CONTENTS

NAVIGATION WITH A PILOT ONBOARD

1. REFERENCE/GUIDANCE

See I.C.S. publication **BRIDGE PROCEDURES GUIDE**

2. PILOTAGE - ACCOUNTABILITY/COMPETENCE

The safe progress of the ship as planned should be monitored closely at all times. This will also include track monitoring and regular fixing of the position of the ship, particularly after each course alteration, and monitoring underkeel clearance.

Verbal orders from the pilot also need to be checked to confirm that they have been carried out correctly. This will include monitoring both the rudder angle and rpm indicators when helm and engine orders are given.

2.1. The presence of a Pilot on board in no way relieves the Master of responsibility for the safe navigation of the vessel, which he/she must continue to oversee, nor does it relieve the OOW of his/her duties and obligations for the safety of the ship.

2.2. The Master must employ a Pilot whenever safety of navigation or local regulations makes this necessary or mandatory.

2.3. Although the Pilot is customarily treated as a trusted advisor and as a temporary member of the bridge team, the Master must not hesitate to warn or dismiss him/her, if in the Masters opinion the Pilot is inadequate or endangers the ship's safety. This is to be recorded in the Deck Log Book[1].

3. MONITORING OF PILOT

3.1. The Master and OOW must remain alert and attentive to the Pilot's handling of the vessel.

3.2. The Master must position himself to hear all the instructions given by the Pilot to the OOW, Helmsman, additional staff on Bridge and to the Tug(s).

3.3. These instructions are deemed to be from the Master, unless modified or rescinded by him. The silence of the Master implies tacit approval of the Pilot's orders/instructions.

3.4. The Master must insist that the Pilot comply with the appropriate COLREGS, observe speed restrictions when navigating rivers and narrow channels and when passing close to piers, marinas, small craft underway or at anchor, vessels with tows and moored vessels.

[1] W 08 / 2024

4. MANUAL STEERING

The manual steering system shall be used while the vessel is under pilotage, and a Helmsman shall be included in the bridge team.

5. ENGINE ROOM TEAM

The engine room shall be manned at all times during pilotage.

6. MONITORING OF VESSEL'S PROGRESS

6.1. Courses must be plotted on the chart when within port limits, even if the passage is very short e.g. from berth to inner anchorage.

6.2. The OOW shall monitor the vessel's progress along the planned track in accordance with the passage plan using both visual and radar position fixing and radar parallel indexing whenever possible.

6.3. Positions should be plotted on the charts when appropriate. In addition, the vessels position shall be entered into the Bell book at appropriate intervals and whenever a course alteration is made,

6.4. The OOW shall frequently check that the Helmsman is steering the correct courses.

7. COMMUNICATING ORDERS / INSTRUCTIONS

7.1. The I.M.O. Standard Marine Navigational Vocabulary (English) to be used at all times while under pilotage.

NOTE: It is of special importance that extra care is taken by the Master and OOW when the Pilot's native language is different from that of the Helmsman or themselves

7.2. Helm orders must be repeated by the Helmsman and checked for proper execution by the OOW.

7.3. Engine orders must be repeated by the responsible Officer operating the telegraph or bridge engine control. Execution of the orders must be checked by the OOW.

8. PILOT CARD - SHIP'S PARTICULARS

8.1. A completed PILOT CARD, (refer company Form 1.5.2A[2]), shall be handed to each and every Pilot (unless travelling as a 'passenger') who boards the vessel.

8.2. If darkness prevails and the Pilot cannot read the 'card', it shall still be handed to him and the data will be discussed verbally.

8.3. Pilot is to be requested to sign the Pilot card after Master/Pilot information exchange.[3]

9. PILOT / MASTER DATA EXCHANGE

The Master and pilot information exchanges must be completed by both the Master and the pilot. Each Master to pilot exchange must include a minimum under keel clearance calculation and limitations relating to the maximum permissible bollard pull from tugs that are to be utilised, taking into consideration the SWL of the fairleads and bitts.

Details of defective equipment that might affect the safe navigation of the vessel must be recorded on the Master to pilot exchange.

9.1. The following relevant subjects must be advised by the Master to the Pilot:

Underway at Sea

a. Vessel's present heading, and compass error, if any.
b. Engine speed and speed of ship through the water.
c. Position of the helm.
d. Position of the ship by bearing and distance from a prominent navigation mark.
e. Details of close-quarter traffic.
f. Draft, trim and depth of water below keel. And possibly status of stability.
g. Pertinent details of the vessel's handling characteristics.
h. Any limitations in operating ability, whether due to malfunction or any other cause.
i. Cargo carried (I.M.D.G. code)

Berthed in Port

a. Vessel's state of readiness.
b. Draft, trim and depth below keel.
c. Pertinent details of vessel's handling characteristics.

[2] W 08 / 2024
[3] W 08 / 2024

d. Any limitations in operating ability, whatever the cause.

The Pilot can assume his duties on the Bridge after the foregoing has been conveyed to him.

The Master and the Pilot shall then discuss the proposed operation and passage plan. Both must have a clear understanding and agreement of all aspects of it. The following should be among the points they consider:

a. Planned navigational route. Density of traffic expected.
b. State of tide, current and wind along the route and at berth.
c. Depth of water along route, making allowance for squat.
d. Speed at various points along the route.
e. Limiting conditions which would cause operation to be abandoned. For example, reduced visibility.
f. Alternative action if operation is abandoned.
g. Use of anchors, identification of suitable anchorage and emergency anchorage.
h. Manoeuvres requiring tugs.
i. Number and power of tugs.
j. Disposition of tugs.
k. Use of ship or tug lines.
l. Communication procedures, from ship to shore, and from ship to tug.
m. Crew standby requirements.
n. The side of the vessel to come alongside against the berth.
o. Maximum wind force and direction acceptable during mooring and unmooring.
p. Details of the mooring arrangement. Berth number.
q. Sequence and method of line handling during mooring or unmooring.
r. Whether Pilot is to be changed, together with the method and position when changing Pilot.
s. Disembarkation position.
t. Method of disembarkation.

10. PILOTS - EMBARKATION/DISEMBARKATION

10.1. **PILOT LADDERS** must conform to the parameters laid down in:

SOLAS, Chapter V, Regulation 23 and in accordance with A 1045(27) and MSC 308(88) which entered into force on 01 July 2012.

I.M.P.A. (Int. Maritime Pilot Ass.) recommendations.

10.2. Ladders must be dedicated and used for Pilots only.

10.3. Ladders must always be maintained in a good, clean condition.

10.4. Ladders to be rigged as per poster provided in the **BRIDGE PROCEDURES GUIDE.**

10.5. Associated equipment:

a. Two-man ropes.
b. Lifebuoy with self-igniting light; and (buoyant) line
c. Heaving line (buoyant)
d. Stanchions and bulwark ladders
e. Adequate lighting
f. Means of communication: bridge - deck.

10.6. If bad weather prevails and it is unsafe to disembark a pilot consideration should be given to carry the pilot to the next port.

11. SUPERVISION STAFF

A responsible Deck Officer and Rating shall be in attendance at the embarkation/disembarkation point.

12. USE OF TUGS

Tugs are an expensive component of port charges and charterers often request Master to minimize use of tugs.

Masters must assess the vessel size, draft, state of tide, prevailing weather conditions, berth restrictions, space availability, ship's manoeuvring characteristics, past experience and any other limitations before entering or leaving port and decide on the tug requirements.

Masters shall be the final judge of tug requirements and under no circumstances shall the safety of the vessel be compromised.

Masters must closely liaise with the pilots and discuss the passage plan and berthing plan with the pilot. A better understanding of the pilot intentions goes a long way in deciding the tug requirements.

In some ports, the pilot may insist on more than required (compulsory) number of tugs. If in the Master's judgment the extra tug is not necessary in the prevailing conditions and situational circumstances and when faced with such circumstance, the Master must discuss the matter with the Pilot. If the Pilot gives a good reason for the extra tug, or is otherwise adamant about it for whatever reason, then we recommend same be accepted to avoid a conflict/confrontation with the Pilot. Master must log the same in the movement log and later at the earliest convenience report the same to office, charterers and port agents.

The Master must be especially careful in ports where the custom is not to make tugs fast and only use the tugs as standby or for pushing.

Masters must discuss with the pilot if he has doubts about the safety of the vessel, due to not making fast the tug. If a crisis develops and the tug is merely escorting, there may not be sufficient time to make fast the tug to prevent the accident.

Optimum use should be made of the tugs employed, and merely escorting a vessel until the last minute may prove detrimental if a crisis develops at an inopportune moment.

Any instances where Master has doubts that there is / was insufficient tug assistance must be reported to the office explaining the manoeuvre fully and reasons for the doubts.

During operations with tugs the following shall be observed:

In general, the ship's speed to connect tugs should never be more than 6 knots over the ground.

- No lines shall be passed to or taken from tugs without orders from the bridge.
- Care should be exercised to ensure that tug is suitably fendered.
- Tugs should push at designated strong points which are indicated by markings.

Care shall be taken to keep the propeller clear of towing lines, and the Bridge shall be informed when the propeller is not clear.

- Vessel must not reduce too many lines before the tugs are made fast and ready to assist. This is extremely important on ships with high windage area.
- It should be noted that tugs have certain operating limits and that, particularly in berths subject to waves, these limits are likely to be exceeded.
- On tankers, before tugs come alongside to assist a tanker, all cargo and ballast tank lids and ullage ports should be closed.

13. RISK OF TUG CAPSIZING DUE TO GIRTING OR GRIDING

Girting may also be referred to as girthing, tripping or girding. A towline under tension will exert a heeling moment on the tug if the line is secured around amidships and is leading off towards the beam. A righting lever is formed as the centre of buoyancy moves towards the centre of the tug's underwater volume, countering the heeling moment and pushing the tug back upright. However, if the force in the towline is sufficiently powerful, it may overcome the tug's righting lever and cause it to capsize or "girt". Girting can occur very rapidly and incidents have occurred where crewmembers have not been able to escape in time.

Modern tugs are normally fitted with a substantial towline lead either at the bow or near the stern to minimise the likelihood of girting. Older conventional tugs generally have a towing hook, H Frame or winch mounted at or near amidships and are more likelihood of girting. To reduce the risk, various rigging arrangements, fixtures and fittings are used on conventional tugs.

A suitable maximum speed for the operation should be determined and agreed by all parties beforehand as part of a comprehensive planning process, allowing time for remedial action to be taken if one of the tugs gets into difficulties. The towage operation should be maintained at a safe speed, commensurate with the conditions and circumstances.

The Pilot/Master and Tug master should ensure that effective communication is maintained throughout the operation. The Pilot/Master should ensure that any change from the intended plan is communicated to Tug master in advance.

Most ship towage manoeuvres should be carried out with the minimum of way on the ship. This is especially true when swinging, and no way should be on the ship when working a conventional tug stern to stern.

14. BOW THRUSTER (IF FITTED)[4]

Bow thruster helps in better manoeuvrability of the vessel at lower speeds and is generally used for manoeuvring the ship when entering or leaving a port and assisting tugboats in berthing/unberthing the ship.

The thrust force produced by the motor to move the ship depends on various parameters such as hull design, power source, the design of tunnel, use of grids, draft and load of the vessel etc.

The condition of the weather and state of the water also plays a vital role in Bow Thruster performance.

Following things to be kept in mind when operating the Bow Thrusters:

- Ensure to start the motor well ahead of the thruster operation and open the hydraulic lines

[4] W 26 / 2020 (Entire Section)

- Never operate the thruster beyond its rated load else it may lead to tripping of the motor
- Gradually increase the capacity. Avoid sudden changes in the Bow Thruster movement.
- The thrusters are considered as an “on load” starting device, i.e. they should only be operated when they are submerged in water.
- In the case of installation of more than one panel, ensure the thruster is operated from only one panel at a time.
- Bow thruster which impart lateral or athwart ship forces, is effective only when the speed is on the lower side around 3 knots and more effective when going astern.

15. NON-COMPULSORY PILOTAGES[5]

There are some areas like Japan inland waters, Dardanelles/Istanbul strait, Bosporus strait, Danish waters etc where pilotage may not be compulsory. (Reference shall be made to the relevant bridge publications to ascertain if pilotage is compulsory or not).

If the charterers request the Master to conduct self-pilotage in these areas, the Master can agree if he/she has already conducted self -pilotage in these areas and is confident of the same.

Prior conducting any self-pilotage, the Master must obtain approval from the Company.

The Company may approve self-pilotage on a case by case basis based on a risk assessment and considering the following:

- The Master is experienced in navigating in these areas
- The Master and bridge team are adequately rested
- Navigation Equipment and engine manoeuvring capabilities.
- There are no traffic concerns in these areas
- Weather, tide, currents are favourable
- Visibility, day or night passage
- Draft of vessel, UKC is suitable for the passage
- Large scale / updated charts are available on board
- An extra duty officer is placed on bridge
- Pre-Pilotage meeting is carried out and the passage plan discussed with the bridge team prior the vessel entering Pilotage waters.

If the Master has not conducted self -pilotage in these areas and is not confident, he/she shall inform the charterers and operators well in time and request for a pilot.

[5] W 46 / 2020 (Entire Section)

The Charterers/ operators may compel the Master to conduct self-pilotage in order to save costs and may offer attractive incentives but the Master must be firm on his decision and shall not agree for self-pilotage if he/she is not confident. The company will support Master's decision in this regard.

The safety of life and that of the vessel must not be compromised under any circumstances.

APPENDIX 1 – GUIDELINES FOR USE OF PILOT LADDER AND COMBINATION LADDER[6]

The objective of this section is to highlight safety concerns associated with Marine Pilot Transfer arrangements onboard vessels and the marine transfer process.

Pilots join vessels to assist the Master and crew during critical and potentially hazardous phases of navigation. Qualified pilots possess particular local knowledge pertinent to the voyage and have the necessary ship-handling skills to assist the safe arrival and departure of vessels.

Normally, pilots board and disembark using a traditional pilot ladder from and to an awaiting pilot boat. However, this can be a dangerous procedure if those involved do not adhere to IMO standards or fail to practice acceptable seamanship skills.

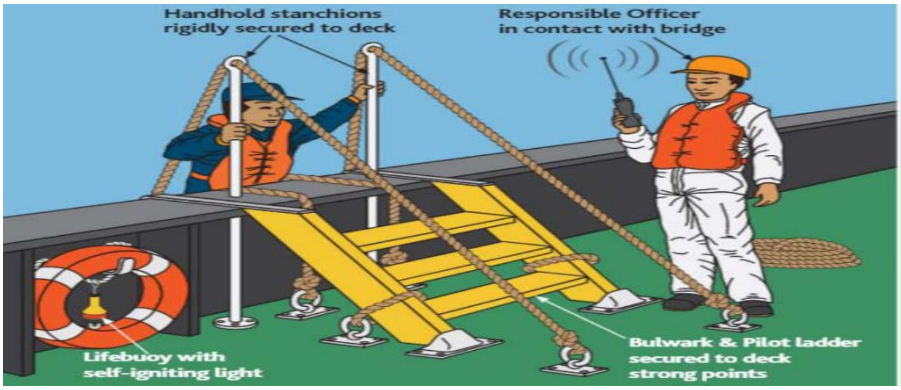
A number of pilots have died as a result of accidents while boarding/disembarking from vessels, and many have been seriously injured. Furthermore, deficiencies with regards to the boarding arrangements and unsafe rigging of pilot ladders continue to be detected during port state control inspections, resulting in delays and financial penalties for the operator.

1. FOR THE SAFE EMBARKATION AND DISEMBARKATION OF THE PILOT, THE FOLLOWING GUIDELINES SHALL BE COMPLIED WITH :

- All Pilot ladders, manropes and associated equipment shall be used only for marine transfers (pilots and other personnel) and must not be used for any other operations onboard the vessel such as for draft readings or any maintenance work. All equipment shall be clearly marked as "**For Marine Transfers only**"
- When not in use, the ladder shall not be kept on deck. The ladder shall be properly stowed in an appropriate store (considering the width of the spreaders) to protect from exposure to the marine environment.
- Risk assessment and toolbox meeting shall be conducted prior rigging pilot ladder.
- Crew shall wear proper PPE including life vest, lifeline, harness etc. At all times during the rigging, use and de-rigging of any pilot transfer arrangements there should be no risk to the ship's crew.
- The ladder, man ropes, securing arrangements like eye pads etc. shall be thoroughly inspected prior use. The ladder should be clean and dry, free of oil, grease or chemicals.
- Pilot ladder shall normally be rigged 1.5 meters above the water (unless otherwise instructed by the pilots). Precautions shall be taken to avoid the boat making contact and damaging the ladder steps.

[6] W 34 / 2023

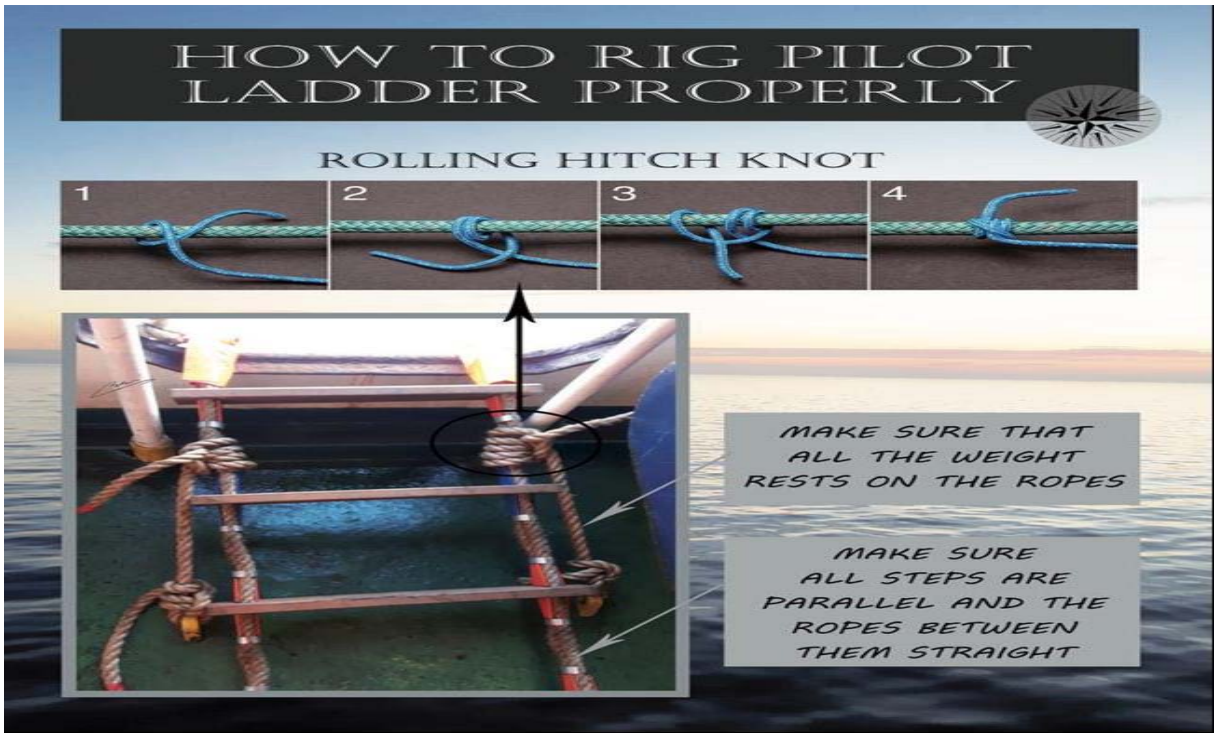
- The rigging of pilot ladders must be carried out by trained and competent crew ensuring that safety of the crew and the transfer process is not compromised.
- The rigging of the pilot transfer arrangements and the embarkation of a pilot MUST be supervised by a responsible officer having means of communication with the navigation bridge and who shall also arrange for the escort of the pilot by a safe route to and from the navigation bridge. The officer shall ensure the ladder is properly secured.

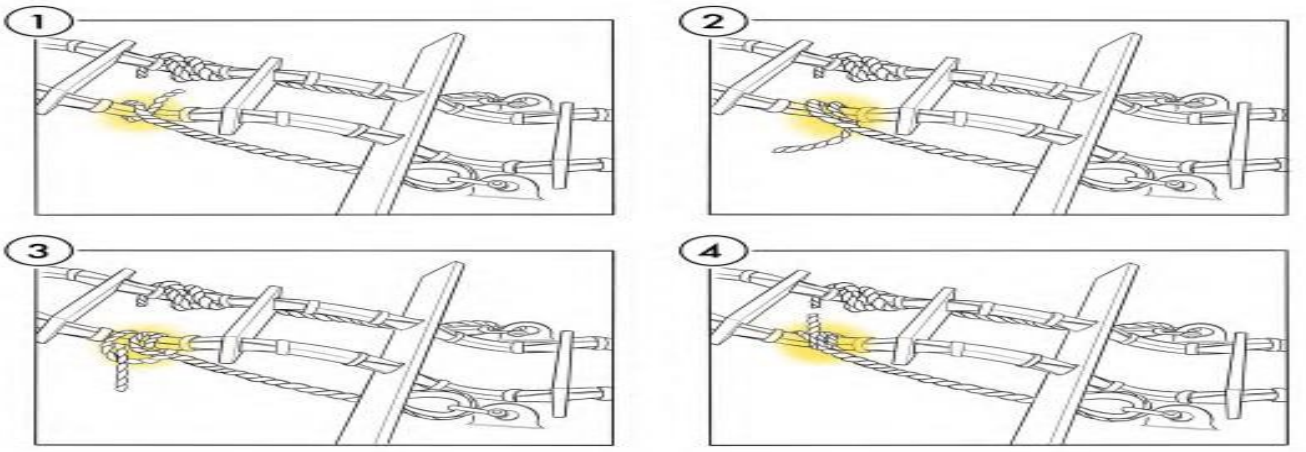


- A lifebuoy with Self igniting light must be kept ready in the vicinity.
- The area at the top of the ladder should be free of obstructions.
- The area shall be well illuminated during hours of darkness.
- The pilot transfer area shall be painted with non-slip yellow paint.
- Trip hazards in the pilot transfer area shall be highlighted with yellow paint.
- The Master should steer a course to provide good lee on the side where the ladder is to be rigged and to avoid any rolling or pitching of the vessel.
- Proper communication shall be established between the Bridge, the responsible officer on deck and the pilot boat.
- Correct heaving lines shall be provided by vessels. The heaving lines shall be 9-12mm in diameter, with monkey fist and with a loop / eye at the end lowered to the pilot vessel. Use of weighted heaving lines has the potential to injure both the pilot vessel crew and the marine pilot and are strictly prohibited.

- Two good manila manropes of not less than **28 mm and not more than 32 mm** in diameter properly secured to the ship, if required by the pilot. The man ropes shall be rigged and secured to the dedicated deck eyes in the Pilot Transfer area.
- Rolling hitch knot shall be used to rig and secure the Pilot ladder to the dedicated strong points like deck eyes in the Pilot Transfer area. These rope strops should be constructed

from manila rope with a breaking strength of not less than 2.4 metric Tonnes /24 Kilo Newtons (typically 18mm diameter). When not in use the strops should be stowed inside away from paints, chemicals or any other substance that could damage them.





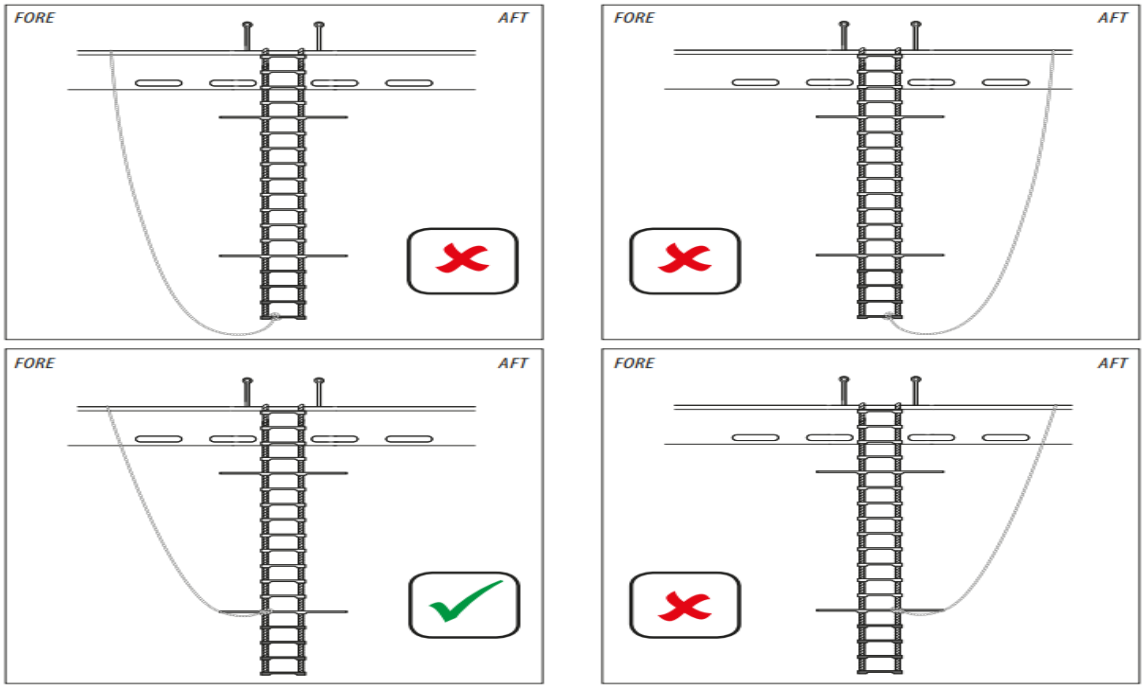
- Always use rolling hitch knot to secure the pilot ladder to strong points on deck as it has the below advantages
  - No stress on the steps
  - No stress on the chocks
  - Side ropes will not be damaged
  - Ladder will last longer

- **Use of shackles for securing - The use of shackles to secure / choke pilot ladder side ropes when securing on deck is PROHIBITED.** Using shackles to shorten / secure ladders causes the weight of the ladder to be taken up by the shackles impacting directly against the mechanical securing clamps (widgets) which secure the ladders treads in place, including the seizing twine and will eventually damage them

(Examples of non-compliant securing methods using shackles)

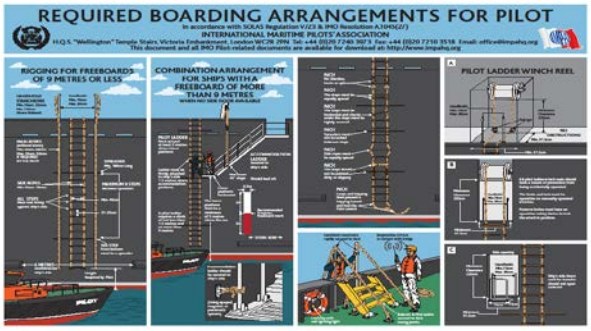
- **Attention to end points (Thimbles)** - Corroded end point thimbles can damage the side ropes, thereby leading to the failure of the side ropes. The rope portion around the thimble must be inspected as part of the inspection routine. Heat shrunk plastic covering for end points must not be used as it prevents detailed inspection of the rope area

- Retrieval lines (sometimes called tripping lines) are often used to lift the pilot ladder. These lines are potentially dangerous, they may foul the pilot vessel or be a hazard to the pilot's feet. ***As far as possible, avoid use of tripping lines***. When a retrieval line is considered necessary to ensure the safe rigging of a pilot ladder, the line should be fastened at or above the last spreader step and should lead forward. The retrieval line should not hinder the pilot or obstruct the safe approach of the pilot boat. (IMO Resolution A.1045(27) 2.1.5).



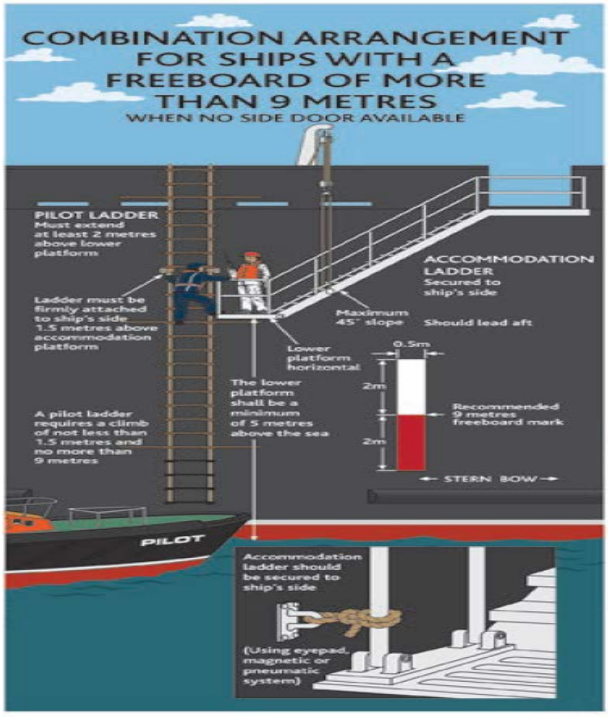
- Safe, convenient, and unobstructed passage to be provided from the pilot boarding area to and from the vessel's navigation bridge.

- Pilot ladders must be certified by the manufacturer and conform to the parameters laid down in SOLAS, Chapter V, Regulation 23 and in accordance with A 1045(27).
- Vessels are required to maintain certificates of pilot ladder, manropes and associated ropes, shackles, thimbles used in the rigging of pilot ladder.
- Vessels shall maintain records of date of manufacture and date put in use of pilot ladder, manropes and associated ropes.
- The rigging shall be in compliance with "**IMPA REQUIRED BOARDING ARRANGEMENTS FOR PILOT**" poster.

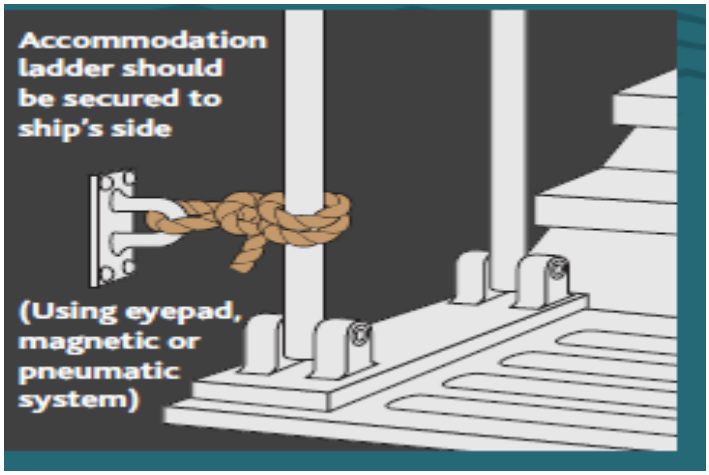


2. ADDITIONAL GUIDELINES FOR USE OF COMBINATION LADDER

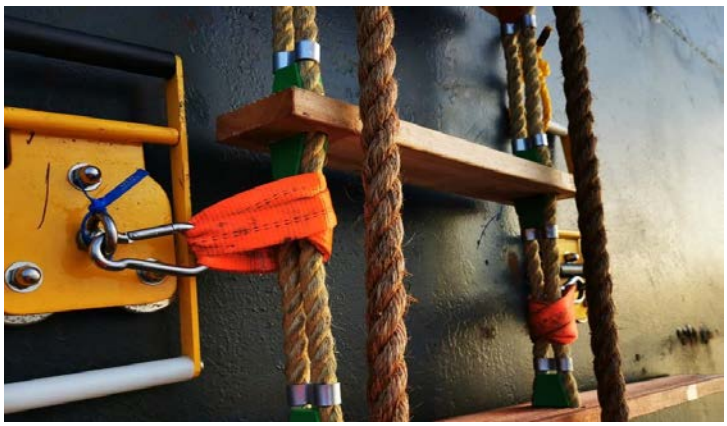
- A combination ladder shall be used when the freeboard is more than 9m.
- The rigging shall be in compliance with "IMPA REQUIRED BOARDING ARRANGEMENTS FOR PILOT" poster.



- When a combination ladder is used, the lower platform of the accommodation ladder should be in a horizontal position and secured to the ship's side. The lower platform shall be a minimum of 5 metres above the sea level. The angle of slope of the ladder shall not exceed 45°



- Each step of the pilot ladder MUST rest firmly against the ship's side. The pilot ladder MUST be secured to ship's side 1.5 meters above accommodation platform using eye pad or handhold or by a mechanical device such as magnetic clamps or a pneumatic suction pad.



- The ladder and platform should be equipped on both sides with stanchions and rigid handrails, but if hand ropes are used, they should be tight and properly secured. The vertical space between the handrail or hand rope and the stringers of the ladder should be securely fenced.

Note:

Any person on board irrespective of rank, who feels or observes that the rigging / unrigging of the pilot ladder is being carried out in an unsafe manner has the authority to intervene and stop the job and report the matter to the Safety Officer or the Master who will review the prevailing conditions and controls existing, prior resuming the job.

Maintenance of pilot ladder shall be carried out as per Mespas[7].

[7] W 03 / 2024