, or to dolphins reachable only by service boats. Releasing hooks allow the lines to be detached from the anchors by tripping the hooks with small rope lines running from the releasing hook to the ship.

g. **Dolphins** are independent marine structures on shore for mooring ships. They consist of a group of timber, concrete or steel piles bound at the top with cable or wire. The term dolphin also refers to any other structure that serves the same purpose. Successful designs include sheet pile cells, single large-diameter steel piles like those employed with the DeLong Barge, and clusters of small-diameter steel pipe.



IMO STANDARD MARINE COMMUNICATION PHRASES

IV-A/5.7 - *BERTHING AND UNBERTHING*

5.7.3 - *Unberthing*

Stand by engine(s).

- Engine(s) standing by.

Are you ready to get underway?

- Yes, ready (to get underway).

- No, not ready (yet) (to get underway).

- Ready to get underway in ... minutes.

Stand by for let go.

- Standing by for let go.

Single up ... lines and... spring fore and aft.

Slack away head/stern/breast line.

Slack away fore/aft spring.

Hold on head/ atern/ breast line.

Hold on fore/aft spring.

Heave on head/ stern/breast line.

Heave on fore/aft spring.

Let go everything forward/aft.

Let go head/stern/breast line.

Let go fore/aft spring.

Let go tug line.

- ... is/are let go.

III/6.2.3.3 - *Arrival, berthing and departure*

Be ready to get underway.

- I am ready to get underway.

Get underway. Are you underway?

- Yes, I am underway.

- No, I am not underway.

Move ahead... metres.

Move astern... metres.

Pilot ordered for departing vessel for... UTC.

Onboard communications - Unmooring manoeuvre

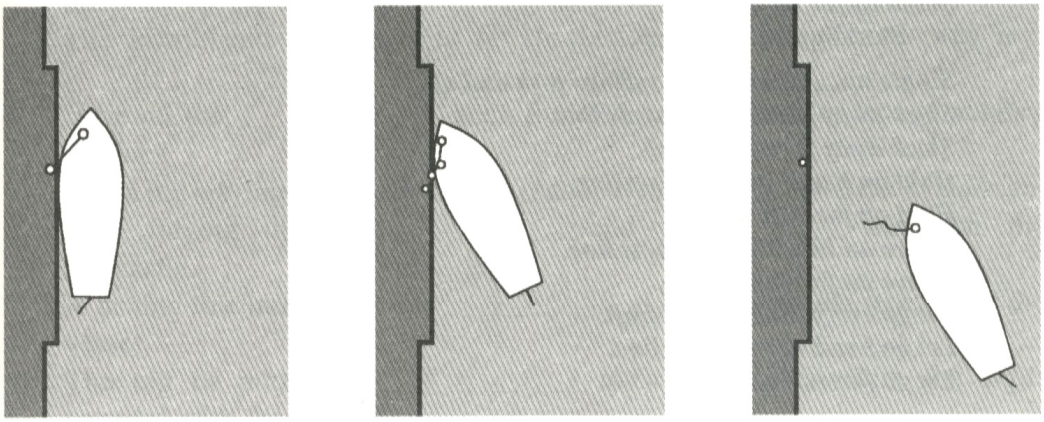
The officers and ratings are at the forward (bow) and after (stem) station of M/S Lion, standing by and waiting for master's orders. They are ready for the getting under way. Orders are made by the Pilot/Master from the bridge, i.e. the wheelhouse or wheelhouse wing.

PILOT: Are you ready to get underway?	
	MASTER: Yes, Sir/Pilot. (We are) Ready to get under way.
PILOT/MASTER: (LION BRIDGE): *Stand by engine.*	
	CHIEF ENGINEER : Stand-by engine.
LION BRIDGE: *Lion Bow, Lion Stern. This is Lion bridge. Stand by for let go.*	
	LION FORE: Lion Bridge. This is Lion Bow. Standing by for let go.
	LION AFT: Lion Bridge. This is Lion Stern. Standing by for let go.
LION BRIDGE: *Lion Bow. Single up to one* *headline and one spring.*	
Lion Stern. Single up to a breast line and one after spring.	
	LION BOW: Lion Bridge. This is Lion Bow. (Understood.) Single up to one headline and one spring.
	LION STERN: Lion Bridge. This is Lion Stern. (Understood.) Single up to a breast line and one spring. Tug made fast on starboard quarter.
AFTER A WHILE	*AFTER A WHILE*
	LION BOW: Lion Bridge. This is Lion Bow. Singled up to one headline and one spring.
	LION STERN:

	Lion Bridge. This is Lion Stern. Singled up to a breast line and one spring
LION BRID GE: *Lion Stern. Let go all aft.*	
	LION STERN: Lion Bridge. This is Lion Stern. Let go all.
After a while	*After a while*
	Lion Bridge: This is Lion Stem. All gone and clear.
LION BRIDGE: *Wheel amidships. Slow ahead.*	
	HELMSMAN: Midships. (...) Midships
	3RD MATE: Slow ahead. Sir.
LION BRIDGE: *Stop engine.*	3RD MATE: stop engine. Sir. (...) Engine stopped.
LION BRIDGE : *Half astern. Starboard 20.*	
	HELMSMAN: starboard 20. (...) Starboard 20 on. Sir.
	3RD MATE: Half astern.
LION BRIDGE: *Midships.*	
	HELMSMAN: Midships. (...) Midships on. Sir.
LION BRIDGE: *Stop engine.*	

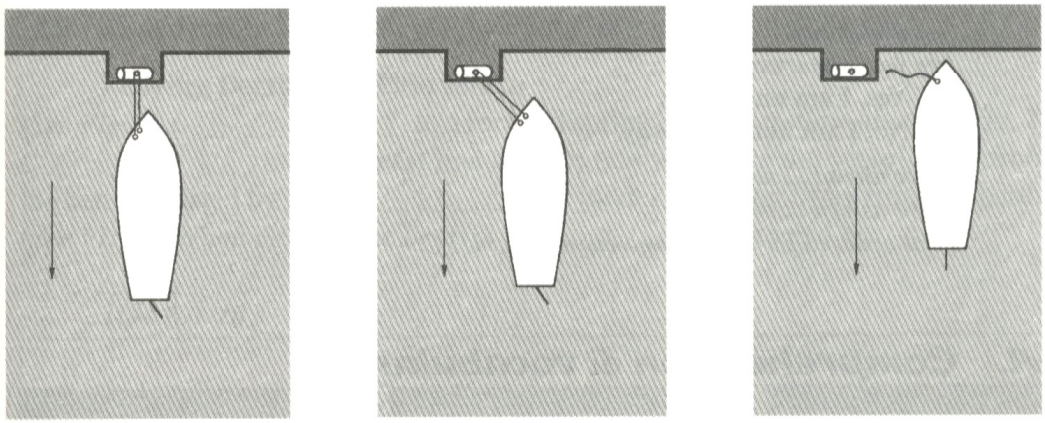
	3RD MATE: stop engine. (...) Engine stopped. Sir.
LION BRIDGE: *Lion Bow. Let go all.*	
	LION BOW: Lion Bridge. Let go all. (...) All gone and clear.
LION BRIDGE: *Slow astern. Hard a port.*	
	3RD MATE: slow astern.
	HELMSMAN Hard a port.
LION BRIDGE - *Stop engine.* *Midships.*	
	HELMSMAN: Midships. (...) Midships on. Sir 3RD MATE - Half ahead. Sir. (...) Half ahead.
	LION BRIDGE: *Half ahead.* *Starboard* *10. ... (etc.).*

Leaving Berth (Portside to)



1. Single up to forward backspring - Slow Ah
2. Stop engines - Half astern Left go backspring
3. Stop engines Full ahead

Letting Go Buoy (Tide ahead)



1. Single up to wip wire
2.
3. Let go wire - Half ahead

A. Comprehension & vocabulary

A.1 Supply the missing words from the brackets:

• draught • slack water • allowance • singling up • rudder • skipper • derricks • wind • buoys • transverse thrust • dolphins • tide • effect • engine-room telegraph • mooring • ship's whistle • current • steering gear • officer of the watch • loose gear • navigating lights

1. When taking the ship out of the harbour the pilot did not make _____ for the transverse thrust of the propeller.
2. The main factors affecting the steering of the ship are _____ , _____ , _____

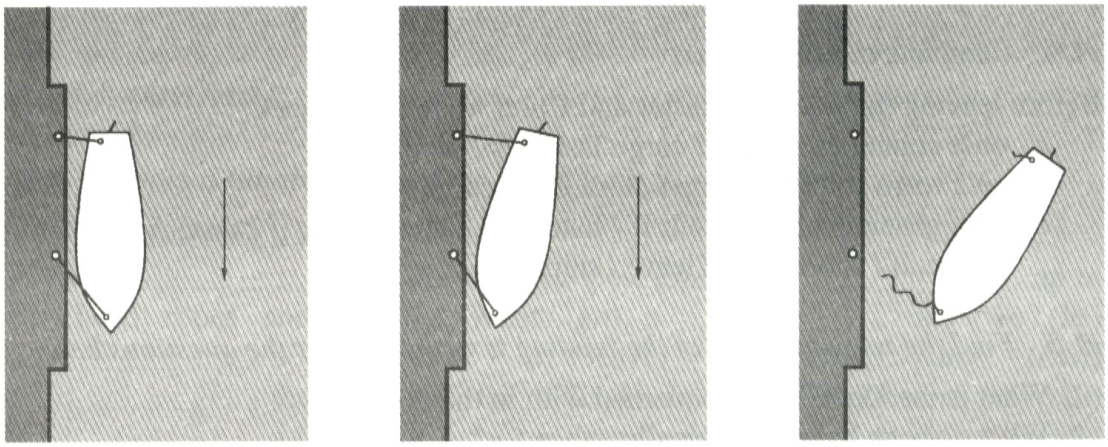
and _____ of the propeller.

3. The pilot must also know the _____ forward and aft.
4. The screw has a strong _____ on the direction of the ship.
5. In _____ all the mooring ropes should be cast off except those indicated by the Master or _____ .
6. The instruments and gears to be checked before getting under way are: _____ , the _____ , the _____ .
7. Have all the _____ been lowered and secured for heavy weather routine?
8. When the leaving dock or departure manoeuvre is finished, the deck hands are busy tidying up the _____ and _____ lines on the forecastle.
9. A fishing line has fouled our _____ obstructing the steering of the vessel.
10. The lug or pilot boat _____ must be familiar with the signs sounded with the _____ .
11. The ship could not enter the port because the berthing and leaving aids such as _____ and _____ of sufficient power were not available.
12. We had to wait for high _____ in order to be able to get out of the lock.

A.2 Complete the text he low following the sketches.

Leaving Berth with Tide astern

(See Fig. 1) 1. _____ to a forward spring and a breastline aft. *(See Fig. 2)* 2. _____ on the breast line and the tide will force the vessel away from the berth, assisted by 3. _____ the rudder hard over away from the berth. *(See Fig. 3)* When clear of the berth, 4. _____ fore and aft.



1. 2. 3. Half Astern

Tide Astern

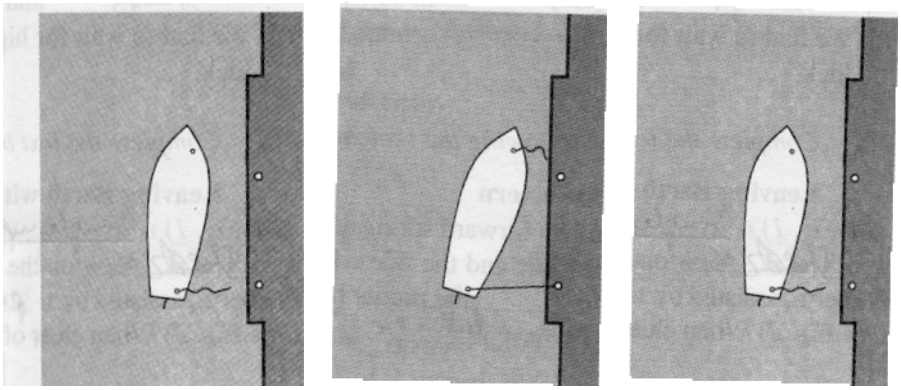
A.3 Complete the text below following the sketches:

Leaving Berth Starboard Side to

Single up to a 1. _____ forward and a 2. _____ line aft. Put the 3. _____ slow ahead and 4. _____ hard to starboard. (*See Fig.* 1). Pay out on the stern 5. _____ until the stern is clear of the 6._____ (*See Fig.* 2) Stop 7. _____, half astern and rudder 8. _____ .

Let go the *9.* _____ and check (stop) on the 10. _____ . The action of _____ is to prevent transverse 11. taking the 12. _____ to port and so forcing the bows on the 13. _____ . By binding the stern in, the bows are forced off the 14. _____ .*(See Fig. 3)* When all is 15. _____ , stop engines and let go the 16. _____ .

ST'B'D Side to --



1. *Slow Ah.*
Slack away breast line

2. Stop. Slow astern. Let go spring. Check breastline.

3. Stop. Let go breastline. Full ahead.

A. 4 Complete the sentences:

Before leaving the port the Master and Chief Mate must check:

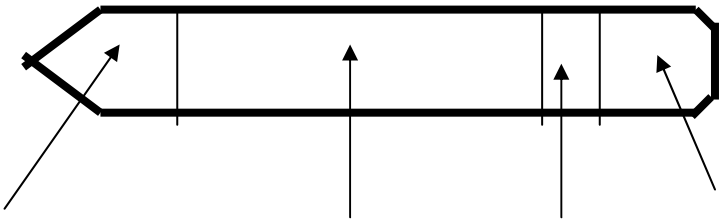
a. on a container ship: if / cargo lashings / secure
b. on a ro-ro ship: if / ramp / close and / cargo / secure
c. on a general cargo vessel: if / hatches / batten down, if / derricks / lower / secure, if / shore gang / leave / ship

A.5 Find the relevant parts of the reading text and answer the questions below:

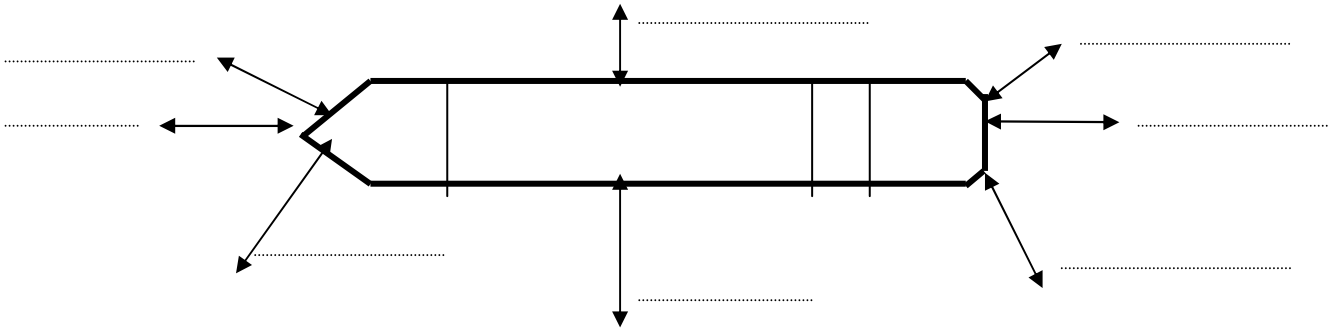
1. What is the Dock Pilot concerned with in the docks?
2. What does he have to make allowance for?
3. What must the River Pilot think of?
4. What must a Pilot know before he takes a ship through the basins?
5. What is used to assist a ship to leave the port?
6. Does she need her own engine power?
7. How will you single up aft and forward?
8. Which equipment is to be tested and made ready for going to sea?
9. What must we be sure of before leaving the dock?
10. What must the Master be adept at?
11. What is the best time to berth or leave?
12. When are we to turn the vessel's stem into the tide or current running?

A.6 Ship Handling Terms - Test

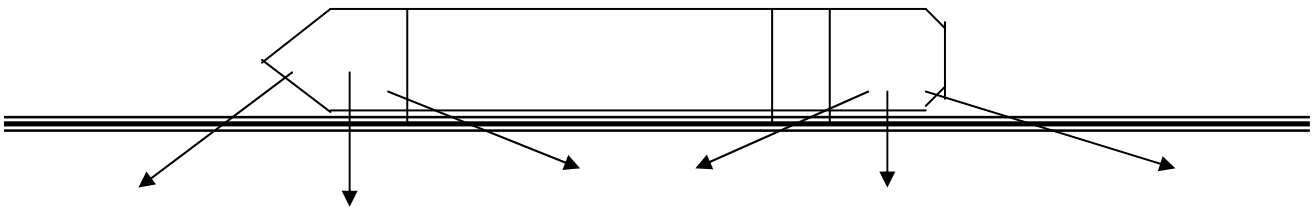
1. Write down the names of the four main parts of the ship



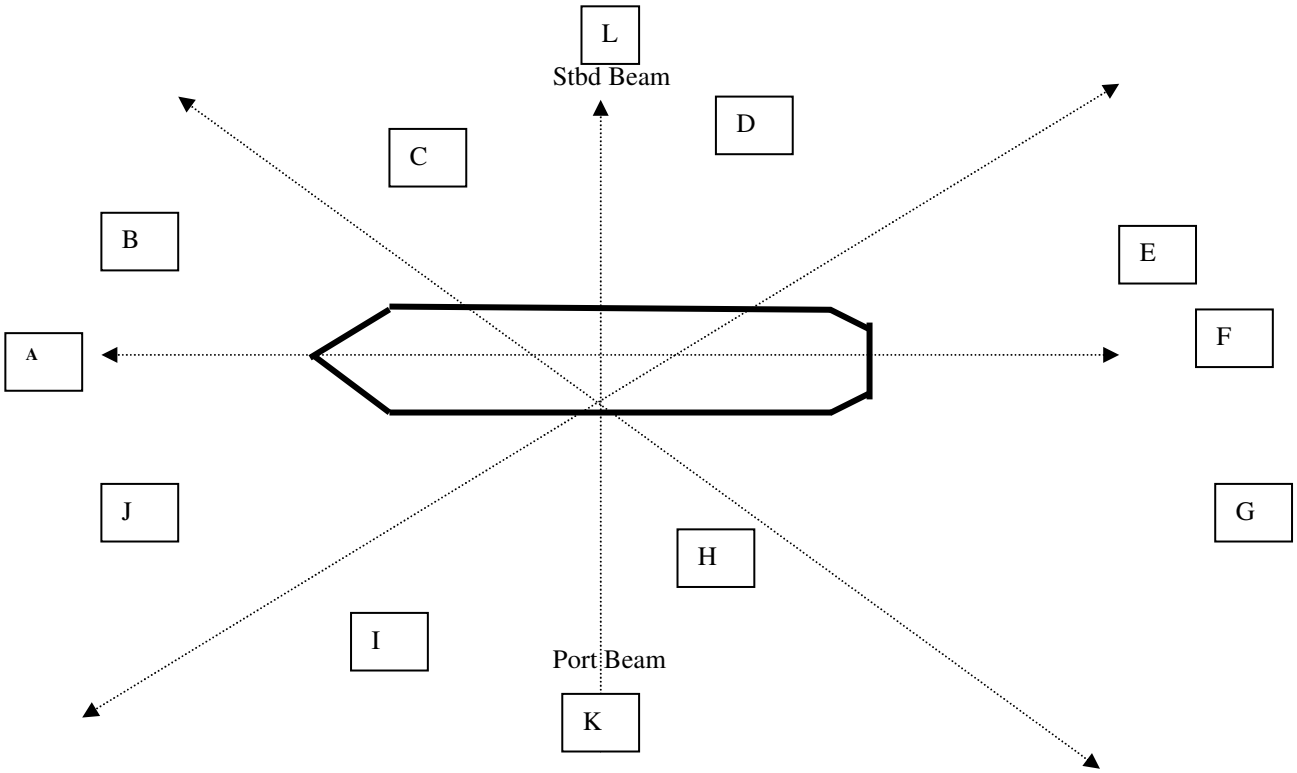
2. Which side of the ship is shown by the following arrows?



3. Write down the names of the mooring lines



4. Positions around the ship. Write down the sentences showing where the ships are in respect of your own ship. Two sentences have been done for you:



- Ship A is ahead of my ship.
- Ship B _____
- Ship C _____
- Ship D _____
- Ship E _____
- Ship F _____
- Ship G _____
- Ship H is abaft the beam to port.
- Ship I _____
- Ship J _____
- Ship K _____ (nine o clock)
- Ship L _____ (three o'clock)

5. Write down the opposite line handling terms:

LET GO	⟷	_____
_____	⟷	**HAUL IN**
SLACK AWAY	⟷	_____

6. Translate the following line handling terms into your own language:

- ***LET GO*** (the line) _____
- ***MAKE FAST*** _____
- ***PAY OUT*** _____
- ***HAUL / HEAVE IN*** _____
- ***HEAVE ON*** _____
- ***SLACK AWAY*** _____

7. ***CAST OFF THE LINE*** is the same as _____ THE LINE.

B. Grammar

B.1 Supply a suitable form of the verbs from the brackets:

Verbs used in unmooring a ship

(Cast) 1. _____ off the breast ropes. (*Single*) 2. _____ up to the head ropes and springs. What (*go*) 3. _____ ? We (*be*) 4. _____

Nearly ready to lave. The dock party (*cast*) 5. _____ the ropes of the bollard on the dock side and we (*put*) 6. _____ a couple of turns on the warping barrel of the windlass and (*haul*) 7. _____ each wire back on board.

Here (*come*) 8. _____ one of the tugs. She (*present*) 9. _____ her stern to us and we (*pass*) 10. _____ a big towing line down to her. The Chippy (*bend*) 11. _____ a heaving line onto the towing hawser and (*heave*) 12. _____ it across. He now (*pay out*) 13. _____ the cable as the rope-runners (*haul*) 14. _____ it in. The towing hawser (*be*) 15. _____ now on the hook and (*make*) 16. _____ fast.

B.2 Supply the following terms as necessary:

(aboard, underway, on the bow, fore, always, aft, fast)

When the ship slips her moorings the order “Stand by 1. _____ and 2. _____ is given after the ship’s gangway is hauled 3. _____ . With his knowledge of local tides, currents and hazards the Pilot will conduct the operation, assisted as 4. _____ by the Captain and his officers. Tugs are sometimes made 5. _____ to the vessel, either on the quarter or 6. _____ to assist in the handling of the ship. When the ship has left the port she is 9. _____ .

A. 6 Supply the with appropriate term from the words below (note that the term **bollard** *appears three times):*

bollard, mooring buoy, roller fairlead,
breast line, bitts/bollards, forward spring, windlass,
capstan, break of forecastle, head line, buoy line