The New Zealand Maritime Pilot's Association

RIGGING OF COMBINATION BOARDING ARRANGEMENTS WITH TRAPDOORS

A GUIDE FOR PILOT BOARDING OPERATIONS IN NEW ZEALAND

WHEN USING COMBINATION ARRANGEMENTS WITH A TRAPDOOR

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Pilot transfer arrangements – pilot ladders used in conjunction accommodation ladders with trapdoors in the lower platform

These guidance notes are intended to assist with ensuring the safe embarkation and disembarkation of pilots, using accommodation ladders in conjunction with and adjacent to pilot ladders. This might be characterised as a "combination" arrangement. These notes will be of value to those persons who may be involved in the deployment, inspection or use of combination arrangements to facilitate safe embarkation or disembarkation.

NZ Maritime Rule Part 53: Pilot Transfer Arrangements and Ship-Helicopter Pilot Transfer should be read alongside these guidance notes. *Maritime Rule Part 53* is the primary reference document from which these guidance notes have been developed. This rule is based on SOLAS Chap V Reg 23 and IMO A27/Res. 1045.

To a rapidly increasing extent, New Zealand ports are hosting ships with freeboard greater than 9m and New Zealand pilots are being presented with pilot transfer arrangements where accommodation ladders are used in conjunction with pilot ladders.

Rule 53.8(5) A pilot ladder must not require a climb of more than 9m above the surface of the water.

The 9m measurement is immediately visually obvious by observation of any part of the lower (red) section of the red and white painted freeboard mark on a ship's hull, being above water level at the 9m freeboard height. Combination arrangements may also be deployed from time to time in situations where freeboard may be 9m or less and no part of the red section of the freeboard mark may be visible. In such circumstances combination arrangements (if deployed) must none-the-less comply with *Maritime Rule Part 53.*

Rule 53.11(5) The pilot ladder must be -

Rule 53.11(5)(a) rigged immediately adjacent to the lower platform the accommodation ladder; and

Rule 53.11(5)(b) secured directly to the ship's structure and not to the accommodation ladder; and

Rule 53.11(5)(c) bowsed to the ship's hull at a point adjacent to the lower platform of the accommodation ladder.

In every example where combination arrangements are deployed, it is a fundamental requirement that the pilot ladder be separately secured to the ship and the accommodation ladder be separately secured to the ship and that the pilot ladder and the accommodation ladder must not be secured in any way to one another. If the accommodation ladder wires fail or the pilot boat exerts load on the pilot ladder, the entire arrangement could collapse. When the pilot ladder and manropes are secured to the ship's side/structure, it must be to strongpoints of the same strength as the ladder side ropes. Magnets or suction pads must only be used to bowse/secure the pilot ladder and accommodation ladder to prevent them lifting excessively off the ship's side when rolling. They are not capable of taking the weight of the pilot ladder.

In support of uninterrupted transit of ships and cargoes through New Zealand ports, examples, explanations and *Maritime Rule Part 53* references are offered, to provide some clarity for those ships' crew members who must deploy and inspect combination arrangements as well as for pilots whose safe and hazard-free task performance must conform to the requirements and expectations of *Maritime Rule Part 53* and to the *Health and Safety at Work Act 2015.*

Within this document photos are used to show boarding arrangements that are both compliant and non-compliant, with green ticks and red crosses to highlight which are acceptable and which are not.

Where the accommodation ladder lower platform **does not** include a *trapdoor to allow access from and to the pilot ladder,* there is no better explanation of a compliant arrangement than that shown in the IMO and IMPA shipboard poster "Required Boarding Arrangements for Pilots".

Compliant example of pilot ladder adjacent to an accommodation ladder, also referred to as a combination arrangement.

Combination arrangements with trapdoors in the lower platform must still comply with the same requirements.

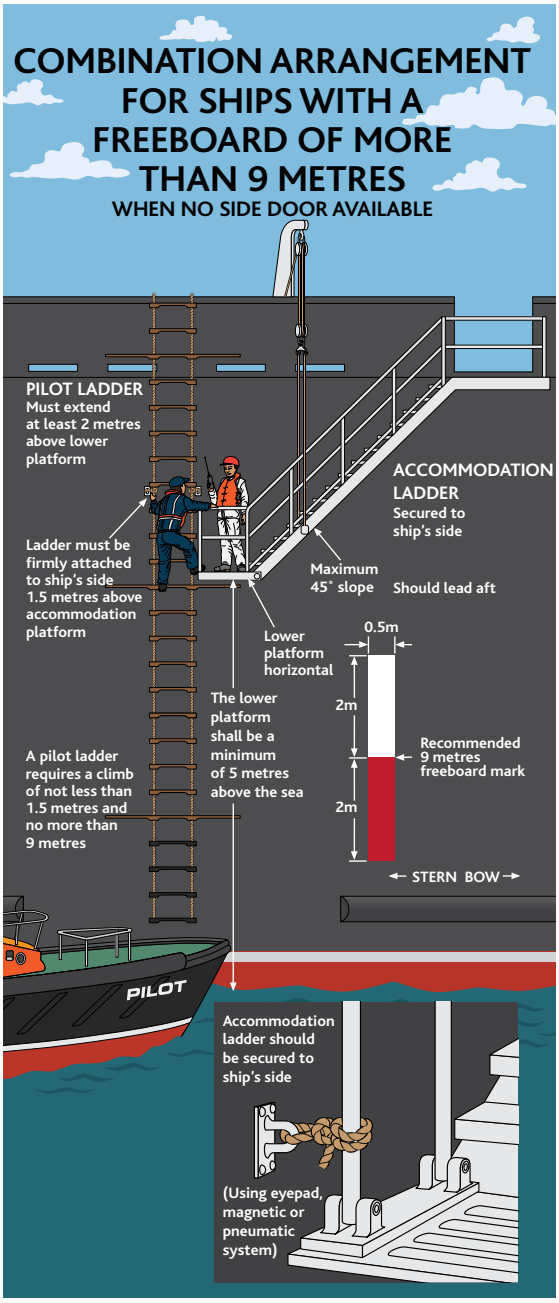
This example is a direct copy of an excerpt from the:

“Required Boarding Arrangements for Pilots” poster, published by IMO and IMPA in accordance with:

SOLAS Chapter V Regulation 23

IMO Resolution A27 Res.1045

The Required Boarding Arrangements for Pilots poster should be displayed publicly on the bridge of every SOLAS ship, for immediate reference.



CHECKLIST

FOR RIGGING A COMPLIANT COMBINATION BOARDING ARRANGEMENT IN NEW ZEALAND

(THIS INCLUDES PLATFORMS WITH A TRAPDOOR)

	PILOT LADDER BOARDING ARRANGEMENT REQUIREMENTS	YES	NO
1	Pilot ladder and accommodation ladder must be secured to the ship's side separately and not to each other in any way		
2	Pilot ladder must be secured to ship's structure at strongpoints, not to handrails or pipes		
3	Pilot ladder must be secured/bowsed to ship's side 1.5 metres above platform		
4	Pilot ladder must be a continuous length, extending at least 2 metres above platform		
5	No rails, bars or beams should obstruct pilot's ability to grasp side ropes or stand on steps until they are level with platform		
6	Inboard railings on platform with a trapdoor must not obstruct ladder		
7	Accommodation ladder must be secured/bowsed to ship's side separately from pilot ladder. Magnets or suction pads may be used for this purpose		
8	If the pilot ladder is stored on a reel, the ladder must be secured to strongpoints on deck, and the reel locked separately		
9	Trapdoor must open outwards, be secured to platform structure and not provide a handhold		
10	Accommodation ladder platform must be horizontal		
11	Manropes if required must be secured to ship's structure, not to the platform		
12	Manropes must be bowsed to ship's side or passed around side ropes 1.5 metres above the platform		
13	Manropes must be 28 – 32 mm diameter and not have knots at bottom end		
14	There must be stanchions or handrails adjacent to the ladder within easy reach to assist the pilot transferring from the ladder to the platform		
15	If tripping/retrieval line is attached to ladder, it should be attached above lowest spreader and lead forward		
16	If pilot ladder is certified to ISO standards, it should be strength tested or replaced every 30 months		
17	Pilot ladder steps must rest firmly against the ship's side		
18	The pilot must not be required to lean outwards to pass through the trapdoor accessway		

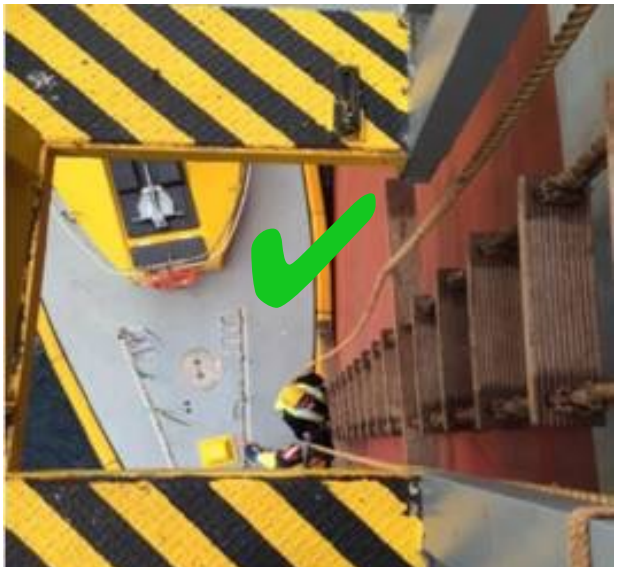
#1 - Fully compliant example of a three sided trap door platform with pilot ladder adjacent (behind)

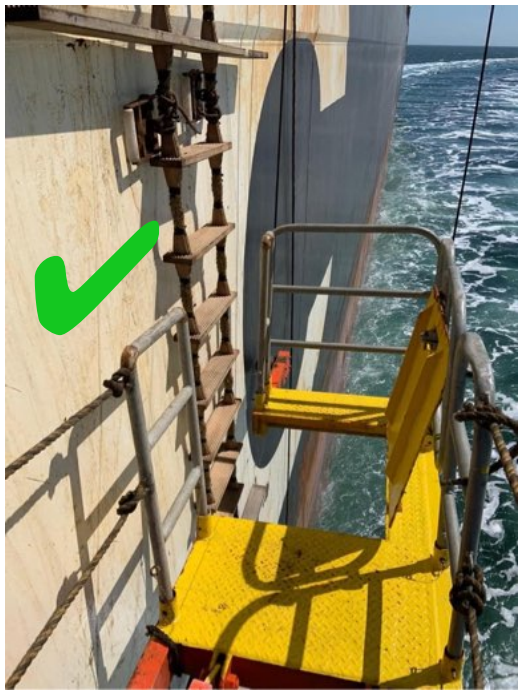
The pilot ladder is a continuous length which extends at least 2 metres above the platform.

The pilot ladder, manropes and accomodation ladder are secured separately to the ship's side.

The pilot ladder steps rest firmly against the ship's side.

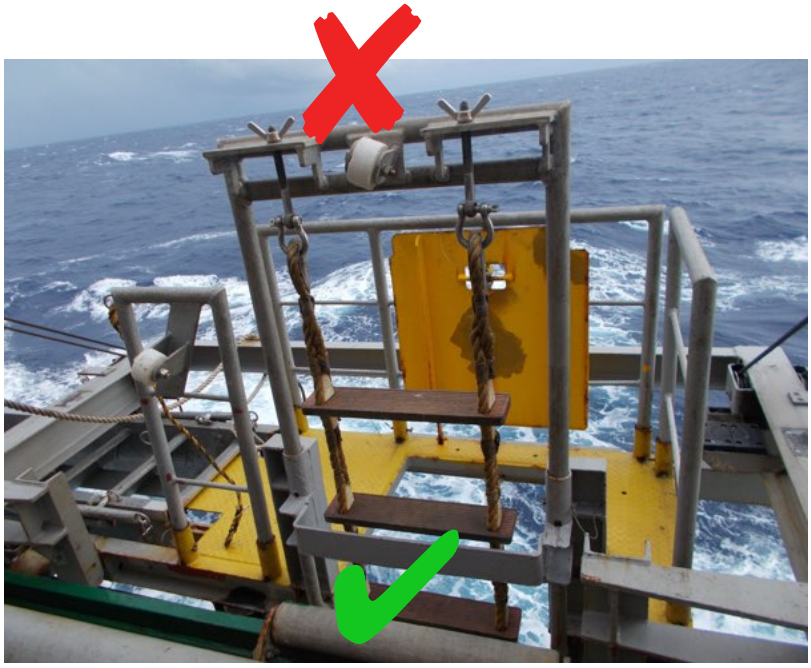
The trap door opens outwards.





#2 - Non-compliant example (this would be fully compliant if pilot ladder was secured to the ship and not to the frame fitted to the lower platform)

In this example the original inboard beam has been removed and been replaced by a flat bar which sits behind the pilot ladder. This allows clear access to the pilot ladder which extends above the handrails. The pilot ladder must be secured to the ship's side or to strong-points on deck. The frame used for suspending the ladder must either be removed or be in a position that does not obstruct the pilot ladder. The pilot ladder should rest firmly against the ship's side behind the frame if it remains in position.

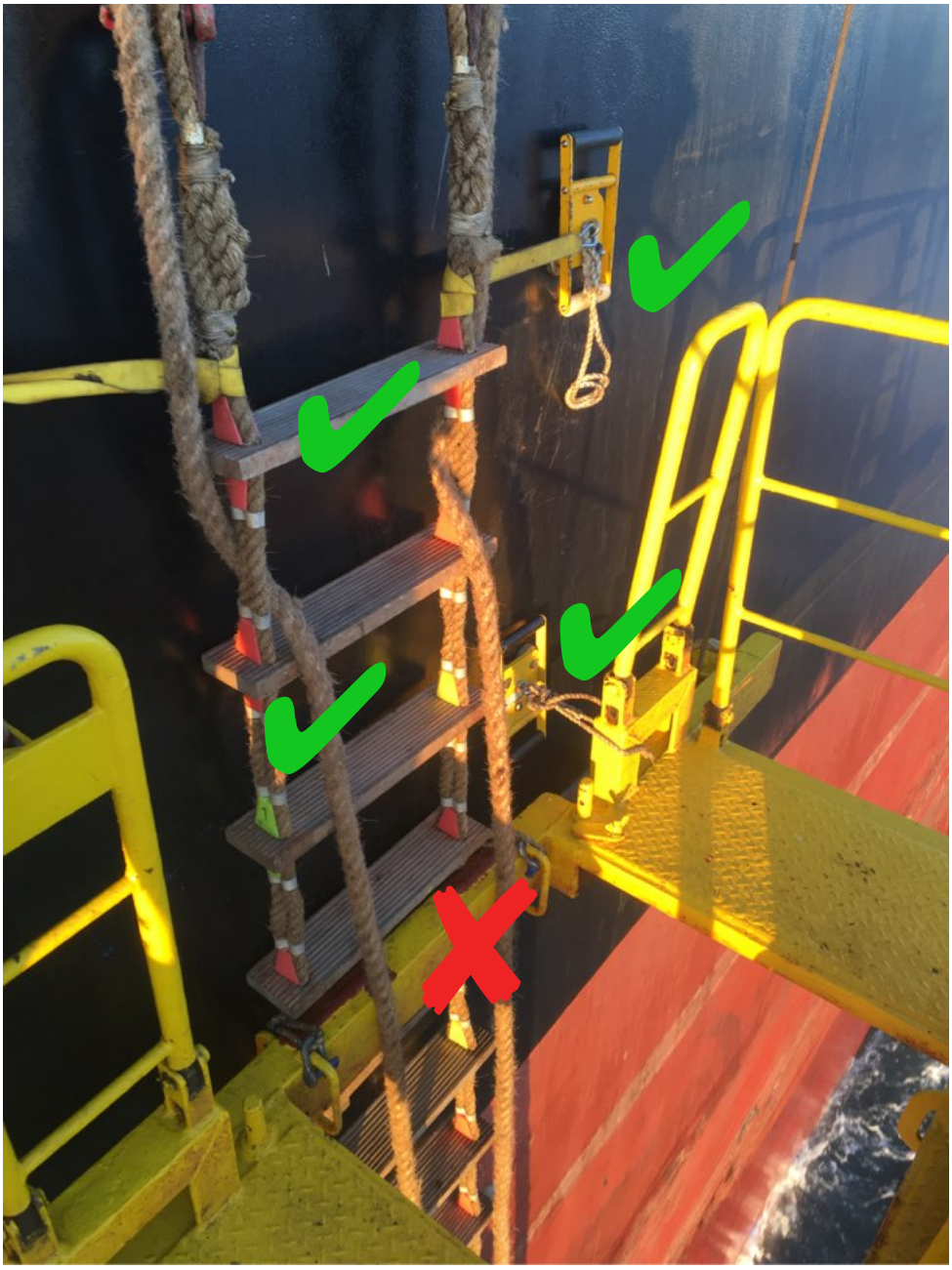


#3 Non compliant example (this would be fully compliant if the inboard beam was removed)

The pilot ladder extends at least 2m above the lower platform, each step of the pilot ladder rests firmly against the ship's side and both the accommodation ladder and the pilot ladder are separately secured to the ship and are not secured to each other. The trapdoor opens outboard.

The manropes are fed through the ladder side ropes, which is an effective way of securing them to the ship's side when the ladder is secured correctly.

This arrangement is almost compliant, however the inboard beam which forms part of the platform obstructs the pilot ladder.



#4 - Non-compliant example (this would be fully compliant if the railing and inboard beam were removed)

The pilot ladder extends at least 2m above the lower platform, each step of the pilot ladder rests firmly against the ship's side and both the accommodation ladder and the pilot ladder are separately secured to the ship and are not secured to each other. The trapdoor opens outboard.

This arrangement is almost compliant, however the inboard beam which forms part of the platform obstructs the pilot ladder. The tube handrail must be removed to allow pilot to grasp the ladder until he can step across to the platform.

#5 - Non-compliant examples

The pilot ladders are suspended below the platform and do not extend 2m above the platform.

There are steel handrails, offered as hand holds above the platform. These obstruct the pilot ladder and require the pilot to lean outward to climb through the trap door.

The accommodation ladder and the pilot ladder are not separately secured to the ship. The ladders are not secured to the ship's side.

6 - Non-compliant examples

Although the pilot ladders extend at least 2m above the lower platform of the accommodation ladder, the accommodation ladder and the pilot ladder are not separately secured to the ship, but instead are secured to each other.

The pilot ladders are secured to and suspended from a crossbar and two upright stanchions which form an integral part of the accommodation ladder lower platform, and is not secured to the ship.

7 - Non-compliant examples

Pilot ladders must be one continuous length, however in these examples they are in two sections, which are secured to the platform and not to the ship. The pilot ladder must be secured to the ship and all securing components must be as strong as the side ropes of the pilot ladder.

The pilot must not need to lean outwards to pass through the trapdoor as shown in the top example.

#8 - Non-compliant example of incorrectly positioned trap door

The trapdoor opens towards the inboard side of the platform and obstructs the pilot.

The pilot ladder does not extend 2m above the platform.

The pilot ladder is suspended under the accommodation ladder platform and is not secured to the ship.

NZ legislation reference documents:

NZ Maritime Rule Part 53 Pilot Transfer Arrangements & Ship-Helicopter Pilot Transfers

International reference documents:

SOLAS Chapter V – Regulation 23 – Pilot Transfer Arrangements

IMO Resolution A.1045(27) – Pilot Transfer Arrangements

ISO 799-1:2019 Ships and Marine Technology – Pilot Ladders – Part 1: Design and Specification

COMBINATION PILOT BOARDING ARRANGEMENTS WITH TRAPDOORS

Excerpts from the Rules

MARITIME RULE PART 53

53.4 Duties in respect to pilot transfer arrangement

(1) (m) where manropes are required by the pilot, the ropes are:

(i) properly secured to the ship at a position—

(aa) sufficiently above the point where the ladder is secured to enable the ropes to be grasped without stooping prior to standing on the ladder when disembarking; and

(bb) immediately adjacent to the pilot ladder so that the man-ropes fall alongside the side ropes of the ladder; and

(ii) bowsed to the ship's side at a point not less than one metre and not more than two metres above the lower platform of the accommodation ladder in any case where an accommodation ladder is used in conjunction with a pilot ladder, and

(iii) fixed at the rope end to the ring plate fixed on deck and either—

(aa) ready for use when the pilot disembarks; or

(bb) upon request from a pilot approaching to board; and

(iv) the man-ropes shall reach the height of the stanchions or bulwarks at the point of access to the deck before terminating at the ring plate on deck

53.8 Position, reach and securing arrangement

(1) A pilot ladder must be positioned and secured so that –

(d) each step rests firmly against the ship's side

(6) The securing strongpoints, shackles and securing ropes for a pilot ladder must be at least as strong as the 20 mm or 18 mm side ropes referred to in rule 53.7.6

53.10 Accommodation ladders used in conjunction with pilot ladders

(6) Where a trapdoor is fitted to the lower platform to allow access from and to the pilot ladder

(b) the pilot ladder must extend above the lower platform to the height of the handrail

53.11 Position and reach

(5) The pilot ladder must be—

(a) rigged immediately adjacent to the lower platform of the accommodation ladder; and

(b) secured directly to the ship's structure and not to the accommodation ladder; and

(c) bowsed to the ship's hull at a point adjacent to the lower platform of the accommodation ladder

IMO A 27/Res. 1045

2.1 Position and construction

2.1.1 The securing strong points and securing ropes should be at least as strong as the side ropes

3 ACCOMODATION LADDERS USED IN CONJUNCTION WITH PILOT LADDERS

3.3 The lower platform of the accommodation ladder should be in a horizontal position and secured to the ship's side when in use. The lower platform should be a minimum of 5 m above sea level.

3.5 The ladder should be equipped on both sides with stanchions and rigid handrails

3.6 The pilot ladder should be rigged immediately adjacent to the lower platform of the accommodation ladder and the upper end should extend at least 2 m above the lower platform.

3.7 If a trapdoor is fitted to the lower platform to allow access from and to the pilot ladder, the aperture should not be less than 750 mm x 750 mm. The trapdoor should open upwards and be secured either flat on the embarkation platform or against the rails at the aft end or outboard side of the platform and should not form part of the handholds. In this case the after part of the lower platform should also be fenced. The pilot ladder should extend above the lower platform to the height of the handrail and remain in alignment with and against the ship's side.

7 INSTALLATION OF PILOT LADDER WINCH REELS

7.4 Securing of the pilot ladder

Where the pilot ladder is stowed on a pilot ladder winch reel which is located either within the ship's side opening or on the upper deck:

.1 the pilot ladder winch reel should not be relied upon to support the pilot ladder when the pilot ladder is in use;

.2 the pilot ladder should be secured to a strong point, independent of the pilot ladder winch reel; and

.3 the pilot ladder should be secured at deck level inside the ship's opening or, when located on the ship's upper deck, at a distance of not less than 915 mm measured horizontally from the ship's side inwards.

7.5 Mechanical securing of pilot ladder winch reel

7.5.1 All pilot ladder winch reels should have means of preventing the winch reel from being accidentally operated as a result of mechanical failure or human error.

7.5.6 A mechanical device or locking pin should be utilized to lock powered winch reels.

SOLAS Chapter V Regulation 23

3. Transfer arrangements

3.3.1.3 each step rests firmly against the ship's side:

3.3.1.4 the single length of pilot ladder is capable of reaching the water from the point of access to, or egress from, the ship and due allowance is made for all conditions of loading and trim of the ship, and for an adverse list of 15 degrees; the securing strong point, shackles and ropes shall be at least as strong as the side ropes;

3.3.2.1 when a combination arrangement is used for pilot access, means shall be provided to secure the pilot ladder and manropes to the ship's side at a point of nominally 1.5m above the bottom platform of the accommodation ladder. In the case of a combination arrangement using an accommodation ladder with a trapdoor in the bottom platform (i.e. embarkation platform), the pilot ladder and manropes shall be rigged through the trapdoor extending above the height of the platform to the height of the handrail.

NZMPA guidance on securing the pilot ladder to the ship's side

When securing the pilot ladder to the ship's side, it should be noted that magnets or suction pads do not meet the requirements of being "at least as strong as the side ropes". Side ropes must be at least 24kN (2447kgs), whereas good quality magnets typically only meet a test load of 500kgs. Magnets or suction pads are intended to bowse/secure the pilot ladder to the ship's side to prevent it swinging away from the ship's side when it rolls. Therefore magnets and suction pads are not as strong as "strong points".

Pilot ladders must be secured to a certified strong point, which may be set into the side of the ship, or positioned near the side of the ship on the upper deck.

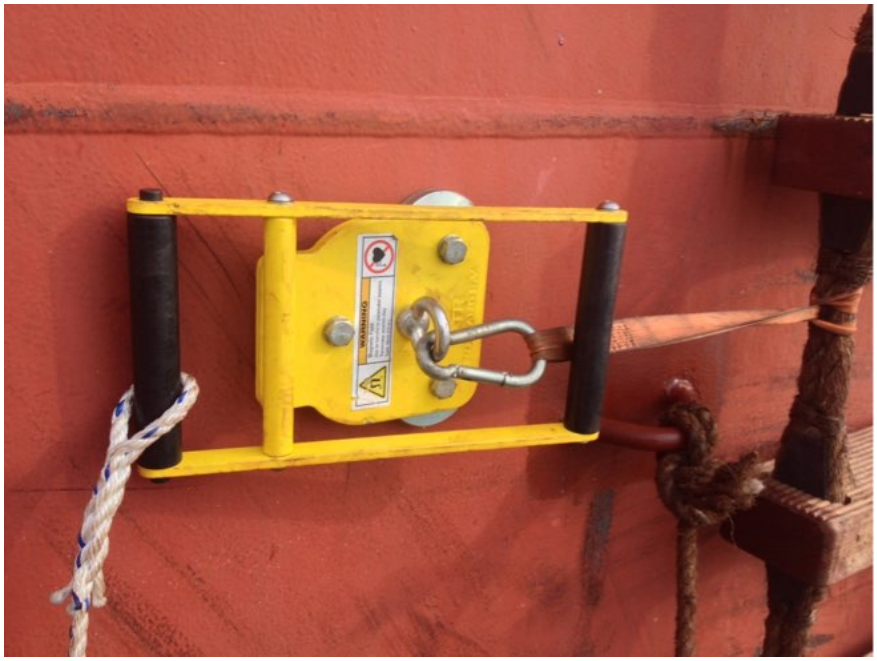
As noted previously in this guidance,

IMO A27/Res. 1045 2.1.1 and

SOLAS Chap. V Regulation 23 3.3.1.4 and

Maritime Rule Part 53.8 (6) all state -

"The securing strong points, shackles and securing ropes should be at least as strong as the side ropes"



Further advice is available from the NZMPA Pilotage Advisory Panel

www.nzmpa.org/wp/pilotap/

The NZ Maritime Pilots Association thanks the authors of this document, Captain Nigel Meek, Port of Auckland pilot and Captain Steve Banks, CentrePort Wellington pilot.