AIMPA

(ALL INDIA MARITIME PILOT' ASSOCIATION)

GUIDANCE TO SHIPS FOR SAFE RIGGING OF PILOT LADDERS

Contents

Introduction

Ships that require the services of a pilot need to ensure that the Pilot Transfer Arrangements (PTA) they provide are in compliance with the requirements prescribed under SOLAS V/23 and IMO Resolution A.1045(27) [as amended by IMO Resolution A.1108(29)]. Ships failing to do so may be considered to be in serious breach of their responsibility by the concerned authorities. Ships may suffer delays, penalties and/or be subjected to action via Port State Control (PSC) as a result of corrective action by the Authorities.

Ships should therefore be prepared to be asked at the Pilot Station to confirm that their PTA are in compliance with the above regulations.

It is common for ships to be provided with "bridge posters" approved by the IMO which show, by diagrams, how to rig PTA in accordance with the requirements. There may be additional guidance in the shipboard training manuals on rigging of safe PTA. Despite this it is noticed by many pilots in India that far too many ships provide non-compliant PTA. It shows that there are shortcomings in the existing guidance provided to ships.

Therefore, in addition to the guidance already provided on board your ship, you should pay attention to the guidance in this document. Because it provides more detailed guidance on certain specific aspects of pilot transfer arrangements to better ensure that they will be in compliance with the requirements.

The more detailed guidance is as follows.

A) Relevant Parts of the Regulations and Standards (for ready reference only)

1. SOLAS V/23

"2.4 All pilot ladders used for pilot transfer shall be clearly identified with tags or other permanent marking so as to enable identification of each appliance for the purpose of survey, inspection and record keeping. A record shall be kept on the ship as to the date the identified ladder is placed into service and any repairs effected."

As per SOLAS I/8**,** pilot ladders are part of the safety equipment on board of cargo ships over 500 GT. They are therefore mentioned in the **Cargo Ship Safety Equipment Certificate.** As a result of this, pilot ladders must have a valid certificate, which must be on board at all times.

Pilot ladders must be **inspected before every use**, as well as on a regular basis. Records of maintenance, repair and inspections of pilot ladders shall be available for examination by authorities.

2. IMO Res. A 1045(27)

Section 2 - PILOT LADDERS

"A pilot ladder should be certified by the manufacturer as complying with this section or with the requirements of an international standard acceptable to the Organization"[1]

([1]) = the acceptable standard referred to in the said IMO resolution is "ISO:799—1 (2019)"

3. ISO 799-1: 2019(E)

Pilot ladders over 30 months old must have a certificate of strength testing. Pilot ladders that fail an inspection, or that are over 30 months old and have no strength testing certificate, should never be used.

"2.1.1 The securing strong points, shackles and securing ropes should be at least as strong as the side ropes specified in section 2.2"

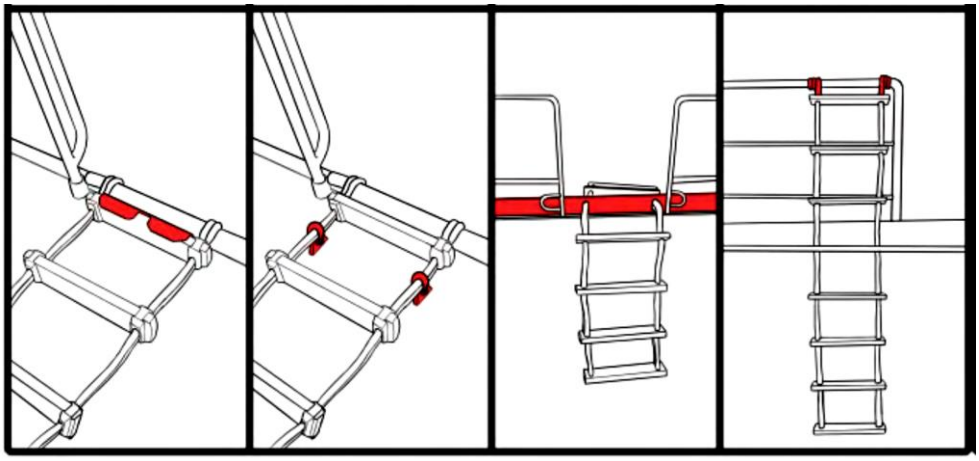
Section 2.2 states that the side ropes should consist of a rope having a minimum breaking load of not less than 24kN force (about 2.5T). Therefore, the shackles and securing points should be at least as strong (SWL about 3T or more)

B) Common Examples of Non-Compliant Securing of Ladders

A few examples of bad practices that occur around the world are shown below in Fig-1. There could more methods – all are unacceptable. Only the "rolling hitch" method described in this guidance is acceptable as it is considered to be "acceptable practice" by pilots across the world.

Fig-1 **Ladder Secured Using**

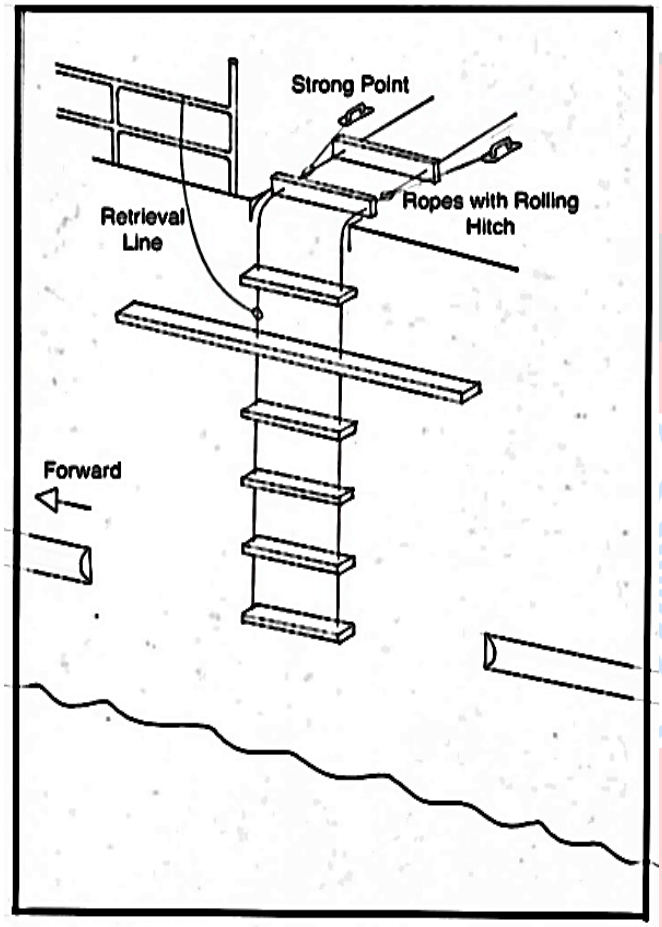
Bracket (tongue) **Shackles** **Spreader** **Railings**



ALL OF THE ABOVE ARE NOT ALLOWED

C) Most Acceptable Securing Method: uses a "Rolling Hitch"

The ladder must be secured only to the **designated** strong points. The most acceptable practice, as described below, shall be adopted. This method, of securing a ladder at an intermediate length, may be referred to as the "**Rolling Hitch Method**". See Fig-2 to Fig-5 below



The rolling hitch method uses a DEDICATED pair of securing ropes taken from a certified coil of rope. One end is secured to the designated strong point for securing the ladder. The other end is secured to the ladder by applying a rolling hitch around the side ropes of the ladder between a suitable pair of ladder steps. It must be ensured that after securing the rope length is equal to prevent the ladder steps from become sloping (slanted). After applying the rolling hitch, the arrangement must be tested by stepping firmly several times on a step which is outboard of the rolling hitch. This is to check that the rolling hitch turns are tight and are gripping the side ropes. The securing ropes shall be of a minimum breaking load not less than 24kN force (2.5 T approx.) These securing ropes shall be used only for securing the pilot ladder and no other purpose.

FIG-2

OVER ALL VIEW OF A PILOT LADDER SECURED USING THE "ROLLING HITCH METHOD"

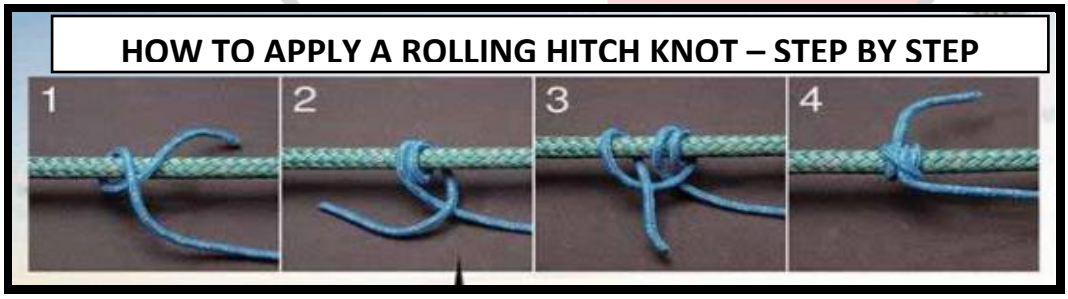
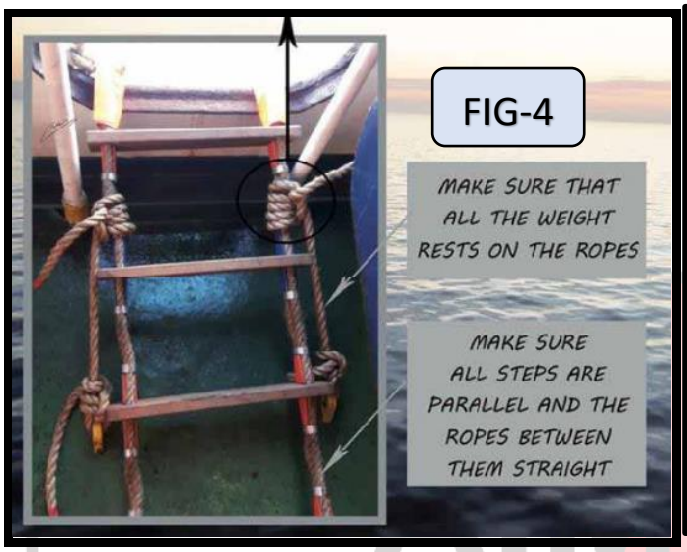


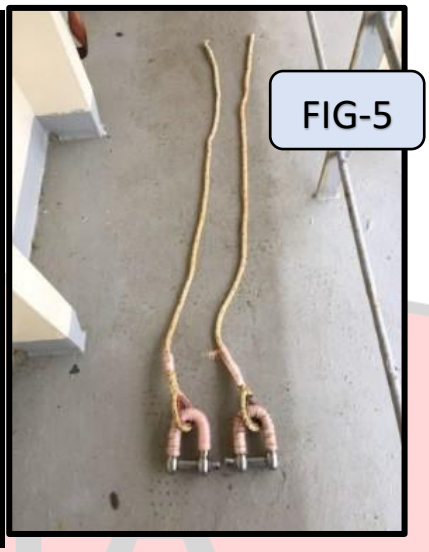
FIG-3

Ship side

Deck securing point



LADDER SECURED USING ROLLING HITCH



DEDICATED SECURING STROPS

1. It is strongly recommended that the securing ropes for the rolling hitch method be in the form of a pair of dedicated "strops" (Fig-5 above). That is, one end is spliced over a thimble and the other end is seized and whipped to prevent it from fraying. The thimble end can then be simply shackled on to the designated strong points and the free end applied on the ladder side ropes as a rolling hitch. The length of the strops should be sufficient for the purpose. After use, these strops should be stowed away from weather and chemical damage, same as done for the pilot ladder.

2. If such strops are not presently available on board, then two pieces of good rope of CERTIFIED minimum breaking load not less than 24Kn force (about 2.5T) may be used to secure the ladder at an "intermediate" length. Later, the ship should make (or arrange for supply), securing strops as shown. With thimble eyes and a certified shackle attached to each thimble. There is no need for the securing ropes to be manufactured with manila. Suitable non-slip manmade cordage could be used.

3. In every case it is recommended that the securing ropes, whether plain or made into strops, are included in the ship's planned maintenance system (PMS) same as for the other items forming part of the pilot transfer arrangements of the ship. Therefore, the securing ropes/strops shall be identifiable against their certificate. For this, it is recommended the rope used should have an **identifying strand woven into it**. And the **shackles should have markings to identify** against their test certificates.

D) Unsafe Practice - Rigging Ladders Too Low

It is very important that the lower step of ladder is at the requested height above sea surface. Because it is so important, the dangers and some bad practices in this regard are explained in great detail.

1. The Dangers of Rigging Ladders Too Low

Failing to take due care to have the ladder step at the height required by the pilot/VTS can lead to the ladder snagging the deck fittings on the boat or getting pinned (crushed) between the boat and shipside. In sea conditions, this can cause the huge weight of the boat to jerk and pull heavily on the ladder. The ladder can break or get badly damaged. Or worse, the pilot could fall down if he is already

on the ladder at the time. This can typically happen when disembarking. **Damage to the ladder by snagging or crushing can be severe and instant**.

The pilot or the pilot boat handler may judge it too risky and can refuse to board or disembark until it is rigged correctly. If the ladder gets damaged due to fouling or crushing, it must be replaced before the pilot can board. Adjusting the ladder length or replacing the ladder takes time. Vessels do not have this luxury when they are already at the pilot station. Therefore, it is **best to get it right the first time**.

2. Never Use Retrieval Lines (Tripping Lines) to Shorten the Ladder

If the lower step is observed as too low after the pilot boat approaches, ship's crew shall not use the recovery line ("tripping line") to temporarily raise the height of the ladder above the sea surface. Because that extra length pulled up by retrieval line and forming a loop - is dangerous for the pilot. Recovery lines shall be used only for recovering a pilot ladder on board after use. In any case, if fitted, recovery lines shall lead forward.

3. Sufficient Crew to Be in Attendance to Adjust the Length of the Ladder.

At the actual time and place of boarding the wind and sea conditions may have changed or are not as per earlier estimates. So the pilot may require the height of the lower step to be adjusted at the last moment. Therefore have sufficient crew in attendance during transfer to quickly carry out such adjustment. Else the transfer may have to be aborted and the ship may have to turn around and seek permission to approach again after adjusting the ladder in open waters.

4. Length of Ladder Should Be Checked Using a Proper Method

The height of the ladder above the sea surface should not be only by visual estimation or some approximation. Instead, use shall be made of the length markings that are made on the ladder by its manufacturer. Or of a measuring tape/rope. And properly calculating the height above water of the point on the ship over which the ladder goes over side. Subtracting the height above water desired by the pilot/VTS will give the length of the ladder to be paid out over the side.

In case of a combination ladder using a trap-door platform arrangement - the height of the point from which the ladder is suspended for a given angle of inclination must be calculated after allowing for the length of the suspended ladder and the desired height of the lower step above the sea surface.

E) Other Common Issues

1. Plain Ladder or a Combination?

As a rule of thumb: a person on the ladder should never be able to fall more than 9 meters to the water. If that is the case, rig a combination ladder.

2. Ladder Reels

For vessels with a pilot ladder reel/winch there are additional measures that need to be observed.

a) The pilot ladder must be secured to the deck using the rolling hitch method described above. **The winch reel shall not take the weight of the ladder.**

b) The winch reel should be secured from accidentally moving by a mechanical fastening or via a dedicated reel bolt.

c) For a powered reel, the hoist controls shall be mechanically locked to prevent accidental use. If no lock is present then the air supply / power supply shall be isolated from the reel.

3. Combination Ladders

Rig as per requirements of SOLAS V/23 & IMO Res A 1045(27).

3.1 Pay Special Attention To:

a) Secure the lower end of the accommodation ladder/gangway to the ship side.

b) Both the side ropes of the ladder must be secured to the shipside to prevent it from twisting.

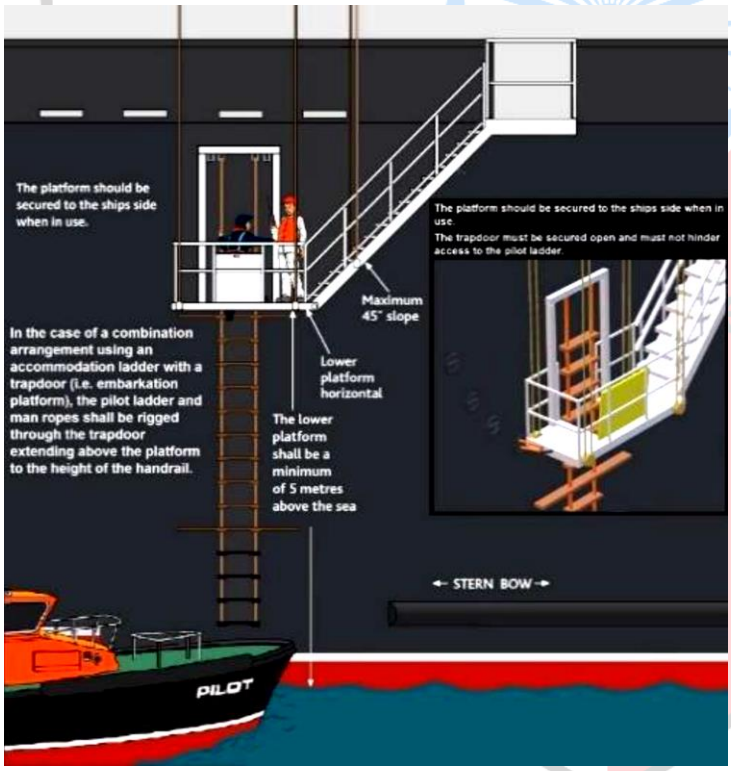
c) The lower platform shall not overlap the ladder. It shall be close to the ladder - between 0.10 to 0.20 meters from the ladder.

d) Ensure the lower platform is horizontal and hinges locked in position.

e) Ensure that all required stanchions are in place on the lower platform. And a properly tight safety rope is rigged on these stanchions.

3.2 Trapdoor Arrangement

SOLAS V/23 rule 3.3.2.1 states "In case of a combination arrangement using an accommodation ladder with a trapdoor in the bottom platform (i.e. embarkation platform), the pilot ladder and man ropes shall be rigged through the trapdoor extending above the platform to the height of the handrail."



Some vessels whose trapdoor (embarkation platform) arrangement does not comply with the above requirement claim exemption by citing SOLAS V/23 Rule 1.3 – the so called "grandfather" clause. https://www.chirpmaritime.org/wp-content/uploads/2017/02/SOLAS-Chapter-V-Regulation-23.pdf

However, a grandfather clause cannot be an excuse for not providing a safe boarding arrangement. Such vessels will be deemed to have provided non-compliant pilot transfer arrangements and pilots have the right to refuse to use such arrangements.

Fig-6 : A picture of a compliant trapdoor type combination arrangement.

The ladder extends up through and beyond the embarkation platform till the height of the handrail. And the ladder's securing ropes extend to securing points on a cross bar located well above the handrails.

F) Low Freeboard Transfers

Ships whose freeboard is low as compared to the height of the pilot boat's deck pose a special risk to pilots trying to transfer. Low freeboard ships, being smaller than most, are prone to large motions in waves. Pilots thus have to judge the motion of the ship as well as the pilot boat. This is tricky. Therefore, on such ships it is very important that compliant handholds are fitted: i.e. diameter 32 mm or more, extending at least 1.2 meters above the deck or the bulwark. Rigidly secured at deck level and additionally near the top of the rail or top of bulwark. And, ships should rig manropes (28 to 32mm dia manila rope) through the top of these handholds. Attending crew to put the manropes overside for use only if requested by the pilot.

When approaching, ships should take into account that the pilot may take a much longer time to board or disembark as he has to judge the safe moment to do so. If the conditions are rough, transfer may be cancelled by the pilot. Ships should be ready for such eventuality.

The dangers of transfer on low freeboard ships is even greater when the deck of the ship is lower than the deck of the pilot boat.

Fig-7

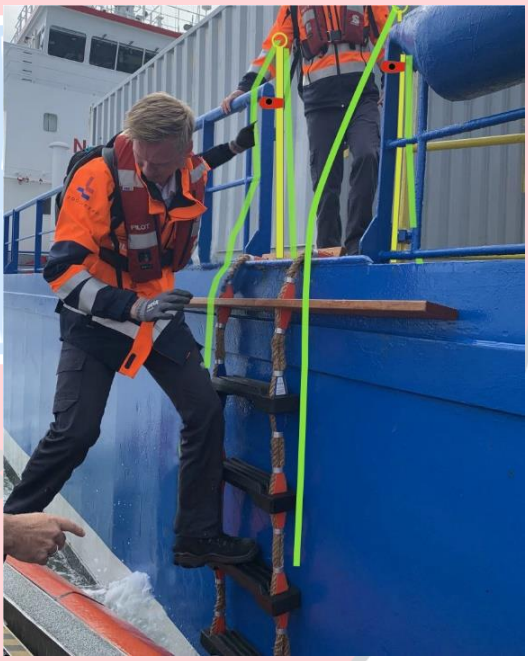


Fig-8

Fig-7 shows a non-compliant PTA. There are no proper handholds provided as required by the regulations. The pilot is forced to hold the ladder with his (left) hand at waist level. Which is at about the level of his centre of gravity. He will find it hard to remain balanced at the critical moment of transfer to/from the boat.

Fig-8 shows compliant handholds (yellow) provided and manropes (green) rigged. The pilot can now hold on to the manrope with his hand above shoulder height. Manropes provide a better handgrip. Manropes also allow the supporting force, passing through the pilot's arm, to continuously align itself in the optimal direction throughout the ship's motion in the seaway. This greatly eases the strain on the pilot's arm and wrist. Also, this support is well above his centre of gravity. The pilot will be much better balanced at all times and thus safer at the critical moment of stepping off or on.

Summary & Conclusion:

1. Prior to deploying the ladder check the condition of side ropes, chocks and steps. If in doubt about the ladder DO NOT USE IT!

2. Obtain the rigging side and required height above the waterline from VTS/Pilot Station.

3. Rigging and securing of the ladder MUST be supervised by a 'responsible Officer'. Pay special attention that the height of lower most step is at the required height.

4. Secure the ladder by dedicated securing ropes using a rolling hitch which is properly gripping around the side ropes. Ensure after securing that the securing ropes are of equal length.

5. If the ladder is on a reel ensure ALL precautions listed above are taken.

6. If a recovery line (tripping line) is required it MUST lead forward and be tied not lower than the lowest spreader of the ladder.

7. At low freeboards, ensure that handholds complying with the regulations are provided. Keep manropes ready for immediate use.

Thank you for your attention.

As can be seen from all of the above, a lot of the pilot's safety is in your hands!

Disclaimer: This document supplements the applicable SOLAS Regulations and IMO Recommendations which shall always prevail.

Acknowledgements: AIMPA acknowledges with thanks the base of public knowledge on pilot ladder safety created by the following persons and which was used in compiling these guidelines.

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Capt. Troy Evans – Pilot. For his article "Strength of Pilot Ladders and Intermediate Securing of Pilot Ladders" published Nov 2020 (Rev-1) in the journal of the NZMPA