EMPA NEWSLETTER

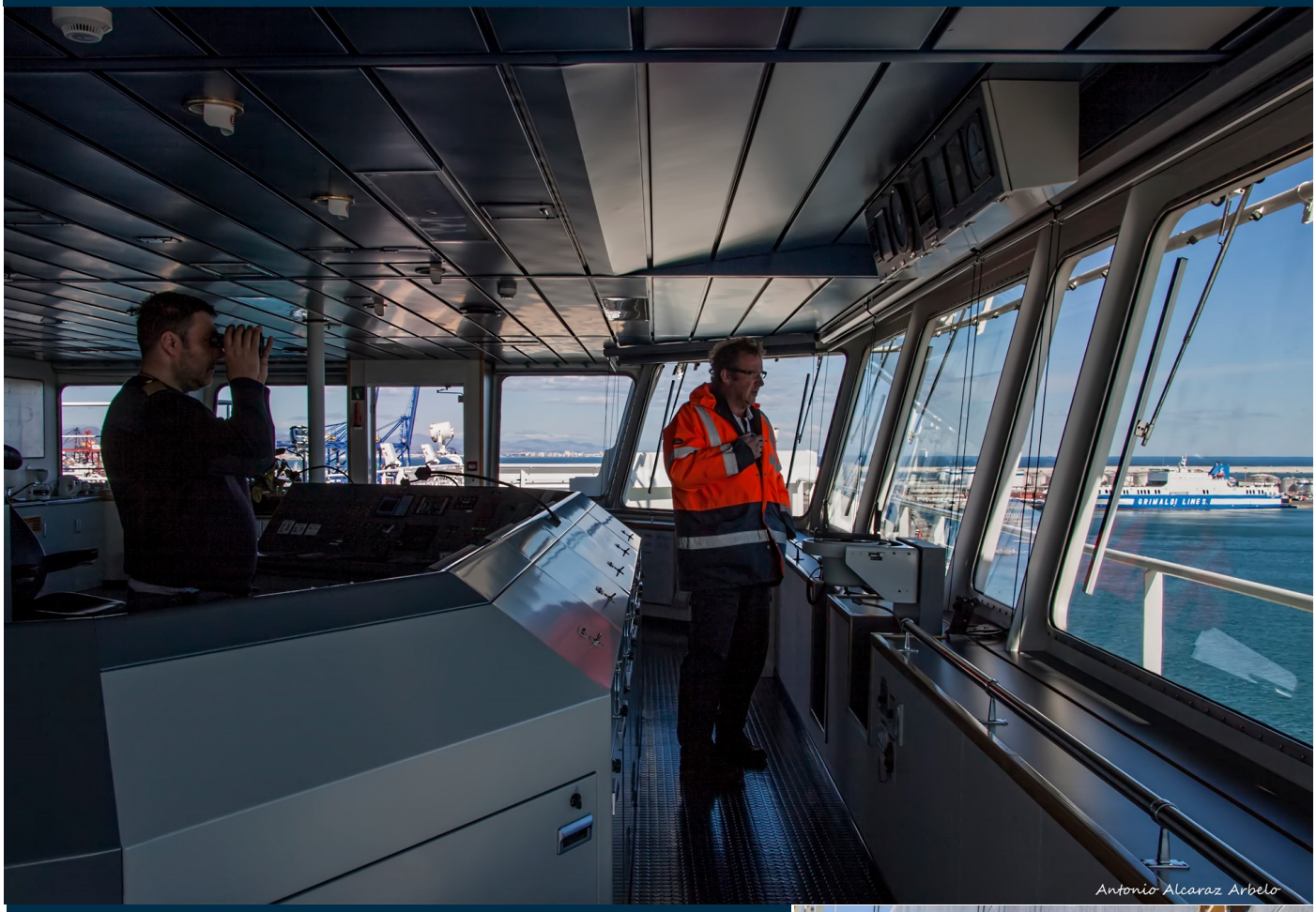
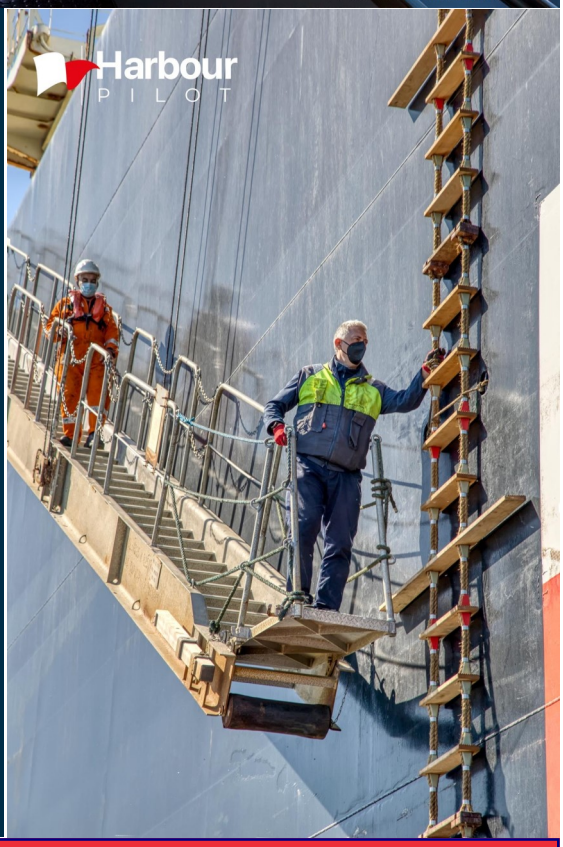


Table of content:



EMPA Journal Editor: Olivier Allaert (Registerloods Scheldemonden) M: +31 6 31 65 84 54 E: o.allaert@loodswezen.nl

Editorial

Dear Coleagues, Dear readers

Here we go again,.....

After the summer we were promised freedom throughout Europe and we came so close. Due to an upsurge of the Delta variant followed by the latest variant of the Covid-19 virus, our freedom is unfortunately limited again in many parts of Europe.

We are yet again obliged to organise events and planned meetings digitally. As a result, our pilot family could not come together to share experiences.

However, we should not give up and we will continue fighting the virus. I, and I believe everyone does, hope that 2022 may still be the year of regained freedom.

My thoughts also go out to the seafarers who are having a harder time locked up on board without being able to stretch their legs onshore.

That being said, I wish everyone a prosperous and healthy 2022.

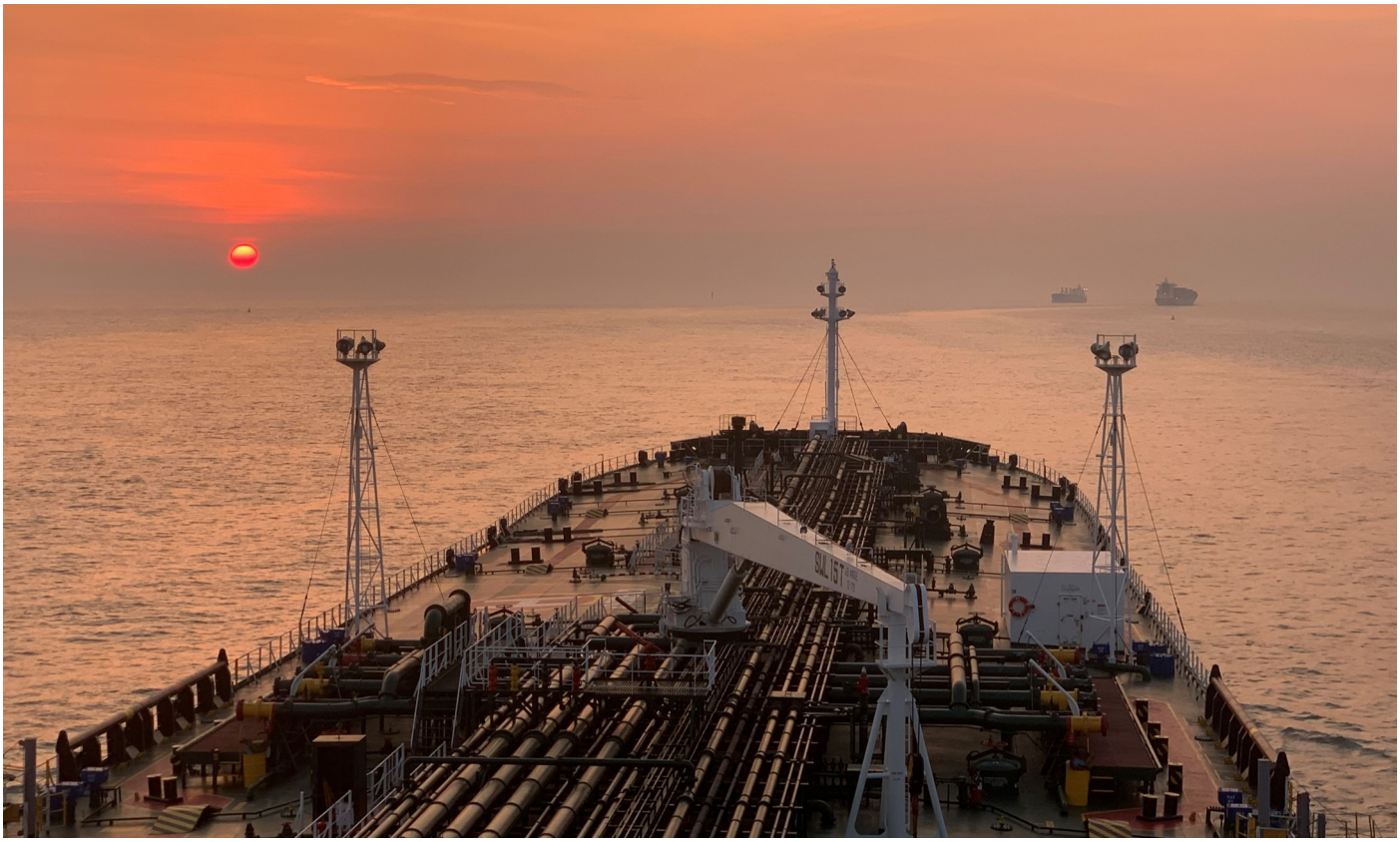
In April 2022, the General Meeting will be organised in Antwerp and we cross our fingers that this can happen physically and not digitally.

Happy reading and stay safe.

The Editor

Olivier Allaert

Registered Pilot Region Scheldt



EMPA Journal Editor: Olivier Allaert (Registerloods Scheldemonden) M: +31 6 31 65 84 54 E: o.allaert@loodswezen.nl

Statement of the President

Dear Colleagues,

Now that the year is coming to an end, it is time to look back and review what has kept us busy over the past months.

If we look in the rearview mirror, we see a big “C”.

A “C”, which kept us busy in 2021 more than we expected at the beginning of the year.

However, this “C” is not only visible in the rearview mirror, even if we look ahead, it has unfortunately not yet faded.

There were also infections among our colleagues and their families. I hereby would like to convey my condolences to the family and loved ones of the victims and to wish all those concerned a quick and comprehensive recovery.

The global pandemic has affected and continues to affect pilotage worldwide.

The passenger shipping sector in particular has continued to suffer, and with it the ports that are primarily dependent on these ship calls. Supply chains have been torn down and the logistical processes in many ports are still not working as they were before the pandemic. The pilotage system has, however, comprehensively proven its reliability; it has proven itself to be systemically relevant and as part of public services of general interest.

Many thanks to all colleagues who always provided their service reliably even under difficult circumstances!

A good pilot, however, always looks ahead and faces challenges with confidence. The members of the Board of Directors have also looked ahead optimistically and have started to plan the next EMPA General Meeting in Brussels from April 27th, 2021 to April 29th, 2021.

We will be sending out further details and invitations shortly.

Of course, we also exchange information with our colleagues at IMPA on a regular basis. In this way we learned that another virus that could be believed to have been eradicated has reappeared, this time in Australia. The name of this virus also begins with “C”: Competition! No vaccine seems to be able to protect us from this virus, we pilots have to defend ourselves against it.

At this point I would like to quote my predecessor Stein Inge Dahn, who wrote:

“Core elements of this defense have to be never to stop investing in building good relations and improved understanding of maritime pilotage qualities and specificities within the general public, in the local, national and international maritime administrations, and not least: towards the politicians.

Equally important, we have experienced, is the need for pilots to stay united! It is a sad fact that lack of unity among pilots has played such an important role in the unfortunate setback processes that we have witnessed worldwide.”

I have nothing to add to this! Unity among the pilots, whether national, European or global, is essential! May this thought accompany us into the New Year.

I wish all colleagues a Merry Christmas and a good transition into the year 2022, which we look forward to with confidence.

To all pilots on duty over the holidays:

Have a smooth sailing !

Yours sincerely

Capt. Erik Dalege

EMPA Journal Editor: Olivier Allaert (Registerloods Scheldemonden) M: +31 6 31 65 84 54 E: o.allaert@loodswezen.nl

EMPA General Meeting 2022

European Maritime Pilot Association

56TH GENERAL MEETING ANTWERP
27th – 29th April 2022

Location : Hilton Antwerp

26/04 : Arrival @ Hotel and evening reception

27/04 : **EMPA Pilots Addressing the Climate Emergency**
Digitalisation and Cyber Threats in Pilotage

Morning :

session 1 : Climate Perspectives

session 2 : Pilots' addressing Climate Change

Afternoon :

session 3 : Stakeholders' addressing Climate Change

session 4 : Industry addressing Climate Change

Evening : Dinner Party

28/04 :

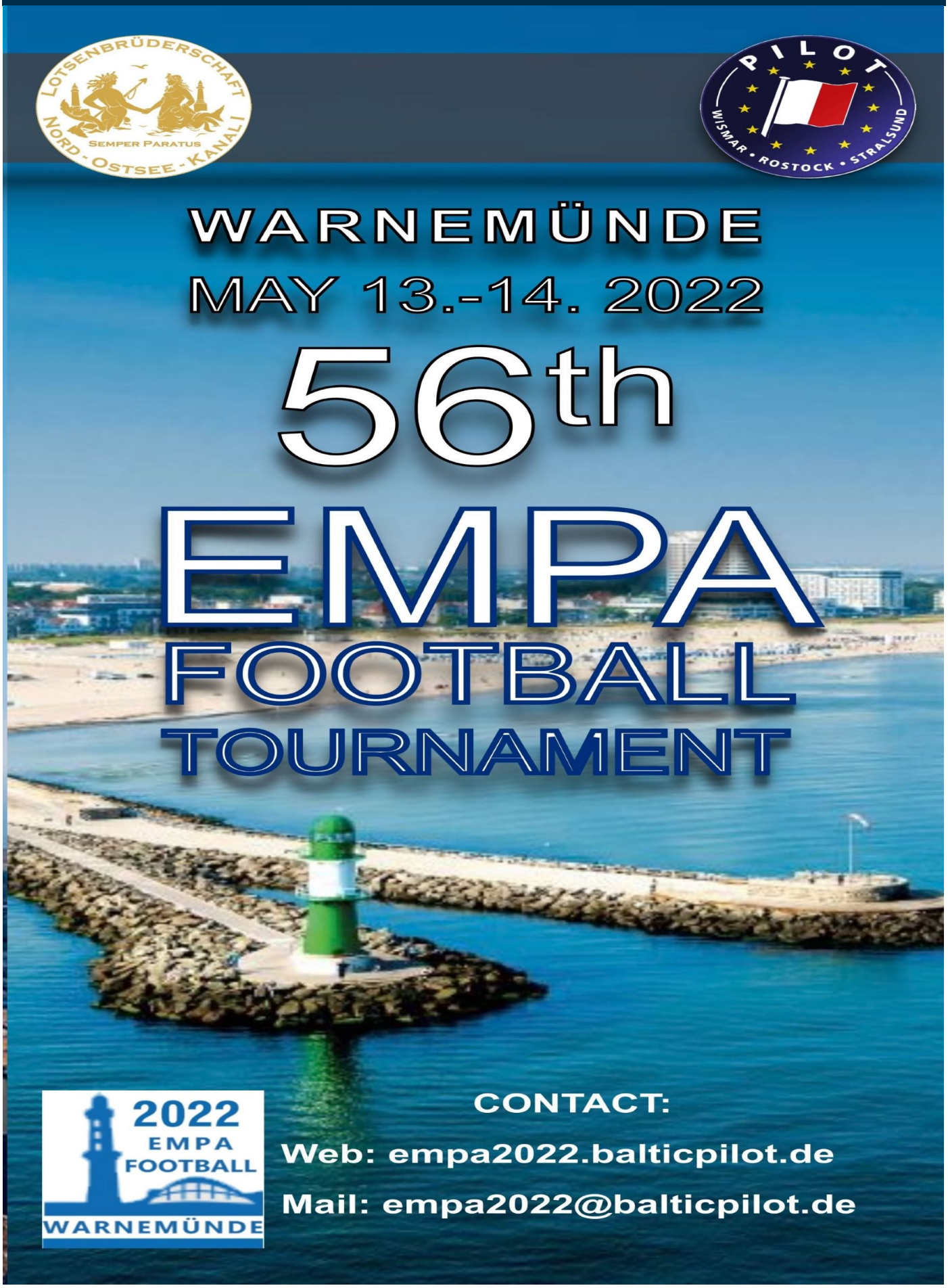
Morning : Digitalisation and Cyber Threats in Pilotage

Afternoon : Closed Session

Evening : Dinner Party

29/04 : Departure

EMPA Football Tournament 2022 Warnemunde



EMPA Journal Editor: Olivier Allaert (Registerloods Scheldemonden) M: +31 6 31 65 84 54 E: o.allaert@loodswezen.nl

Securing of Pilot Ladders at Intermediate Length

Introduction

Every day around the world, thousands of Maritime Pilots use pilot ladders to board and disembark ships. The use of Pilot Transfer Arrangements (PTA's) is governed in Solas Instruments: Regulations (SOLAS V. Reg 23), Guidelines (Imo Res. 1045) Standards (ISO 799:1) and Procedures (ISM Code). The most visible part of these Solas Instruments is the IMO/IMPA wheelhouse poster displayed on the bridge of every ship.

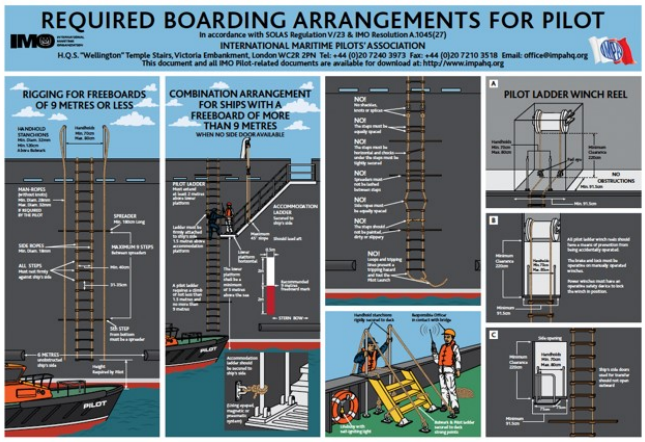


Fig 1: IMO / IMPA Wheelhouse poster (IMO & IMPA, 2018)

Whilst a lot has been described in detail in the above "Solas instruments", the actual securing of the pilot ladder is not described at all. As a result of this, many methods of securing are in use today. Recent research into the use of pilot ladders has shown that on many occasions the method of securing onboard was either of insufficient strength or damaging to the integrity of the pilot ladder itself. (Evans, 2020)

Fig 2: Using D-Schackles will damage the pilot ladder

The aim of the project was to design an innovative solution for the problem that has been defined as "There is no standard way of securing a pilot ladder at intermediate length that is easy to use, strong enough and not damaging to the structural integrity of the pilot ladder".

Fig 3: The shoestring method of securing

Fig 4: Using the spreader as a securing device

Fig 5: A steel bar used for securing the pilot ladder

Methodology

The term “innovation” in this respect not only means “inventing something new”. Many times, innovations come by using technical concepts from other fields of work. To this project the MIT 10 step design process (MIT Professional Education, 2019) was used. This step-by step approach ensures the designer(s) follow a structured plan while designing a technical innovation.

Fig 6: The MIT 10 Step Design Process

The methodology used does not guarantee a successful end product the first time. After verification when the performance of the product does not meet the predefined specifications, a redesign process may be required to optimize the design of the product. Hence the circle shape in the above picture.

The Research Phase

During the research phase, one client and four stakeholders were identified. PTR Holland, one of the largest suppliers of pilot ladders in the world acted as client. At the same time, Bart Kerklaan, a Rotterdam Maritime Pilot, Stolt Tankers, Lloyds Register and Vuyck Engineering acted as stakeholders. Interviews were held with all five parties to identify the user needs for the technical solution that was to solve the problem identified. From this, a seat of user requirements was obtained. These user requirements were translated to a set of design criteria.

	Item	Weight	The method of attachment must be unambiguous.	Bestand tegen UV	Resistant to salt sea water	Resistant to corrosive chemicals	Less than the price of a ladder	Comply with IMO??	Weight less than 50 kg	Equipped with means to move with up to two people	Life span > 2,5 jaar	Assembly should be possible in 5 minutes	Making the connection can be done by 1 person	Making the connection can be done with simple hand tools	Theattachment must be visible from the outside	Design criteria
1	Fool proof	3	vvv													
2	Exposure	1		vvv	vvv	vvv										
3	Competitive	1					vvv									
4	Certification	1						vvv								
5	Transportable	3							vvv	vv						
6	Lif span	1									vvv					
7	Simplicity	3										vvv	vvv	vvv		
8	Visibility	1													v	
	Totaal	9	9	3	3	3	3	3	9	6	3	9	9	9	1	

Table 1: Program of Requirements

Using the design criteria and the user needs, a matrix was formed to determine the program of requirements. In this matrix a weighted assessment was given to each of the design criteria, to prioritize their importance for use in the design process.

The Design Process

The securing of the pilot ladder at intermediate length can be divided into 3 parts: (1) The securing (strong) points on deck, (2) The connection between the strong point and the ladder, and (3) The securing device of the ladder. The first two are very much dependent on the layout of the ship and can be solved by using existing shackles and strops or chains which are already in place.

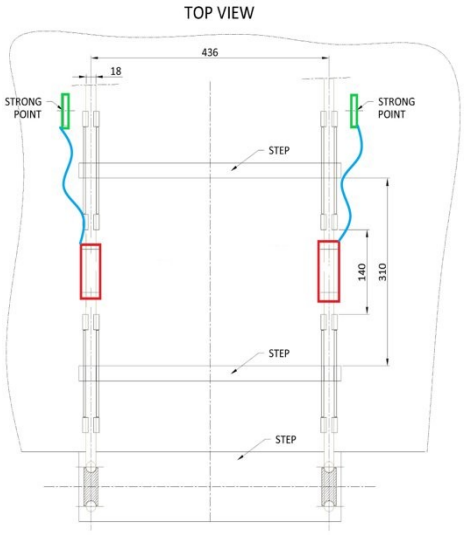


Fig 7: The 3 components of the pilot ladder securing

It was decided to focus the attention to the securing device at the side ropes of the pilot ladder. The securing device of the pilot ladder (3) was the real challenge of the project. The device had to transfer the forces from the strong point via ropes, strops, or chains on deck to the side ropes of the pilot ladder, using an existing pilot ladder. This meant in effect that no alterations could be made to the design of the pilot ladder. Also, the side ropes could not be damaged in any way using the securing device.

The next phase of the design process uses a creative exploration phase in which different ideas were used to approach the problem. In this case, various securing techniques from the yachting, mountaineering and marine industry were explored. In the end, three possible solutions were identified that could possibly solve the problem at hand. These solutions were evaluated in the framework of the design criteria. A morphological overview was used to determine which of the three solutions was the best option for the final design concept.

The next phase of the design process uses a creative exploration phase in which different ideas were used to approach the problem. In this case, various securing techniques from the yachting, mountaineering and marine industry were explored. In the end, three possible solutions were identified that could possibly solve the problem at hand. These solutions were evaluated in the framework of the design criteria. A morphological overview was used to determine which of the three solutions was the best option for the final design concept.

#	Name	Type	The method of attachment must be unambiguous.	UV Resistant	Resistant to salt sea water	Resistant to corrosive chemicals	Less than the price of a ladder	Comply with IMO??	Weight less than 50 kg	Equipped with means to move with up to two people	Life span > 2,5 jaar	Assembly should be possible in 5 minutes	Making the connection can be done by 1 person	Making the connection can be done with simple hand tools	The attachement must be visible from the outside
1	Screw type		Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	No	No	Yes	Yes	No
2	Friction wheel Clamp system		No	No	No	No	Yes	?	Yes	Yes	No	Yes	Yes	no	No
3	Rubber clamp system		Yes	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	No

Table 2: Morphological overview of design concepts

After the evaluation of the outcome of this process, it was decided to design a steel clamp with rubber inserts for the securing to the side ropes of the pilot ladder. For economic reasons, the prototype was to be manufactured from mild steel materials. A set of CAD drawings was made up for the construction of the securing device.

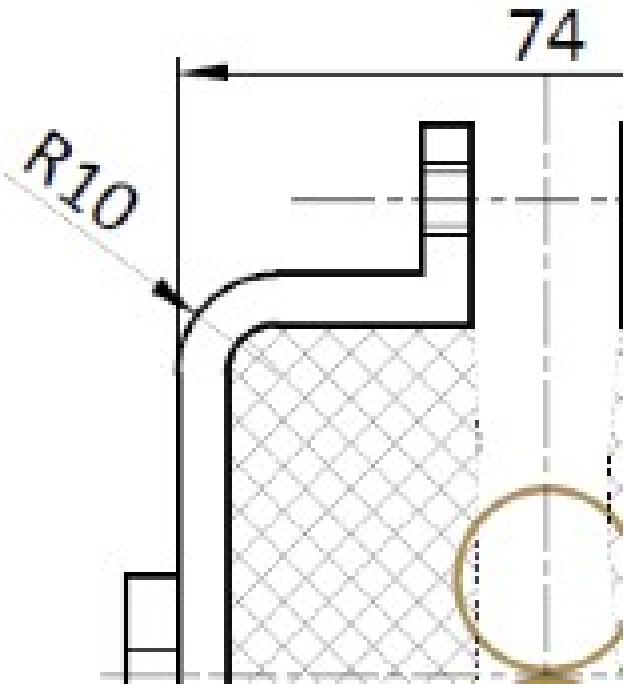


Figure 8a: Design of the securing device

The device was manufactured at Rotterdam Shipyard of the Rotterdam Boatmen Association KRVE. When it was delivered, two methods of securing were added to the device, one with polypropylene wingnuts, one with mild steel wingnuts. The latter one proved the most effective for the securing of the device to the pilot ladder side ropes. The prototype was fitted with a soft rubber compound which is commonly used for the watertight securing of doors and hatches onboard ships.

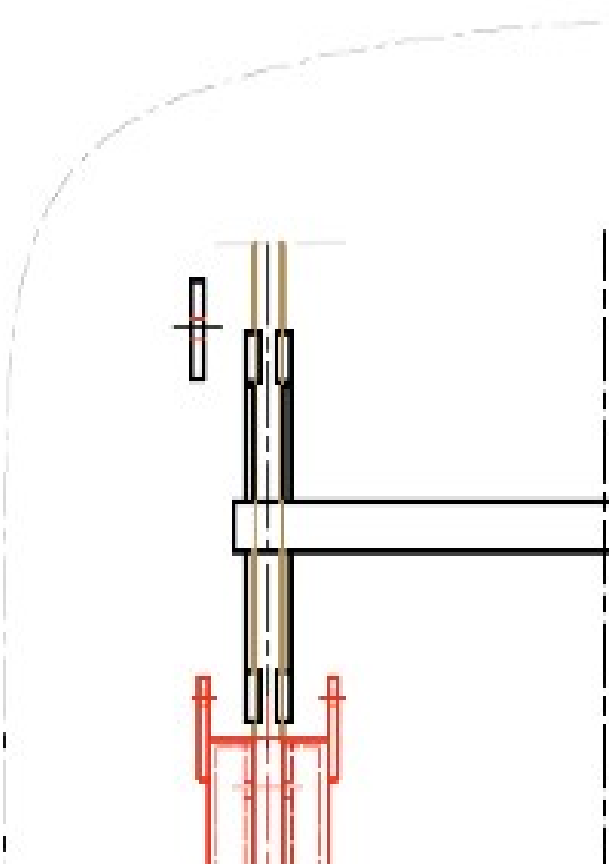


Figure 8b: Design of the securing device

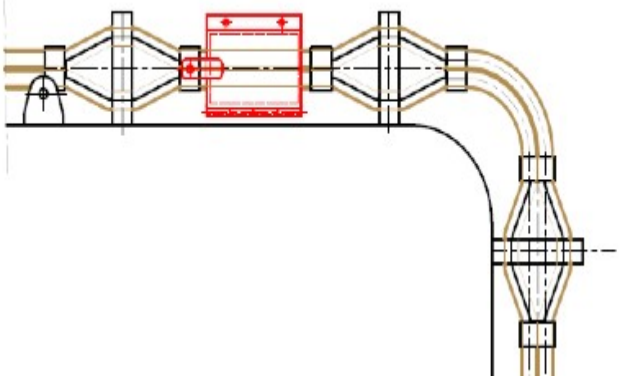


Figure 8c: Design of the securing device

Figure 9a: Securing device in place

Figure 9b: Securing device with polypropylene handwheels

Verification

The final part of the design process was the verification. For this purpose, first all four stakeholders were informed about the outcome of the design phase and the details of the prototype. Valuable feedback was received from all stakeholders involved.

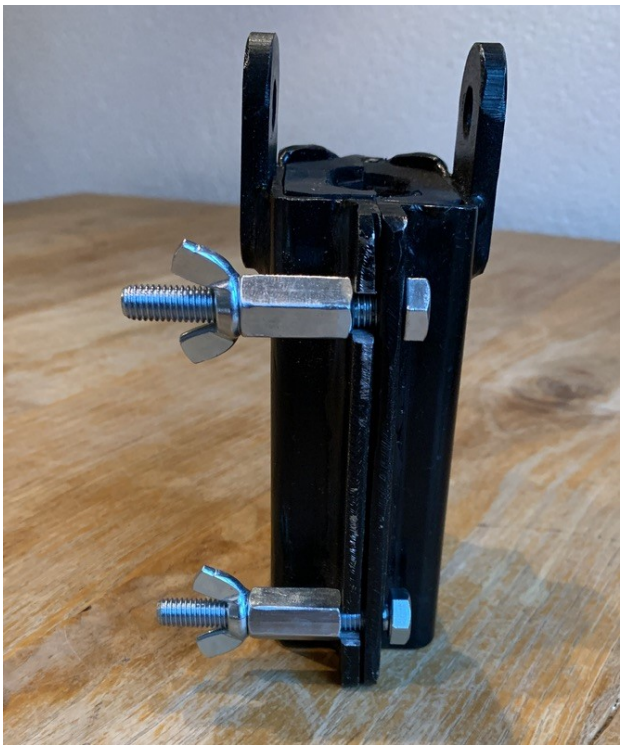


Figure 9c: Securing device with mild steel wingnuts

The second part of the verification was the strength testing of the securing device on the side ropes of the ladder. The dimensions of the device are such that at no point the device touches the clamps of the chocks of the pilot ladder steps. This is done to ensure no improper pressure is applied to the clamps of the ladder, which are not designed for that. The purpose of the strength test therefore was to determine the weight at which the device started to slip along the manila side ropes. For this purpose, the pilot ladder testing facility at PTR Holland was used.

Figure 10: Test setup

During the test it was determined that the securing device could hold a weight of up to 290 kgs before it started to slip along the side ropes.

No destructive test was performed on the securing device in combination with a pilot ladder. After the test, no visible damage to the side ropes was observed. When a load was applied to the ropes, it was very clear that the diameter of the side ropes decreased, which may have been a factor to the holding capability of the securing device.

Conclusions: Room for improvement

1. The principle of a clamp-type of securing device is a feasible solution to secure a pilot ladder at intermediate length.
2. The materials used should be changed to stainless steel for the outer shell to make it resistant to corrosion by salt and chemicals.
3. More research into the type of rubber compound is required to improve the holding power of the securing device, and to make it resistant to chemicals and salt.
4. More research into the optimum shape of the inner rubber lining is required to improve the lining design.
5. A more user-friendly securing mechanism should be added to the design. In this respect the old fashioned "dog" screwing device must be considered.
6. The weight of a typical 9 meters long ladder is 90 kgs. The average weight op a person is 100 kgs. In that respect a total holding power of 580 kgs is sufficient to carry the weight of both.
7. No specification was given as to the minimum holding force of the securing device, let alone a Minimum Breaking Load (MBL) or a Working Load Limit (WLL) of the securing method and/or the ladder. When posing a risk to a person's life, a safety factor of 10:1 is used to calculate the MBL. If the WLL required is 250 kgs, the MBL should be at least 2500 kgs. A destructive test of pilotladder and the securing device should be carried out to determine the MBL.

Re-designing of the prototype

Designing a technical innovation is an iterative process. After the first verification, the designer may have to go back to the drawing board, using the results of the verification tests and the feedback from stakeholders and users. In this case, the outcome of the process so far has been presented to the client, who can then decide if further optimization is required and feasible, along the lines as described before.

Afterword

There is a lot that must be done to improve the safety of the transfer op personnel at sea by means of pilot ladders.

The design of the today's pilot ladders in use does not allow for an easy-to-use securing method, which is demonstrably safe and not harmful to the structural integrity of the ladder.

In this respect one recommendation would be to redesign the pilot ladder altogether, to have a securing mechanism incorporated in the design.

The authors would like to thank PTR Holland, Stolt Tankers, Lloyds Register, Capt. Bart Kerklaan, Vuyck Engineering and Shipyard Rotterdam (KRVE) for participating in this project.

References

Evans, T. (2020). Strength of pilot ladders and intermediate securing of pilot ladders. (). Auckland, NZ: Troy Evans.

An investigation into actual strength of ladders and intermediate securing methods used.

IMO, & IMPA. (2018). Poster required boarding arrangements for pilot.(2) https://www.impahq.org/admin/resources/finalimpapladderposter.pdf

MIT Professional Education. (2019). The 10 steps to design thinking. professional.mit.edu. https://professional.mit.edu/news/articles/10-steps-design-thinking

European Maritime Pilots' Association Vzw

Adm.Secretary

Claire Van Lokeren

office@empa-pilots.eu

T +32 2 430 25 78

M +32 491 61 46 18

www.empa-pilots.eu

Regentlaan 43-44

1000 Brussels

Office Mon. & Fri. 09.00-17.00

President

Erik Dalege (Bundeslotsenkammer, Germany)

president@empa-pilots.eu

Secretary General

Aileen Van Raemdonck

Secretary-general@empa-pilots.eu

Senior Vice President

Miguel Vieira De Castro (Sines, Portugal)

Chairman-tt@empa-pilots.eu

Vice President

Kaj Hahtonen (Bay of Bothina, Finland)

Chairman-dsp@empa-pilots.eu

Vice President Treasurer

Henry Caubriere (Le Havre, France)

Henry.caubriere@ffpm.fr

Vice President

Peter Lightfoot (Tees Bay Pilots)

peter.lightfoot1@ntlworld.com

Vice President

Patrick Galvin (Shannon Foynes, Ireland)

commsvp@empa-pilots.eu

Vice President

Joost Mulder (Rotterdam, Netherlands)

J.mulder@loodswezen.nl

Follow us on : Facebook, LinkedIn, Twitter

VISIT OUR WEBSITE

WWW.EMPA-PILOTS.EU