International Maritime Pilots Association

+44 (0)20 7240 3973

office@impahq.org

www.impahq.org

IMPA
HQS Wellington
Temple Stairs
Victoria Embankment
London WC2R 2PN
UK

Annual IMPA Survey

- **3322 Responses**
- **2876 Compliant**
- **446 Non-Compliant**

13.43%

Worst Offenders

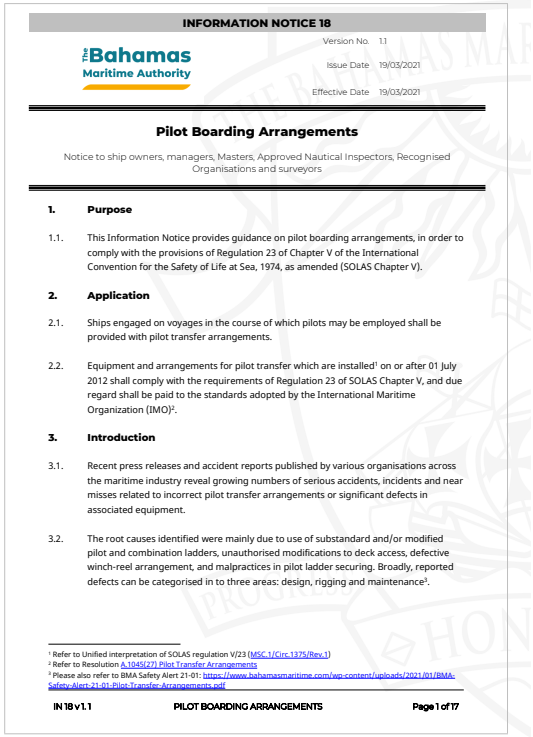
Vessel Type	% Non-Compliant
Fishing	80.95%
Rig Supply Vessels	23.53%
Bulk Carriers	16.71%
Ro/Ro	15.25
Reefer	14.81%
Naval Vessels	13.29%

Common Defects

Defect Type	As % of Defects
Pilot Ladder	51.32%
Bulwark/Deck	19.21%
Safety Equipment	15.89%
Combination	13.58%

Pilots Only Report 10% of Defects to Authorities !!!

Is the Industry Listening?



INFORMATION NOTICE 18

The Bahamas Maritime Authority

Version No. 1.1
Issue Date 19/03/2021
Effective Date 19/03/2021

Pilot Boarding Arrangements

Notice to ship owners, managers, Masters, Approved Nautical Inspectors, Recognised Organisations and surveyors

1. Purpose

1.1. This Information Notice provides guidance on pilot boarding arrangements, in order to comply with the provisions of Regulation 23 of Chapter V of the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS Chapter V).

2. Application

2.1. Ships engaged on voyages in the course of which pilots may be employed shall be provided with pilot transfer arrangements.

2.2. Equipment and arrangements for pilot transfer which are installed[1] on or after 01 July 2012 shall comply with the requirements of Regulation 23 of SOLAS Chapter V, and due regard shall be paid to the standards adopted by the International Maritime Organization (IMO)[2].

3. Introduction

3.1. Recent press releases and accident reports published by various organisations across the maritime industry reveal growing numbers of serious accidents, incidents and near misses related to incorrect pilot transfer arrangements or significant defects in associated equipment.

3.2. The root causes identified were mainly due to use of substandard and/or modified pilot and combination ladders, unauthorised modifications to deck access, defective winch-reel arrangement, and malpractices in pilot ladder securing. Broadly, reported defects can be categorised in to three areas: design, rigging and maintenance[3].

[1] Refer to Unified interpretation of SOLAS regulation V/23 (MSC.1/Circ.1375/Rev.1)
[2] Refer to Resolution A.1045(27) Pilot Transfer Arrangements
[3] Please also refer to BMA Safety Alert 21-01: https://www.bahamasmaritime.com/wp-content/uploads/2021/01/BMA-Safety-Alert-21-01-Pilot-Transfer-Arrangements.pdf

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International Chamber of Shipping

INTERNATIONAL MARITIME PILOTS' ASSOCIATION

Supported by

BIMCO · INTERCARGO · IGP&I International Group of P&I Clubs · CLIA Cruise Lines International Association · IFSMA · The Nautical Institute

Version 3 - 2022

IMO INTERNATIONAL MARITIME ORGANIZATION

E

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE
8th session
Agenda item 13

NCSR 8/INF.10
12 February 2021
ENGLISH ONLY
Pre-session public release: ☒

ANY OTHER BUSINESS

Considerations to improve the safety of pilot transfer arrangements

Submitted by China

SUMMARY

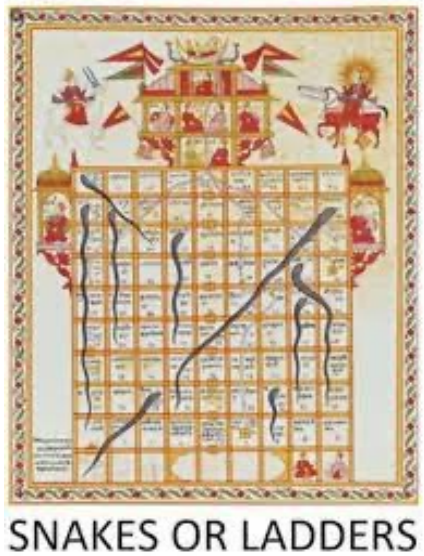
Executive summary:	This document presents information on preliminary considerations on issues relating to pilot transfer arrangements
Strategic direction, if applicable:	6
Output:	Not applicable
Action to be taken:	Paragraph 16
Related documents:	Resolutions A.158(ES.IV); A.1045(27) and MSC.308(88); MSC.1/Circ.1331, MSC.1/Circ.1428; NCSR 6/INF.10 and NCSR 7/INF.17

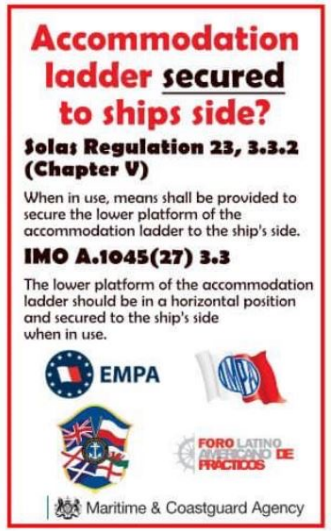
Introduction

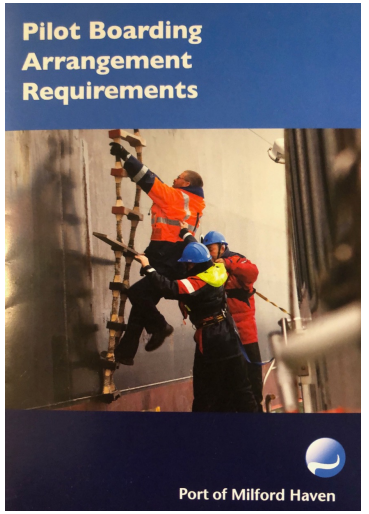
1 Since seafaring began, pilots with specialized knowledge have helped guide vessels safely into or out of ports, especially where navigation is hazardous and the shipmaster is unfamiliar with the area. The importance of employing qualified pilots in approaches to ports and other areas where specialized local knowledge is required was formally recognized by IMO in 1968, when the Organization adopted an Assembly resolution on pilotage (resolution A.158(ES.IV)).

2 While pilots are indispensable to the safe and efficient movement of seagoing vessels, boarding and disembarking of vessels at sea remains a perilous activity undertaken by maritime pilots around the world. To improve the safety of pilots, the Organization adopted resolution MSC.308(88) on amendments to SOLAS regulation V/23 in 2010 and resolution A.1045(27) on recommendation on pilot transfer arrangements in 2011. Despite the inspection requirements imposed under SOLAS regulation V/23 and the minimum standards on the arrangement of pilot ladders set out in resolution A.1045(27), we regret to see accidents involving the tragic loss of pilots continue to happen as a result of non-compliant pilot transfer arrangements.

What Are Pilots Doing?



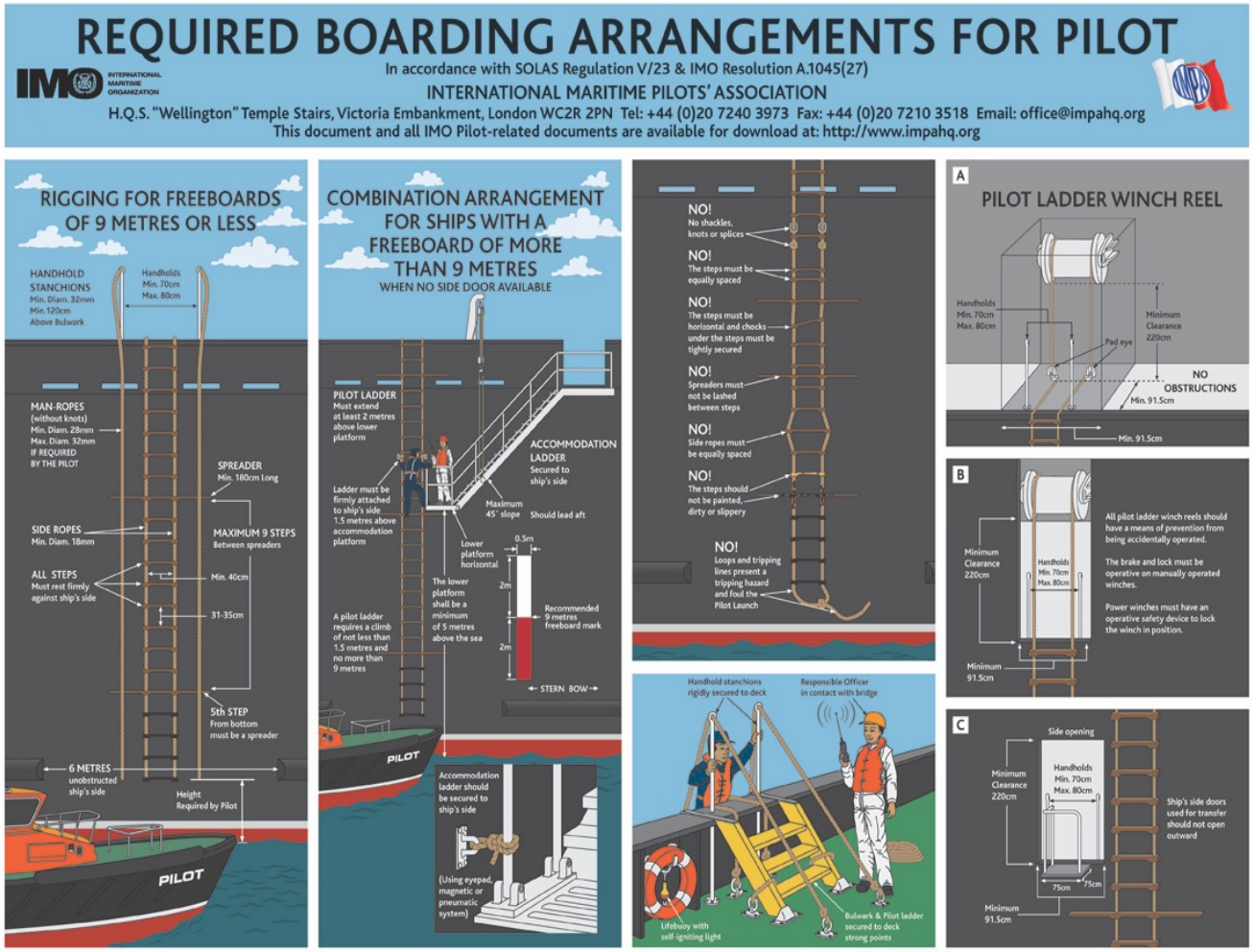




Reviewing The Poster

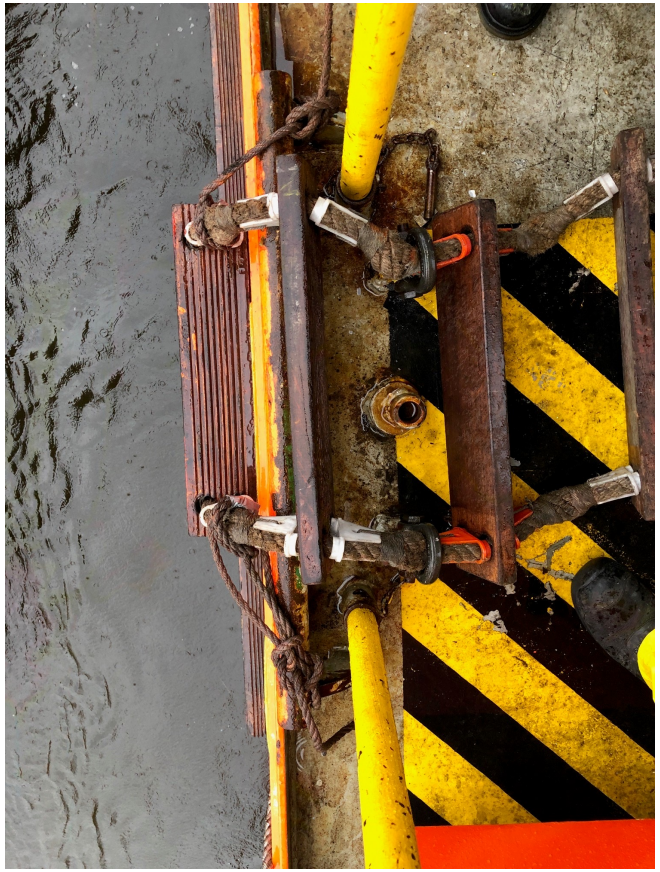
Working Group

Arie Palmers	**(Netherlands)**
Kevin Vallance	**(UK)**
Jorge Viso	**(USA)**
Adam Roberts	**(Australia)**
S M Goag	**(S. Korea)**
Miguel Viera De Castro	**(Portugal) (EMPA)**



Troy Evans

Securing of Pilot ladders at intermediate lengths



Securing of Pilot ladders at intermediate lengths

- A laboratory-based project to investigate the impact of various methods of securing of Pilot ladders at intermediate lengths.
- IMPA is partnering with nC² Engineering Consultancy, who are part of the University of Southampton, UK.

Objectives of the project

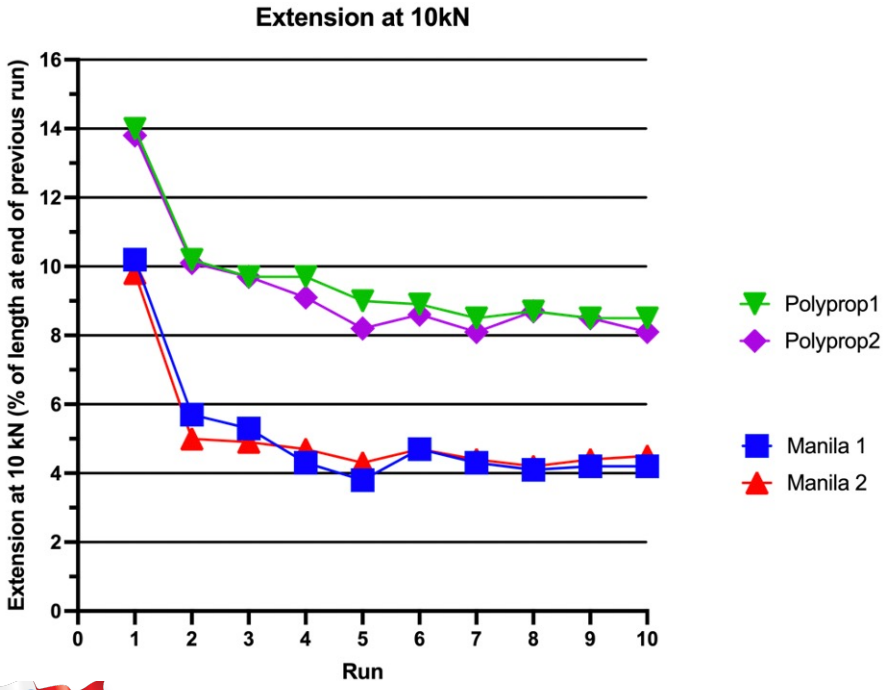
- To determine the baseline response to loading of thimble secured lengths, with a range of materials.

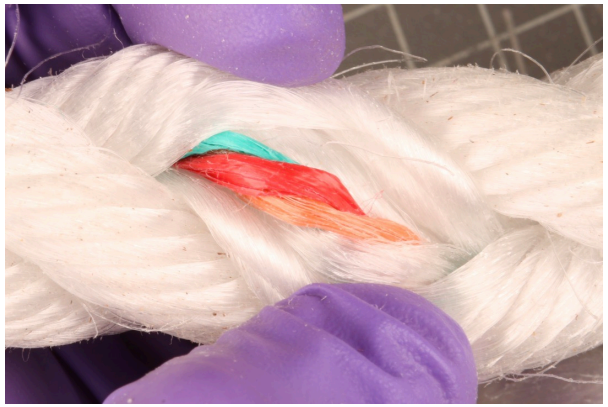
- To determine the slip/grip of various attachment securing methods to the ladder side rope pair and evaluate any resultant damage.

- To determine the effect of cyclically loading D-shackles on the ladder components.

Baseline response

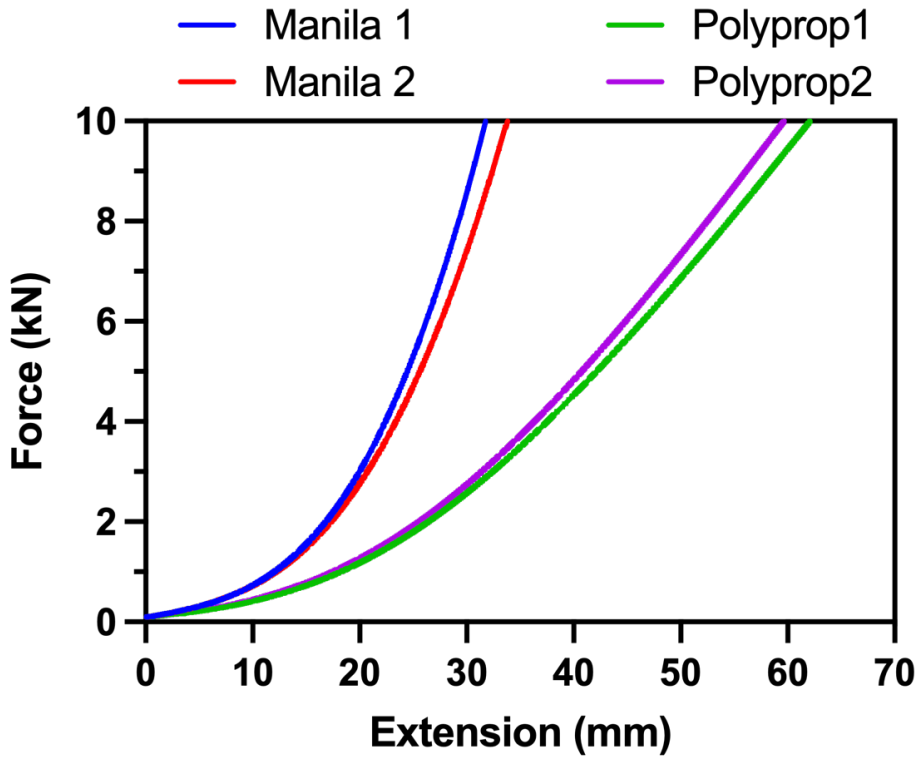
- 20 mm diameter ropes
  - 3 strand Polyprop
  - 4 strand Manila
- Rope pair (single splice)



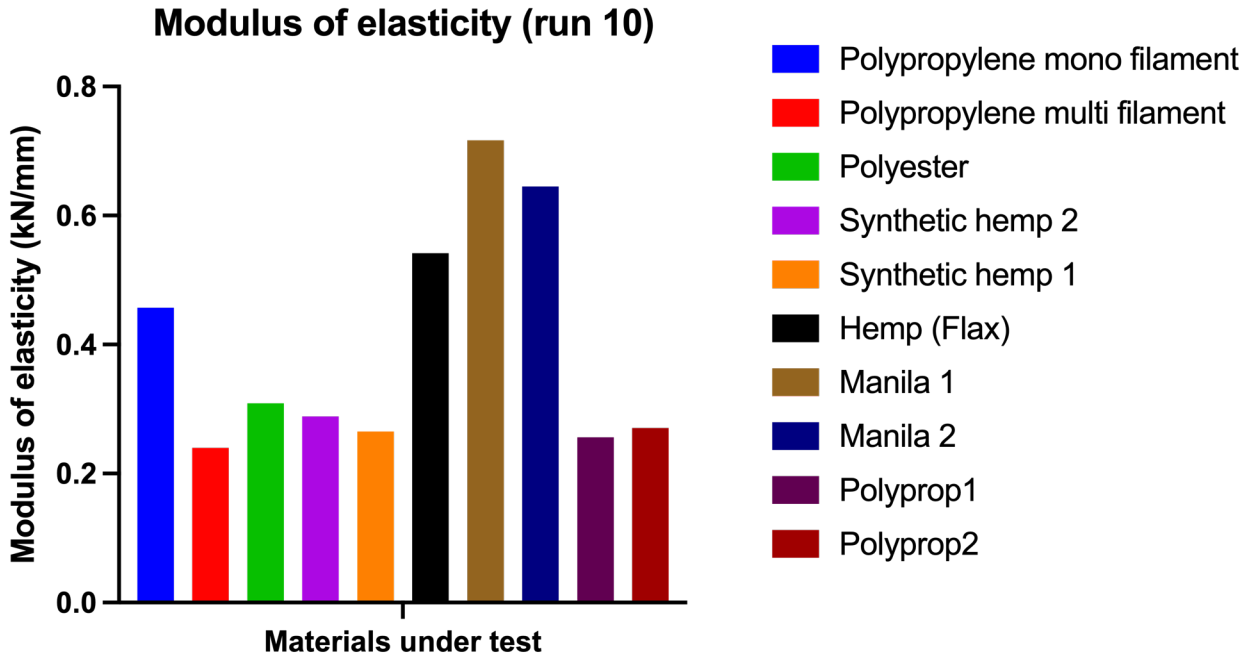


Baseline response

- Performance after bedding in…



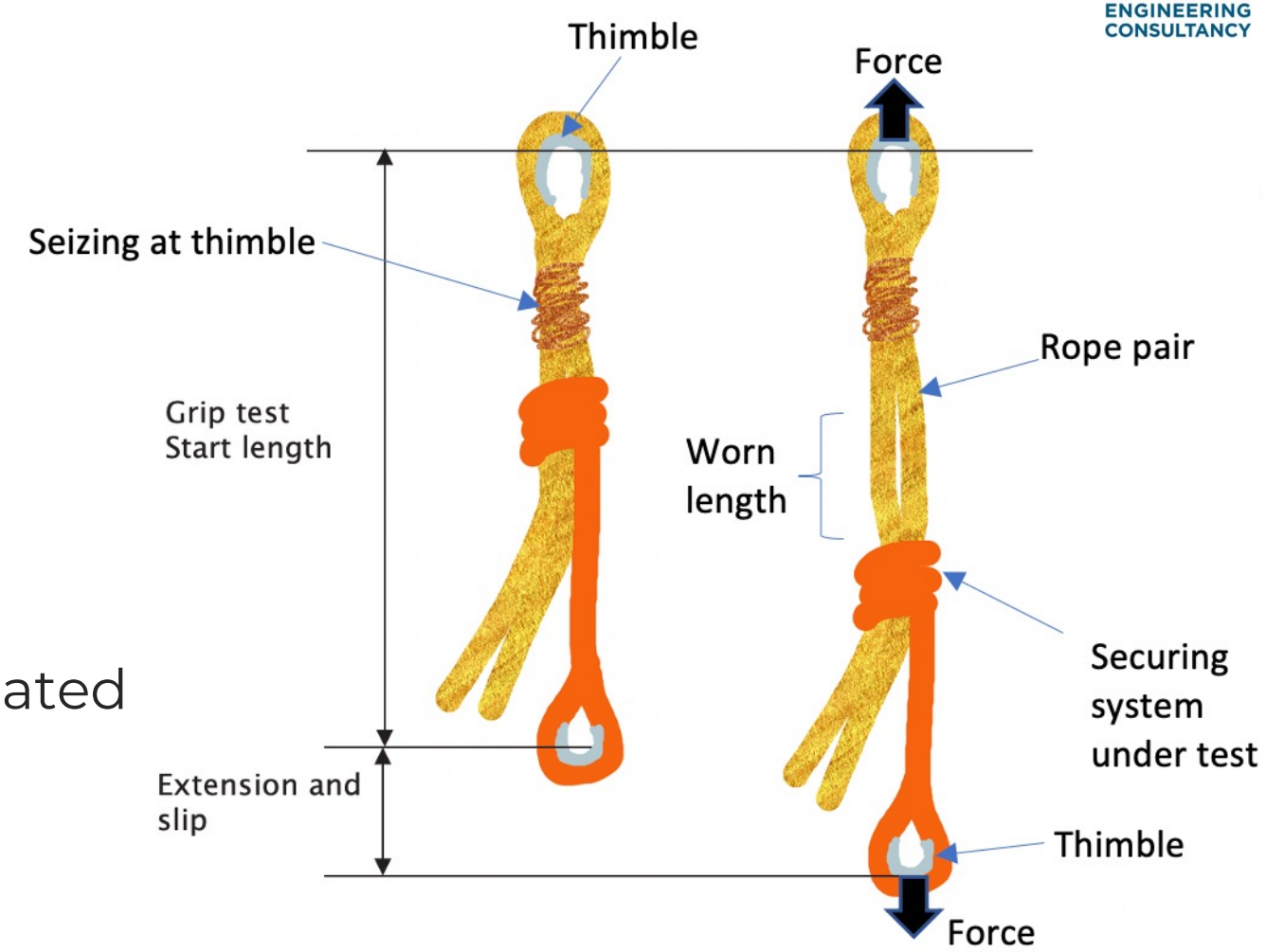
Stress-strain graph (force-extension) of the behaviour of the Manila and Polyprop ropes under test during run 10.



Stiffness data (modulus of elasticity) recorded during run 10 (linear section of data when force > 6kN).

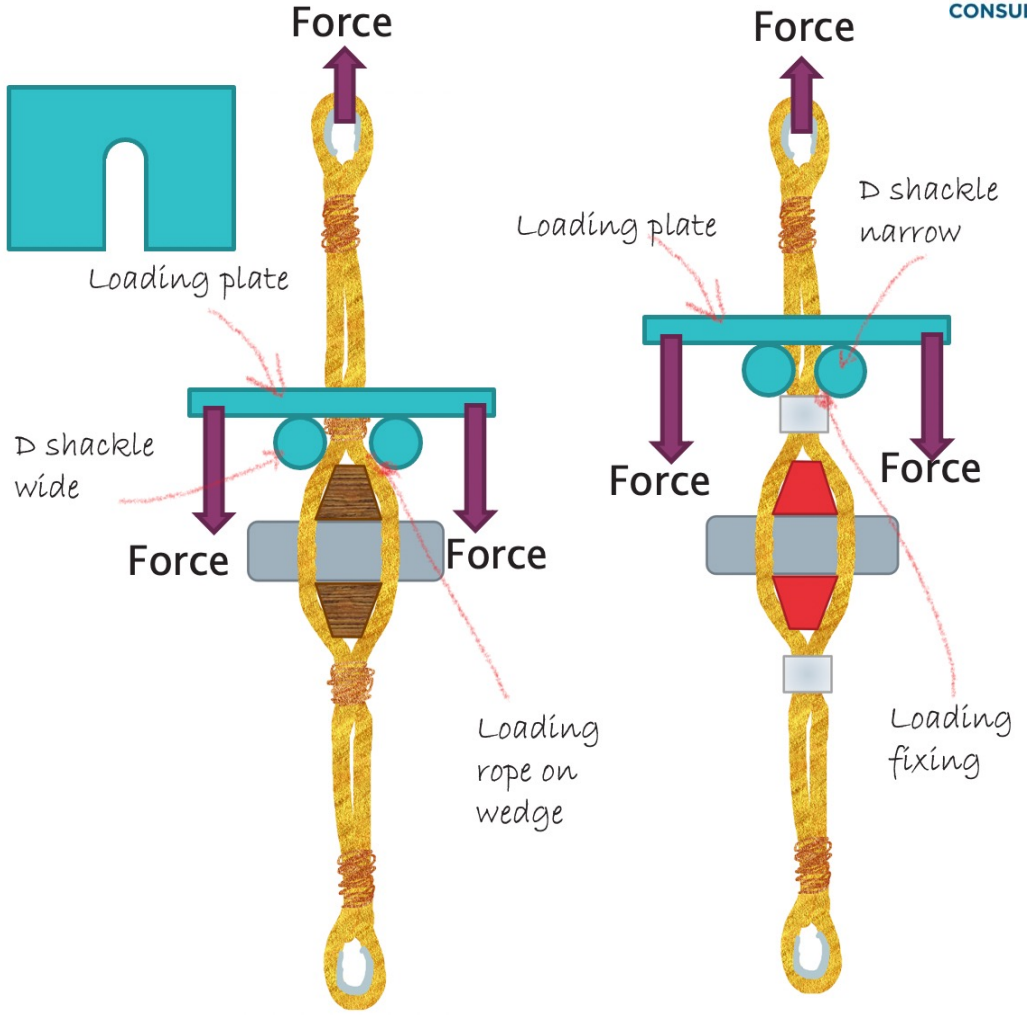
Slip/Grip testing

- Rope pairs (yellow in figure)
  - Polyprop
  - Manila
- Securing system (orange in figure)
  - Manila – rolling hitch
  - Manila – cow hitch
  - Polyprop – rolling hitch
  - Polyprop – cow hitch
  - Cargo straps A & B – cow hitch
- System will be secured, pulled, repeated
- Worn length will be examined



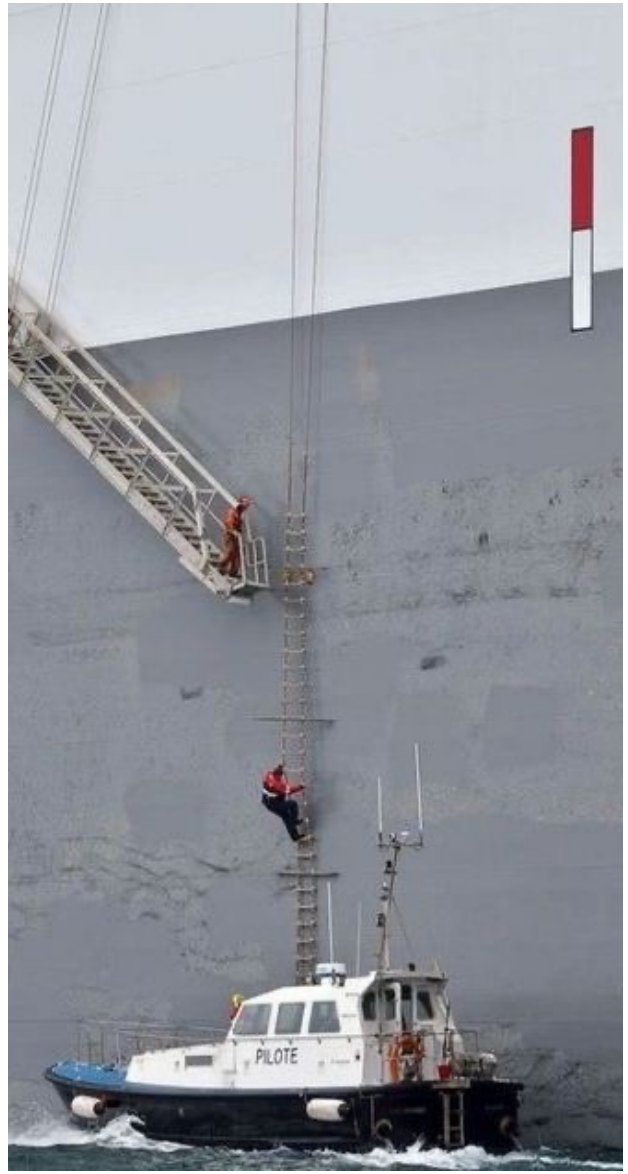
D-Shackle testing

- In these tests the loading from a D-shackle attachment, will be simulated within the laboratory.
- A test set-up has been designed that allows the effects of both wide and narrow D-shackles to be explored.
- The samples will be loaded and unloaded by a fixed amount and rate for 500 cycles. This equates approximately to 2 yrs of service of a ladder used 3 times per week.
- Post testing, the contact loading points will be examined for signs of damage using optical microscopy.



Boarding Practices Working Group

- **Jorge Viso** **(USA)**
- **Jean Philippe Casanova** **(France)**
- **Ricardo Falcao** **(Brazil)**
- **SM Goag** **(S. Korea)**
- **Adam Roberts** **(Australia)**
- **Paul James** **(New Zealand)**
- **Jesus Seneriz Lopez** **(Spain)**



What we looked at

- **Fatality Reports** (What became clear was that there were many more than we were previously aware of)
- **Considered feedback from pilots who had fallen from ladders into the water (11)**
- **Considered feedback from pilots who had fallen from ladders onto the pilot boat deck (12)**
- **Accident reports**
- **Regional Procedures**

Risks from falling onto pilot boat deck.

- Impact injuries due to fall and landing on the pilot vessel deck.
- Potentially crushing between pilot boat and vessel.

Falls from any height onto a hard surface, such as the deck of a pilot boat, can result in injury. Pilots who have fallen from heights well below 9mts have suffered serious life changing injuries and sadly in some circumstance these falls have been fatal.

Standards for the fall height of construction sites in selected countries

Nation	Fall height
Canada	1.8m
Germany	0m, 1m, 3m, 5m
Japan	2m
Singapore	3m
UK (COSWP)	2m
USA	6 feet(1.8m)

Let’s use 2mts when considering pilot boarding operations.

V2=U2 + 2AS

V final velocity
U initial velocity
A acceleration due to gravity
(9.8 metres per second square)
S fall distance

Vertical Drop	Impact Speed (km/h)	Impact Speed (mph)	Increase in Kinetic Energy (using 2m as 1 unit)
9	47.8	29.7	350%
8	45.1	28.0	300%
7	42.2	26.2	250%
6	39.0	24.3	200%
5	35.6	22.1	150%
4	31.9	19.8	100%
3	27.6	17.2	50%
2	22.5	14.0	
1	15.5	9.9	

Reduce the Climb

- Subsection 74(4) of the Transport Canada, Marine Safety, Navigation Safety Regulations provides:
- *"... so that the climb on the pilot ladder does not exceed five metres."*
- SOLAS Regulations provide that 9mts is the maximum climb, above the water level.
- SOLAS Regulations also provide that the platform of a combination ladder is not lower than 5mts above the water level. Let us consider those heights.

- **There is no requirement to climb up to a maximum of 9mts.**
- **If you reduce the height of climb, you reduce the consequent impact of any fall.**
- **Where circumstances safely permit consider requesting deployment of a combination to an agreed safe height even when freeboard of the vessel is less than 9mts.**

Risks from falling into the water.

- Cold water shock
- Hypothermia
- Drowning
- Loss of contact with casualty.
- Injuries from contact with pilot boat and/or vessel.
- The recovery of the casualty from the water can pose significant risks
- Dangers from proximity of ship and pilot boat. The casualty in the water is at risk with contact from the ship or pilot boat.

Mitigation

- **Pilots should be familiar with SOLAS, IMO, ISO and local pilot transfer regulations, guidance and procedures.**
- **Pilots should report non-compliant pilot boarding arrangements.**
- **Pilots should use appropriate PPE. (Flotation devices, Non-slip shoes, Helmets, Gloves)**
- **Pilot should maintain appropriate levels of fitness.**
- **Pilots should take part in M.O.B. drills**
- **Pilots should be trained in first aid and casualty care procedures**
- **Bags should not be worn but transferred using heaving lines.**

THANK YOU

+44 (0)20 7240 3973

office@impahq.org

www.impahq.org