

THE INTERNATIONAL PILOT

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MARITIME PILOTS' COMMUNITY



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NAVIGATING
TOWARDS
SUSTAINABILITY**





Message from the President

Should or shall; the difference in meaning makes all the difference in practice. The adoption of new mandatory requirements for pilot transfer arrangements is the most significant step forward in a generation for the safety of pilots on duty. Against the backdrop of a shift to light-touch, goal-based regulation, our community will now benefit from a regulatory regime that describes what shall be required to ensure safe and efficient pilot transfers. By any measure, this is a significant achievement and a testament to collective effort.

We recognise that further work is needed to support flag States and the industry in realising the promise of the new regime. IMPA is ready for the challenge and will develop updated guidance for shipyards, classification societies and manufacturers, and collaborate with industry stakeholders on training for seafarers and tools to help companies implement high-quality procurement strategies.

I hope that with this achievement, IMPA's work and external perceptions of our priorities can be rebalanced to focus less on the hazards of our walk to work and more on why our work matters. Pilots around the world have a uniquely rewarding task, and it is a privilege to be able to do what we do. It is a rare pilot who wants to be doing something else! We should therefore be very concerned about how our work is perceived and presented.

For IMPA, this means that how we support our members to engage with their stakeholders will need to rise further up our agenda. Our experience in monitoring discussions around the world in various forums reveals a concerning lack of understanding of maritime pilotage. There is a lot of work to be done educating our stakeholders in new and innovative ways about what pilotage is and what it delivers for them. Often, this means making the narrative about pilotage more about what matters to our stakeholders, and less about what matters to us.

This approach will bring dual benefits: it contributes to protecting pilotage as a public service and our profession, and it reinforces the importance of implementing and enforcing the new SOLAS requirements. With the watershed of a mandatory regime for pilot transfer arrangements, I believe we can achieve the most significant impact by focusing on what we do on the bridge, our purpose as pilots, and our relevance to our stakeholders.

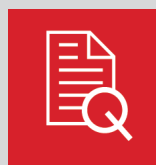
Critical to our success in this is harnessing the youthful energy of the next generation of maritime pilots. These are the members

of our community who are most vulnerable to misconceptions and reconceptions of maritime pilotage and equally have the right to help shape the future of the profession. Leaders across our community have a responsibility to engage this young generation so that they understand that the uniquely rewarding and privileged role they have is vulnerable. They are the only people who will stand up for them; a lesson many of us have learned the hard way.

I opened referring to an outstanding, once-in-a-generation achievement, which is a testament to our ability to work together. I close with a call to action, so we are prepared to meet what is next. Future outstanding achievements need all maritime pilots to be engaged in what happens nationally, regionally and internationally. It is up to us to draw everyone in, show them why their engagement matters, and equip them to shape the future of our profession.

Simon Pelletier

IMPA President



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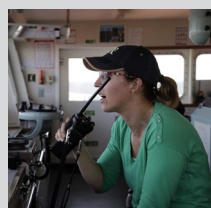
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Capt. Kristi Taylor,
Houston Pilots, APA



Message from the Secretary General

2025, and particularly our work at IMO, was always going to be heavily influenced by the amendments to SOLAS regulation V/23 and the new performance standards for pilot transfer arrangements. While this is, of course, a significant development for our members, it has not been our sole focus.

In January, IMPA presented to stakeholders in Canada and the St Lawrence River that wanted to hear about our intentions for the International Study on Remote Pilotage. Our presentation led to a fascinating exchange of views amongst interested stakeholders. In February, IMPA participated in the Sub-Committee on Human Element, Training and Watchkeeping at the IMO to ensure that, as phase 1 of the comprehensive review of the STCW Convention and Code ended, there were no last-minute efforts to develop competency requirements for maritime pilots. IMPA is a strong advocate of national training requirements based on IMO resolution A.960(23); maintaining and advancing the human capital embodied in pilots is not served by adopting minimum international standards. February also saw IMPA maintaining its relationship with the International Organization for Marine Aids to Navigation (IALA), attending their inaugural General Assembly alongside its member States in Singapore. Maintaining strong working relations with IALA is becoming increasingly important.

In March, IMPA participated in the Digital Technologies Committee of IALA, where we contributed technical expertise and practical experience to discussions on the digitalisation of waterways. In April, IMPA's International Study on Remote Pilotage took a step forward with the conduct of technology readiness reviews, which included manufacturers and system integrators proposing solutions to the project. We also participated in the ISO Sub-Committee and Working Group, which is responsible for the ISO 799 series of standards. Our intent to ensure that the ISO 799 series of standards is updated to support globally consistent implementation of the new SOLAS requirements. The work will begin shortly.

The IMO's Sub-Committee on Navigation, Communications, and Search and Rescue met in May, and IMPA participated in work related to software maintenance and frameworks for the distribution of S-100 products to ships. Both are important in the context of the security and performance of portable pilot units (PPUs), as well as the future mechanism that may need to be used for distributing geospatial data to PPUs.

June saw the Executive Committee meeting in London to

consider a wide range of matters relating to safety, technology, professional standards and the administration and policy of the Association. Immediately afterwards, IMPA's attention turned firmly to IMO and the shepherding of amendments to SOLAS regulation V/23 and the new performance standards for pilot transfer arrangements through the adoption process. I am pleased to report success! Once again, I would like to express my sincere gratitude to those who have dedicated their time to working at IMO meetings, helping us reach this milestone. IMPA also took the opportunity presented by the Maritime Safety Committee to hold our annual reception for IMO delegates on HMS WELLINGTON, and we were privileged to host the IMO Secretary General and colleagues from across IMO member States and international organisations.

Hot off the press in June was our IMPA Corporate Social Responsibility Strategy, designed to show how we can achieve our core mission in a way that respects our people and planet, and creates new value for our stakeholders. I am pleased with the positive response we have received to this.

Combined with visits to members and the issues members have sought IMPA's advice on, I am delighted with how productive the first half of 2025 has been for our Association.

Matthew Williams
IMPA Secretary General

Safety

IMPA Annual Safety Campaign 2025



Capt. Adam Roberts,
IMPA Vice President

As with previous years the 2025 survey results demonstrate an increased participation rate by members in terms of number of reporters and number of reports received. It would appear that as predicted in previous years, maritime pilots are willing to openly report their observations, a trend that will continue to grow. This, overlayed with upcoming changes to SOLAS V/23 which will put pilot transfer arrangements more firmly into focus, will hopefully continue.

Proactive ship owners and managers would be well advised to prepare early for upcoming SOLAS changes. Early compliance should be seen as an investment in reducing risk to safety, reputation, on time delivery and environmental performance, not as a cost. As Port Authorities and Pilot Service providers in many cases require pilots to refuse to use non-compliant arrangements, money saved purchasing ladders of indeterminate origin or by not providing onboard crew familiarisation with SOLAS requirements, has the

potential to cost much more.

It is unfortunate to see incorrect retrieval lines still account for a high proportion of the reported non-compliances, arguably one of the simplest situations to avoid. Whilst being sympathetic to the need to use them, running them forward, keeping them properly tended and rigging them above the last spreader is not a difficult undertaking.

Though IMPA represents the interests of maritime pilots and advocate for improvements to make them safer during transfers, we are cognisant of the fact this improves safety for others using pilot transfer arrangements. We are also acutely aware of the challenges faced by seafarers in rigging pilot transfer arrangements.

Rigging or retrieving nine meters of pilot ladder without the aid of a winch is a challenging prospect indeed, especially whilst working close to the deck edge of a rolling ship. Perhaps the next challenge for the industry regarding personnel transfer using pilot transfer arrangements is designing systems and extra equipment to keeping seafarers safe whilst completing the essential task of rigging transfer arrangements.

***“Early compliance of
SOLAS changes should be
seen as an investment in
reducing risk to safety not
as a cost”***

Non-compliance rate
14%

Number of reports
5285

Number of pilots participating
>940

Highest rates of non-compliance found in Africa (24%) and Oceania (22%)

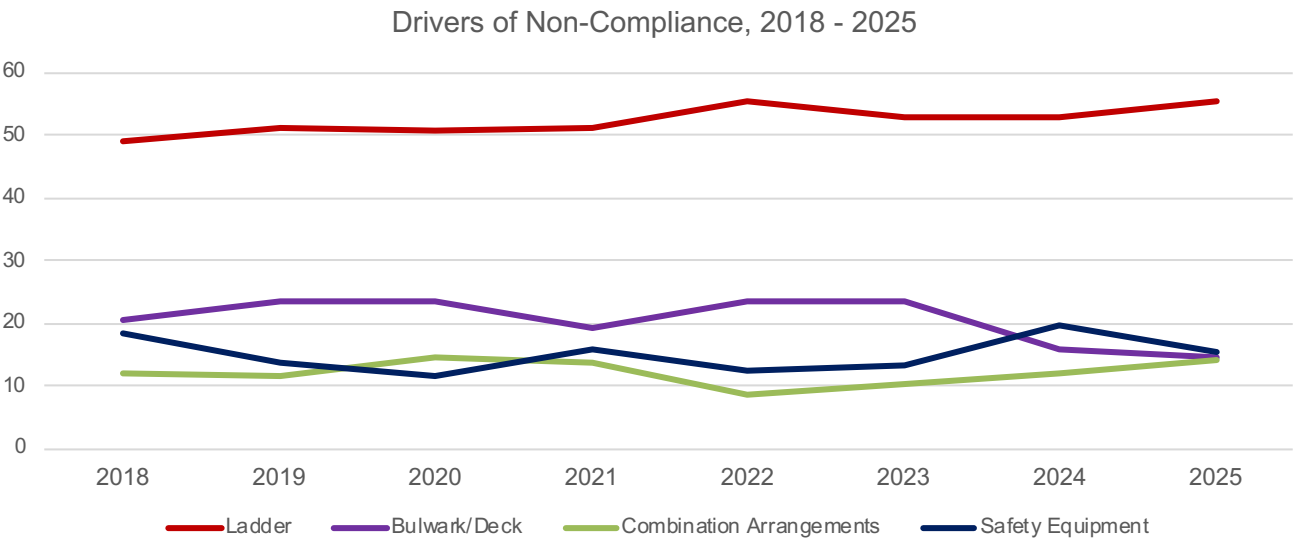
No significant change to historic non-compliance trends

Pilot ladders remain the leading source of non-compliant observations

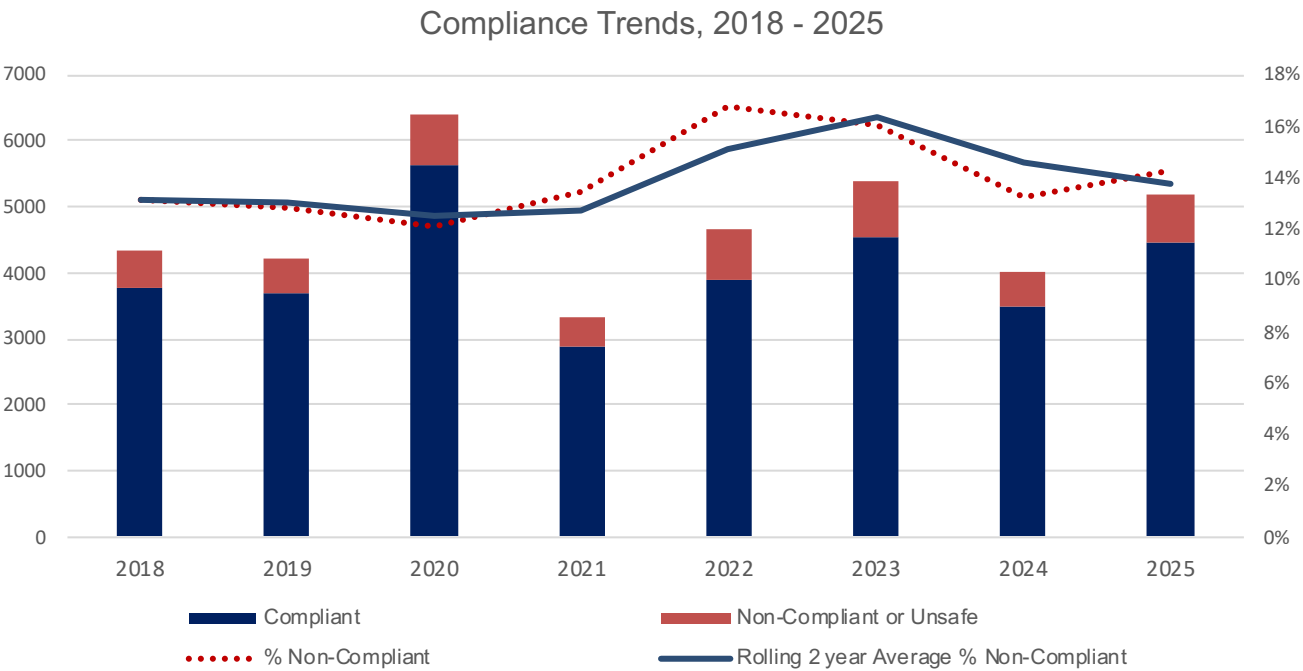
10% of non-compliant pilot ladders were not secured to a strongpoint

85% of non-compliant observations were not reported to port State authorities

Headlines from 2025



Drivers of Non-Compliance, 2028-2025



Compliance Trends, 2018-2025

International Pilots Welcome Step Change in SOLAS Requirements for Pilot Transfer Arrangements



Matthew Williams
IMPA Secretary General

The International Maritime Organization has adopted amendments to SOLAS and a new mandatory performance standard to enhance the safety of pilot transfer operations. The step change to a mandatory regime is the most significant regulatory contribution to the safety of maritime pilots on duty in a generation.

Maritime pilots around the world make a critical contribution to the safety of navigation, the prevention of waterborne pollution and the efficiency of maritime trade. Pilots directing the navigation of ships during over 3 million acts of pilotage every year deliver a x528 reduction in risk (TEMS, 2022). Delivering this public benefit is now made safer by the adoption of amendments to SOLAS and a new mandatory performance standard for pilot transfer arrangements.

The Maritime Safety Committee of the IMO adopted amendments to SOLAS regulation V/23 and new mandatory performance standards for pilot transfer arrangements at its 110th session in June. Adoption is a critical milestone that paves the way for the entry into force of the new regime on 1 January 2028, marking the most significant step in a generation to make doing that work safer.

The amendments to SOLAS build on existing requirements, recommendations and industry standards, whilst introducing critical changes. For example, pilot ladders and manropes will now be treated as consumables, to be replaced automatically no later



than 36 months after the date of manufacture, and self-certification by manufacturers is no longer an option due to a tighter type-approval regime. The new performance standards also align with ISO 799, Parts 1, 2, and 3, in key areas, including the design, arrangement, and rigging of trapdoors. In response to a study by NC2 and commissioned by IMPA, the new performance standards also require dedicated means of securing pilot ladders at intermediate lengths.

The IMPA Executive and Secretariat appreciate the support we have received across member States at IMO, and the outcome is testament to what can be achieved when pilots' organisations around the world work together.

The results of IMPA's 2025 Annual Safety Survey serve as a timely reminder of the importance of these changes. Observed non-compliance remains high, at 14%, based on over 5,000 reports received in May 2025. It is anticipated that the new performance standards will help change this situation. IMO is also taking the step of encouraging flag States to pursue voluntary early implementation,

and IMPA is ready to assist member States, shipowners, operators, seafarers, and equipment manufacturers in implementing the new requirements.

Whilst maritime pilots are, in many ways, custodians of SOLAS regulation V/23, the new performance standards are not just for the benefit of maritime pilots. According to Intermanager, 7% of fatalities onboard ships resulting from falls are related to the use of pilot ladders. This means that seafarers, inspectors, surveyors, and other personnel using pilot transfer arrangements should also benefit from these changes.

The new requirements enter into force on 1 January 2028, with implementation outlined in Figure 1. To support seafarers, the new performance standards are backed by a revision of the IMO Circular on required pilot transfer arrangements (MSC.1/Circ.1428). The illustrations prepared by IMPA's working group on pilot transfer safety, and approved by IMO, now contain a QR Code, which allows access to a resources page on the IMPA website to support companies and seafarers in presenting compliant pilot transfer arrangements.

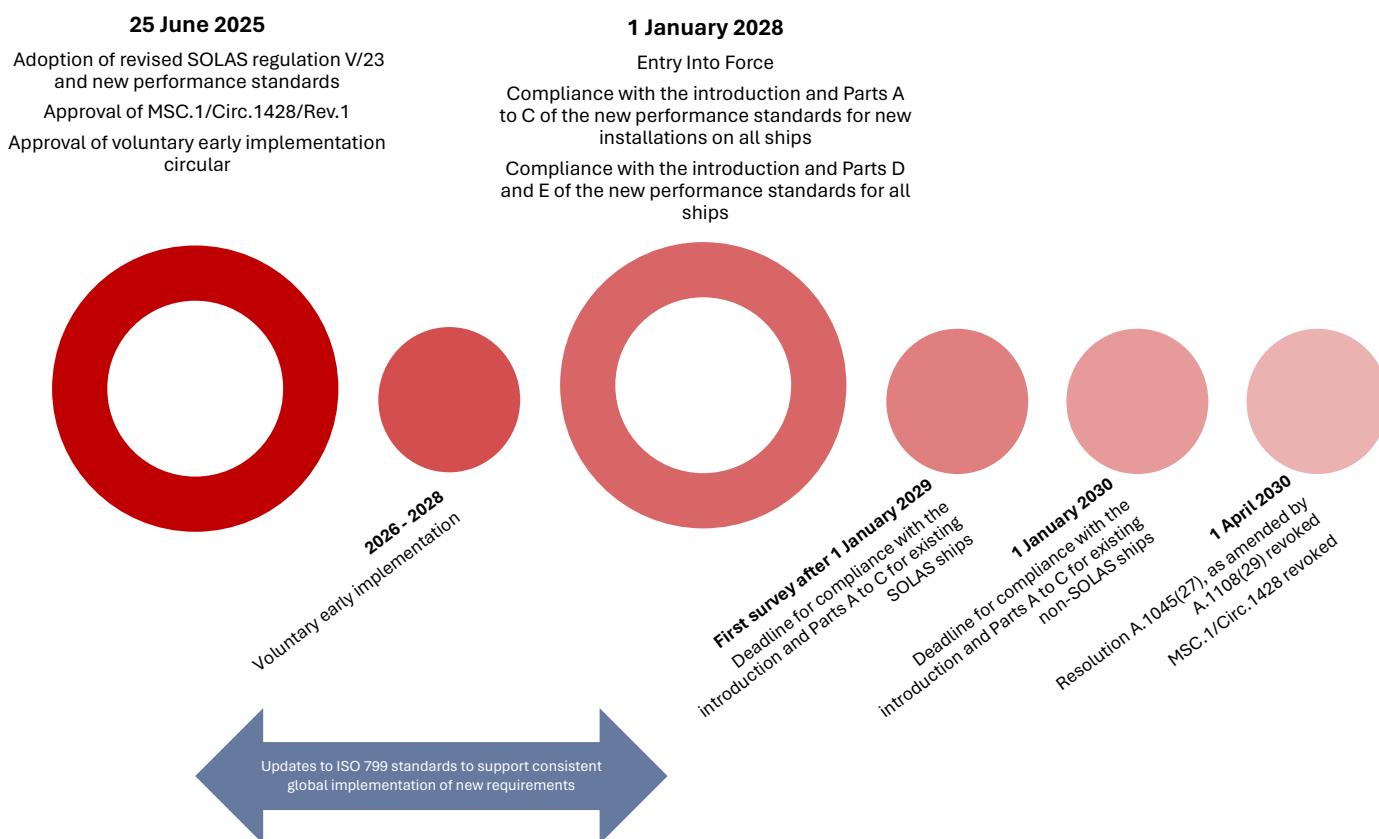


Figure 1: Implementation timeline for amendments to SOLAS regulation V/23

The amendments to SOLAS and the new performance standards will be made available on the IMPA website as soon as they become available.

Community

Message from the IMO Secretary General



Mr. Arsenio Dominguez
IMO Secretary General

In a changing world, the maritime sector must adapt to increasingly complex realities. Today, the horizon is shaped by opportunity and pressure, by geopolitical uncertainty, rapid technological advancement, the urgent drive for decarbonization and the ongoing need to protect the people who keep global trade moving.

At the International Maritime Organization, our role is not only to regulate but to create a future where innovation, safety, sustainability and people move forward together. As we navigate this next chapter, the challenge is not just to modernize the industry, but to keep humanity at the centre of progress.

When I began my tenure as Secretary General just over a year ago, I set out four priorities for the IMO Secretariat: strengthening our role as global shipping regulator; enhancing our support for member states; improving our public image; and investing in our own people. That last focus area — our people — anchors all the others. It is also a guiding principle for how we approach the future: no

one should be left behind.

Navigating Global Crises

The importance of the human element has been most evident when facing global calamities. During the COVID-19 pandemic, while ships continued to sail carrying essential goods and medicines, thousands of seafarers were stranded on board, unable to disembark due to travel restrictions. It revealed just how vital, and yet invisible, much of the maritime workforce remains. Maritime pilots were among those who continued working in high-risk conditions to keep global supply chains moving.

Throughout the pandemic, IMO worked with industry partners and UN agencies to advocate for crew change protocols, vaccine prioritization and the recognition of seafarers as key workers. The crisis served as a powerful reminder of how dependent the world is on maritime professionals, and why a people-first approach must guide us going forward.

More recently, geopolitical tensions in the Red Sea and Black Sea have had devastating consequences for global trade, the shipping industry, and for seafarers themselves. IMO has consistently called for the protection of seafarers, insisting that they must never be collateral damage in wider geopolitical challenges. We have fostered collaboration between Member States, industry and other stakeholders to strengthen maritime security, backed by targeted initiatives like the EU-funded Red Sea Project, which supports capacity-building at national and regional levels.

Transitioning to Net-Zero Shipping

The future of shipping will be defined by how effectively we tackle the climate crisis. The 2023 IMO Strategy on the Reduction of GHG Emissions from Ships sets a target of reaching net-zero emissions from international shipping by or around 2050. This goal requires a profound transformation in how ships are built, powered and operated.

Later this year, the anticipated adoption of the IMO Net-Zero Framework, including mandatory measures for a global fuel standard and pricing on GHG emissions will mark another major milestone.

However, environmental progress must not come at the expense of human safety. To meet 2050 decarbonization targets, an estimated 800,000 seafarers will need training to handle alternative fuels by the mid-2030s. These fuels pose real operational and safety risks, which is why IMO has developed interim safety guidelines for ships using ammonia, hydrogen and methanol, while advancing new training standards for seafarers.

The ongoing comprehensive review of the STCW Convention will further align skills development with the needs of this evolving industry. A just and fair transition depends on placing people's safety and professional development at the forefront of climate action. On this journey, everyone — from governments to shipowners, port authorities, seafarers and pilots — has a critical role to play.

Technology that Empowers

Finally, we are entering an era shaped by digital transformation. Artificial intelligence, autonomous shipping technology and smarter port logistics are no longer abstract concepts but increasingly integrated into vessels and infrastructure.

To guide this transformation, IMO's Strategy on Maritime Digitalization, due for adoption in 2027, will aim to establish a globally harmonized, interconnected digital ecosystem for shipping. Meanwhile, our work on digitalization, including Maritime Single Windows, e-navigation, cybersecurity and Maritime Autonomous Surface Ships (MASS), continue to ensure that safety and accountability remain core principles in the digital age.

New systems will require reskilling to equip today's workforce with tomorrow's expertise, while also addressing cyber risks and bridging the global digital divide. But let us be clear: technology must empower people, not displace them.

While digital tools can support decision-making and safety, the judgment, instinct or leadership of those at sea, especially in complex or high-risk situations, must be emphasized. Maritime pilots, for example, operate in some of the most demanding environments, relying on deep local knowledge and real-time decision-making. Pilotage reminds us that even in an age of automation, human experience remains irreplaceable.

Our Ocean, Our People

This year's World Maritime Day theme, "Our Ocean, Our Obligation, Our Opportunity", speaks to our collective mission. The ocean is home to countless marine species, a highway for more than 80% of global trade, and a source of jobs and food for millions of people. As the largest sector operating in the ocean space, shipping has a central role to play in the protection of the marine environment and management of ocean resources.

But none of the progress we pursue — whether in decarbonization, digitalization or maritime safety and security — can succeed without investing in people. That means accessible, high-quality training, commitment to gender equality and diversity, and a maritime culture that embraces innovation while valuing those who carry it out.

The future of shipping depends not only on emissions targets and new technology, but by how well we support the hardworking men and women who serve in it. If we stay true to our purpose and keep people at the helm, I have no doubt we will navigate the transitions ahead with agility, clarity and a shared resolve. Here's to the next fifty years of safe passage and shared progress.



International Maritime Organization's World Maritime Day theme for 2025

International Day for Women in Maritime 2025



Eliane Blanch,
IMPA Sustainability and Relationship Director

Each May, the global maritime community turns its attention to gender equality through the International Day for Women in Maritime, an initiative led by the International Maritime Organization (IMO) to recognise the achievements and contributions of women throughout the sector.

Springtime in London always brings a renewed sense of energy, but this annual celebration adds a particularly meaningful spark to the season for those of us working in this vital industry.

This year's theme, "An Ocean of Opportunities for Women", echoed the broader 2025 World Maritime Day theme, "Our Ocean, Our Obligation, Our Opportunity." On 16 May, the IMO hosted a half-day symposium at its London headquarters to explore how inclusive maritime careers can drive innovation, equity, and sustainability.

Symposium Highlights

The day began with opening remarks from IMO Secretary-General Arsenio Dominguez, who underscored the urgency of dismantling barriers to women's participation. He called for action through education, mentoring, policy reform, and a cultural shift to enable success "from deck to boardroom".

A live podcast followed, moderated by Karanvir Singh Nayyar, featuring Captain Josephine Clark, President of the Australasian Marine Pilots Institute (AMPI), alongside Saudi Arabian cadet Mariam Al Shaikh. Their inspiring conversation centred on resilience, leadership, and broadening access to maritime careers. Captain Clark

emphasised, "*Pilotage is a career for everybody, boys and girls alike,*" encouraging younger generations to consider this rewarding profession.



Left to right: Cadet Al Shaikh and Capt. Clark

The symposium continued with the presentation of key findings from a gender inclusion survey, followed by two engaging panels. The first focused on ocean conservation and youth leadership, while the second explored the challenges and opportunities of career progression, calling for structural reform and meaningful inclusion across the maritime workforce.

The event also honoured Dutch maritime leader Karin Orsel with the 2025 IMO Gender Equality Award. The celebration concluded with a vibrant rooftop reception overlooking the Thames — a sunny evening filled with conversation, laughter, and plenty of dancing! Having attended numerous IMO events, I can confidently say this was among the most joyful and energising yet!

Captain Simon Pelletier, President of IMPA, joined us for the event, and we were delighted to welcome colleagues from Australia and the UK. I am pleased to share a brief introduction to their careers and stories, so you can get to know them a little better.

Let's find out what they consider the best, and the most challenging aspects of being a marine pilot.



Left to right: Caz Palmer, Josephine Clark, Eliane Blanch, Elspeth Diack and Barbara Charlton

Captain Josephine Clark, **AMPI President (Australia)**

Captain Josephine Clark is the President of the Australasian Marine Pilots Institute and a senior pilot at Port Kembla. With nearly two decades of pilotage experience, she has held positions including Check & Training Pilot and Harbour Master at Eden on the New South Wales south coast.

Her maritime journey began in 1989 as a cadet on bulk carriers and LNG tankers, rising to Master after 14 years at sea. A career diversion into chartering with BHP Billiton in Melbourne and The Hague expanded her industry perspective. She is particularly passionate about simulation-based training and creating alternative pathways into the profession.

Best part of the job?

"The satisfaction of a well-executed manoeuvre."

The downside?

"Disrupted sleep patterns that come with the job."

Captain Elspeth Diack, **Dampier Pilot (Australia)**

Captain Elspeth Diack is a seasoned Master Mariner and unrestricted pilot currently based in Dampier, Western Australia, with extensive experience in LNG operations. She has held pilotage licences across six Western Australian ports, reflecting her breadth of expertise in diverse maritime environments.

Her seafaring career began in 1991 as a deck cadet on container vessels, later moving to LPG carriers. She

gained her Master Unlimited Certificate in 2000 and has spent the past 17 years specialising in pilotage.

Elsbeth is known for her precision and calm under pressure, particularly when navigating in complex or high-stakes conditions.

Most rewarding aspect?

"Executing a challenging manoeuvre with accuracy and control."

Most challenging?

"Managing fatigue, and explaining the depth of our work to those unfamiliar with the realities of pilotage".

Captain Barbara Charlton, **PLA Pilot (UK)**

Captain Barbara Charlton began her seafaring career at just 16 on sail training vessels. She went on to work with major cruise lines and ferries, eventually transitioning ashore into senior leadership roles in risk, safety, and compliance, as well as lecturing in maritime education.

Today, she serves as a Port of London Authority pilot in Southampton. Barbara is a strong advocate for professional standards, mentoring, and safety across the industry.

Best part of the job?

"Meeting people and the hands-on challenge of ship handling."

The biggest challenge?

"Captains who mistake overconfidence for professionalism."

Captain Caroline "Caz" Palmer, **PLA Pilot (UK)**

Captain Caz Palmer brings nearly 20 years of maritime experience, having started her career as a cadet with Carnival UK. She progressed through the ranks to become the first permanent female Master of Hebridean Island Cruises in 2022.

In 2024, she qualified as a pilot with the Port of London Authority, embracing the role as a natural evolution of her captaincy, combining navigation expertise with ship handling under pressure.

Beyond her professional role, Caz is a committed Sea Cadet Corps volunteer and a passionate advocate for diversity and inclusion in maritime careers.

Most rewarding aspect?

"Navigating ships and putting my ship handling skills to the test — it's the best part of being a captain, condensed."

Least enjoyable?

"Working unsociable hours and being away from family."

Navigating the Future with an Eye into the Past



Capt. Miguel Vieira,
EMPA President

This year, the European Maritime Pilots' Association (EMPA) General Meeting convened in Kraków, Poland from May 28-30. Key topics of discussion included:

AI and Maritime Operations: Concerns were raised about AI's inability to interpret complex maritime rules and respond to unexpected dangers. Discussions also explored the gap between AI's logical decision-making and human intuition.

Maritime Autonomous Surface Ships (MASS): Although progress is being made, legal, technological, and operational barriers slow down widespread adoption. Experts highlighted new vulnerabilities in autonomous ships, stressing the need for human oversight in unforeseen situations.

Remote Pilotage: Trials were discussed, with concerns about signal interference, jamming, and connectivity issues affecting shore-based pilots' ability to accurately assess navigation conditions.

Greenport Alliance Project: A training programme in development, aimed at reducing emissions in port operations while maintaining safety and efficiency, was presented. Collaboration between academia and industry is seen as crucial to driving sustainability.

Geopolitical Tensions: Experts warned that geopolitical conflicts are increasing digital threats to navigation systems, stressing the importance of skilled pilots in countering these risks.

Digitalisation: While digitalisation boosts efficiency, it



Capt. Patrick Galvin,
AMPI Chairman

also creates stress and reduces teamwork, as reliance on screen-based navigation weakens situational awareness. As the EMPA GM drew to a close, the following main conclusion emerged: AI, autonomous shipping, remote pilotage, and green initiatives will reshape maritime navigation, but pilots must remain at the helm.

Finally, elections were held for a new EMPA President and four EMPA Vice Presidents. Kaj Hahtonen was re-elected but left early due to last minute flight changes. The other EMPA Board members are pictured in the photo, from left to right: EMPA Vice Presidents José Antonio Pérez Lorente, Peter Lightfoot, Gerhard Janssen, Salvatore Mecca, Stéphane Pousset, EMPA President Miguel Vieira de Castro and EMPA's Administrative secretary Elke Bogaerts.



New EMPA Board

EMPA Priorities and Short-term Plans

While the logistics chain faces challenges such as geopolitical instability, emission reduction, and digital transformation, EMPA remains firmly committed to safety, security, efficiency, sustainability, and ever improving the quality of pilotage.

In recent years, geopolitical tensions in Europe and shifting trade routes have increased pressure on European ports and port services. Therefore it is more important than ever for pilotage services to remain independent, as a service of public interest, free from commercial pressure, and to ensure pilots are able to make decisions based on safety.

The EMPA Technical and Training Committee strives to provide relevant information and best practices for all interested individual members. Meanwhile, the EMPA safe app was created to allow pilots to inform others about ships' technical problems or deficiencies in the pilot transfer arrangements.

EMPA is also committed to promoting diversity and inclusion and will support and promote initiatives to support equitable recruitment and leadership development.

Pilots play an important role in promoting low-emission navigation and sustainable port practices. EMPA is currently collaborating with academia and stakeholders in an attempt to drive behavioural change and reduce emissions. Digital tools are transforming maritime logistics, and pilots must lead in using new technologies while aligning environmental responsibility with technological advancement, never disregarding the risks and threats that fully relying on these technologies may present.

Finally, EMPA will continue to engage in maritime policy development. Pilots are not only expert in shiphandling and using their unparalleled local knowledge and experience to ensure safety of navigation, but also principal contributors in ensuring safety, security and environmental protection daily throughout the European port network. To ensure we continue along the same paths, with pilots as the key link, EMPA will continue to work closely together with EU institutions, other maritime stakeholders, and of course with IMPA, which is instrumental in representing pilots globally at the International Maritime Organization (IMO).





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with services, resources, strategy and advocacy



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OVER 13,600

seafarers and their family
members of 94 different
nationalities assisted in 2022

The International Seafarers' Welfare and Assistance Network (ISWAN) is an international maritime charity organisation based in the UK. We have teams working in India and the Philippines to provide humanitarian support in these regions, and we administer a number of relief funds to provide financial support to seafarers and their families in crisis or with urgent needs.

To find out more about ISWAN's work and how you can support or work with us, visit our website or get in touch:

 www.seafarerswelfare.org  iswan@iswan.org.uk  +44 (0)300 012 4279

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ISWAN



IMPA XXVII Congress – Bali 2026

The date is fast approaching for the IMPA XXVII Congress, which will take place from 23 to 28 August 2026 at the stunning Apurva Kempinski Hotel in Bali, Indonesia. Hosted by the Indonesian Maritime Pilots' Association (INAMPA), the Congress promises to be an unforgettable gathering of maritime pilots and industry professionals from across the globe.

We are greatly looking forward to this global event, which will bring together expertise, innovation, and insight through a programme tailored specifically to the needs and interests of pilots. Delegates can expect a series of high-level presentations covering key topics such as:

- Safety
- Ship Handling and Performance
- Pilotage Systems
- Human Capital
- Emerging Technologies

As always, IMPA's tradition of combining professional exchange with meaningful networking will continue through a carefully designed social programme. From the Welcome Reception to the Gala Dinner and cultural excursions, the Congress offers numerous opportunities to connect, collaborate, and enjoy the warm hospitality of Indonesia. A dedicated Accompanying Persons Programme will ensure that partners and guests also enjoy a rich and memorable experience alongside the main event.

With preparations well underway, we encourage all members to begin making travel plans and secure their place at this important event in the IMPA calendar. Registration details will be shared soon.

We look forward to welcoming you to Bali in 2026 for what promises to be a truly exceptional Congress.



AUGUST 23rd - 28th, 2026
BALI - INDONESIA

Sustainability

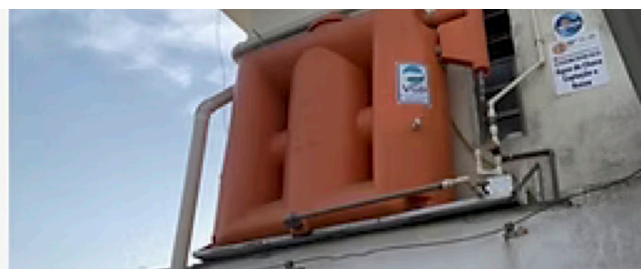
Santos Pilots: Navigating Towards Sustainability



Conrado Bertoluzzi,
Environmental and Sustainability Consultant
and Via Green Institute Founder

In an era where environmental stewardship is no longer optional, Santos Pilots in São Paulo, Brazil, has risen as a beacon of sustainability. Over the past four years, this pioneering company has embraced innovative practices to monitor and reduce its environmental impact, reaffirming its commitment to a greener future.

At the heart of this initiative is the adoption of the ESG (Environmental, Social, and Governance) model, brought to life through the Via Green Program (VGP), an initiative developed by the Via Green Institute. This comprehensive program tracks key sustainability metrics, including water footprint, energy efficiency, waste management,



Rainwater harvesting

and greenhouse gas (GHG) emissions. By keeping a close eye on these areas, Santos Pilots is setting a high standard for environmental responsibility in the maritime sector.

A cornerstone of this effort is the meticulous measurement of GHG emissions. Through the GHG inventory conducted by Via Green, Santos Pilots identifies the primary sources of emissions within its operations. This data-driven approach enables the company to craft targeted strategies for reducing its carbon footprint, ensuring steady progress toward its sustainability goals.

The annual VGP report showcases the company's achievements in sustainable practices. From rainwater harvesting and reuse to the adoption of solar energy, Santos Pilots is continuously innovating to minimize its environmental impact. One standout initiative is the replacement of mechanical engines on pilot boats with electric motors, a move that has reduced carbon dioxide emissions.



Santos Pilots



Solar Panels

Climate change's tangible effects — dense fog, heavy rainfall, and heightened wave activity — pose significant challenges to port operations. These adverse conditions not only disrupt maritime activities but also underscore the urgency of adopting sustainable practices to mitigate their impact. By addressing these challenges head-on, Santos Pilots is setting an example for the industry.

Moreover, in Brazil, the recent regulation of the carbon market amplifies the urgency for organizations to measure and mitigate their environmental impact.

Santos Pilots, as a trailblazer in assessing its carbon footprint, offers a pattern for sustainability that other pilotage services and port operations can follow.

Driving this transformation is Via Green Institute, a Brazilian organization with international reach. Specializing in technology, innovation, and socio-environmental solutions, Via Green empowers companies to combat climate change while safeguarding society and the environment. Together, Santos Pilots and Via Green are proving that sustainable maritime operations are not just possible but essential for a thriving future.



Pilot boat transitioning to electric propulsion

PNG Ports Raise the Bar in Pilotage Training



Mr Felix BAURI,
Chief Operating Officer



Mr Joji TAKAPE,
Chief Pilot

PNG Ports Corporation (PNG Ports), the dominant port operator and marine pilotage leader in Papua New Guinea, has raised the standard of PNG's pilotage services following a programme of LNG tanker training undertaken in Port Moresby and Brisbane. Theoretical, practical, and simulator training finessed the skillsets of six of PNG Ports' most experienced pilots, two of whom already pilot LNG tankers, and all of whom have vast experience on multiple vessel types.

PNG Ports' pilots have serviced the Caution Bay LNG terminal operated by ExxonMobil PNG Limited since 2014 when the country first commenced its LNG exports. Crucial to PNG's developing economy, the LNG sector contributes significantly to the nation's GDP, with Caution Bay currently the sole terminal for this highly important export.

Under an MOU with ExxonMobil PNG Limited, PNG Ports is committed to training and certifying pilots through PNG's National Maritime Safety Authority (NMSA) to meet regulatory standards.

The six pilots who've recently received training constitute both a 'pool' and a 'pipeline' of LNG tanker pilotage talent. Two of the pilots are already experienced LNG tanker pilots and another two have received all necessary training and assessment and are just waiting to be signed off. The remaining two pilots, who have undertaken the first stage of the LNG training programme, are continuing to progress and are expected to achieve competency in the near future.

The LNG training programme was developed and overseen by McGuire Maritime. Chief Operating Officer of PNG Ports, Felix Bauri, described the simulator training component, conducted at the Smartship Australia

simulator centre in Brisbane, as "especially critical for LNG pilotage and particularly so for a country like PNG which is so dependent on LNG exports." He added that "simulator training is also the only way a pilot can be consistently trained in a range of contingencies and emergencies such as steering failure or tug error, as well as in adverse weather conditions."

Bauri reported that additional pilots will continue to be identified for the LNG training in line with business continuity planning. This is timely given that the Nation's LNG output (and therefore exports) is set to increase with the imminence of its second major LNG project, the Total-led Papua LNG development, as well as the ExxonMobil-led P'nyang LNG Project.

However, it's not just an increase in LNG tankers that PNG Ports pilots will need to service but an increase in all manner of vessels. The construction phases of the P'nyang and Papua LNG projects will be associated with a steep increase in large cargo vessels in particular, given that nearly all equipment and materials required for construction needs to be imported by sea.

"The training our pilots undertake to qualify them for LNG tanker pilotage is of the highest possible international standard", said Bauri. "As such, it more

than qualifies them to pilot any type of major vessel that services PNG, not just the LNG tankers. In other words, the LNG training our pilots receive isn't just good for LNG operators but for any shipping company that calls into PNG because it provides them with a higher quality and safety assured pilotage experience, as well as one that is in full compliance with international maritime regulations."

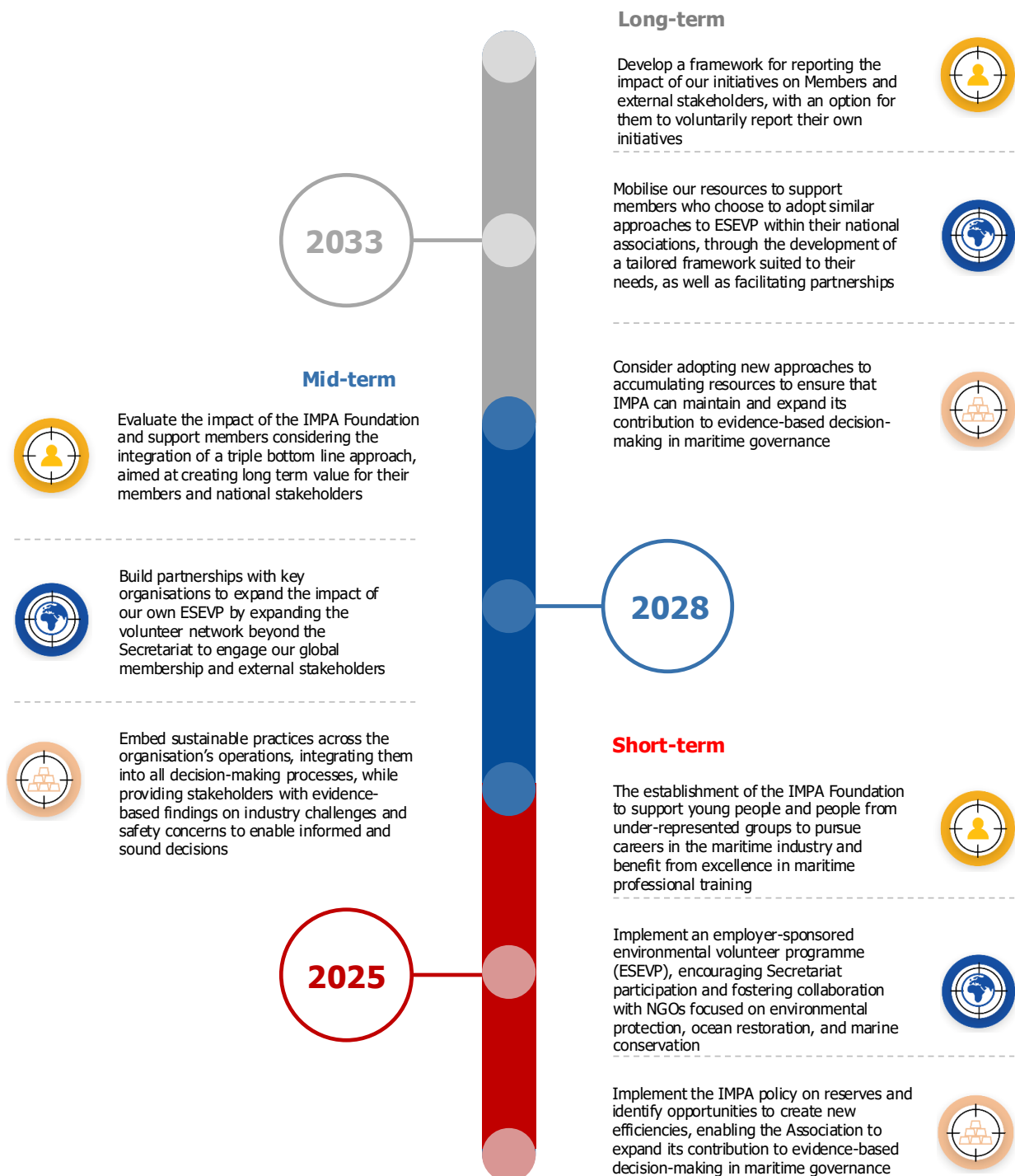
CEO Neil Papenfus is adamant that he doesn't only want to raise the bar when it comes to the training PNG Ports' pilots receive but all of the country's pilots. The PNG

and Australian governments signed off on a A\$621.4 million PNG Ports Infrastructure Programme in 2022, to repair and upgrade seven key ports. Papenfus believes that "one way to protect this investment is to prevent future damage from ship collision, and that this can in part be achieved by having better trained pilots, with improvements in training to be mandated by the NMSA and tied to licensing." Another mechanism by which Papenfus says vital port infrastructure can be protected is to increase the number of pilotage mandated ports. Only six of PNG's 23 declared ports are mandated.



Left to right: Captains Haoda Virobo and Bonny Aisa during a simulation exercise, part of PNG Ports' LNG tanker training programme, at Smartship Australia in Brisbane.

IMPA's Sustainability Roadmap



The Sustainability Roadmap summarises IMPA's commitment to advancing the three core pillars of our recently published Corporate Social Responsibility (CSR) Strategy — People, Planet, and Profit — and presents a timeline illustrating how these pillars influence decision-making across the organisation.

Technology

Clean Technology: Biodiesel As An Alternative Marine Fuel



Capt. Mustafa Sökükcü,
UZMAR, Maritime Pilot & Ph.D Candidate

The maritime sector is increasingly moving toward alternative fuels in an effort to lessen its reliance on fossil fuels. While the policies of the governments have a significant role in the selection of fuel types, the amount of the reserve, the production costs, environmental friendliness, and ease of supply constitute the other noteworthy selection criteria in recent years. The use of biofuels is promoted in developed countries to reduce the effects of global warming, reduce the creation of harmful pollutants, and lower the proportion of fossil fuels used in transportation. Biofuels are an essential alternative to fossil fuels due to their energy potential, accessibility of raw material sources, and potential for environmental production.

In this paper, advantages and disadvantages of biodiesel usage at sea for the achievement of sustainable maritime transportation goals have been evaluated. SWOT-AHP (Analytic Hierarchy Process) hybrid methodology was employed to assess various facets of biodiesel with the participation of experienced maritime experts which also

include maritime pilots.

The term of biomass refers to the dead or decomposed biological components of living organisms, particularly those from plants and animals. Biodiesel is one of the primary biofuels that has been studied across four different generations. First-generation biofuels are made from primarily human-consumed products such as corn, wheat, sugar cane, etc. Because of its source being feedstock generally obtained from arable farmland, these create the food vs fuel debate around land use. Second-generation production concentrates on non-edible goods, waste oils and forestry wastes to eliminate these debates. Studies on the third-generation biofuels production, in which primary feedstock is algae, have grown as a result of the other generations not achieving as high levels of efficiency. Experts in biofuels are intending to solve all the issues with the fourth generation which is synthetic-based biofuels but the transition to commercial applications has not been completed yet. The future energy need can be met not only by one generation but also through the merging of generations as environmentally friendly.

Biofuels have long been utilized in the maritime industry because they can be blended with the fossil fuels already used on board, which decreases both the consumption of fossil fuels and greenhouse gas emissions. In addition to carbon emission reduction, very low or zero sulfur emissions promise to have a significant impact on maintaining the maritime industry's annual reductions in sulfur limits. A widespread shift from fossil fuel to biofuel in the maritime industry will improve fuel quality as well as air quality, the ecological environment, and human health.

Utilizing biodiesel in marine diesel engines comes with se

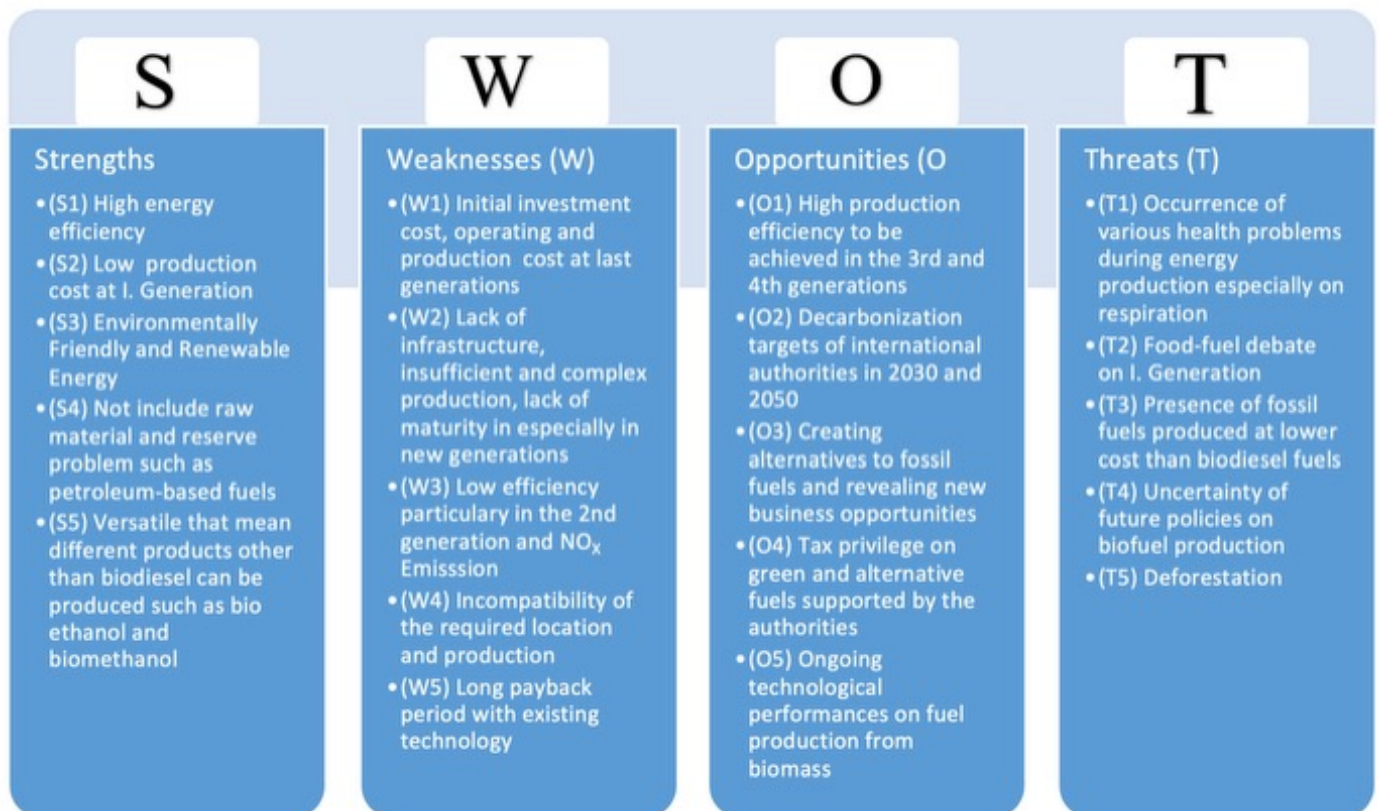
with several difficulties and potential risks, although biodiesel fuel is sustainable and eco-friendly compared to conventional diesel fuel. The tendency to form deposits and sludge, along with drying and thickening, especially in cold weather, can increase viscosity and affect atomization and flow properties. This may lead to clogged fuel filters and injectors, cause rubber and plastic parts to swell and become brittle, and damage other engine components, thereby reducing engine performance and increasing maintenance costs.

In addition, biodiesel is less stable and more susceptible to oxidation and bacterial growth. The low energy density of biodiesel presents another difficulty when using it in conventional diesel engines. In other words, more fuel is needed to create the same quantity of energy which leads to increased fuel consumption and higher operating

costs. The lack of marine-grade fuel specifications, cold flow properties, fuel supply, storage, and infrastructure are one of the main issues that should be taken into consideration for biodiesel as alternative fuel.

“Biofuels are an essential alternative to fossil fuels due to their energy potential, environmental benefits, and accessibility of raw materials”

SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis is a commonly preferred technique that evaluates the aimed strategies considering determined factors and highlights how to implement the innovations.



SWOT factors for the evaluation of biodiesel as an alternative fuel

As a result of AHP analysis; among the main factors, "Opportunities" have the greatest significance followed by "Strengths", "Threats" and "Weaknesses" factors, respectively. The promise of biodiesel as a future marine fuel is highlighted by the fact that opportunities priority weights as much as the total of all other factors.

"Tax privilege on green and alternative fuels supported by the authorities" (O4) constitutes the peak with the highest importance among the sub-factors. The outputs of the analysis demonstrate that the other high-ranked sub-factors are "Creating alternatives to fossil fuels and revealing new business opportunities" (O3), "Decarbonization targets of international authorities in 2030 and 2050" (O2), "High production efficiency to be achieve in the 3rd and 4th generations" (O1), "Environmentally friendly and renewable energy" (S3) and "Ongoing technological performances on fuel production from biomass" (O5) respectively.

The least important sub-factors determined in the analysis can be listed as "Long payback period with existing technology" (W5), "Incompatibility of the required location and production" (W4), "Initial investment cost, operating and production cost" (W1), "Uncertainty of future policies on biodiesel production" (T4) and "High energy efficiency" (S1). These outcomes emphasize

that the problems concerning cost, legalization and production processes have been found as solvable regarding expert opinions when all legislative barriers are removed.

Sustainability and production costs for the utilization of biodiesel on marine engines to reduce emissions and harmful environmental impacts are also important. Authorities will play a crucial role in fuel taxation of countries, acquisition of the feedstock, production location, and cost. The external dependence on feedstock to produce biodiesel can slow down some countries to make some moves on the legalization issues. On the other hand, countries that demand high taxes for such investments can discourage investors in this field.

Briefly, biodiesel has significant potential as an alternative fuel for maritime applications. Improved efforts to eliminate existing weaknesses and threats will pave the way for the widespread use of biodiesel in the future.

REFERENCE

Compiled and created from the following academic paper: "Bayraktar, M., Pamik, M., Sokukcu, M., & Yuksel, O. (2023). A SWOT-AHP analysis on biodiesel as an alternative future marine fuel. Clean Technologies and Environmental Policy, 1-16."



Illustration of a biodiesel-powered vessel at sea

THE AGE OF GIANTS:

How Precision Technology is Redefining Maritime Piloting Excellence



Mr. Tommy Mikkelsen,
Managing Director, Navigation and Piloting Division,
Trelleborg

In my decades of experience navigating the evolving landscape of maritime operations, I've witnessed a transformation that fundamentally challenges everything we thought we knew about ship handling. We are living in the age of maritime giants, vessels so massive that they defy the traditional boundaries of seamanship and demand a transformative approach to piloting.

The Scale of Today's Challenge

The numbers tell a compelling story. It is common knowledge within the maritime industry that the World Economic Forum estimates that 90 percent of the world's goods travel by sea. When we break it down the figures are particularly compelling. This represents 11 billion tons of cargo annually, approximately 1.5 tons for every person on Earth. This staggering volume of maritime traffic has driven an unprecedented evolution in vessel design.

Consider this stark comparison: The first container ship, SS Ideal X, launched in 1956 was a converted World War II T-2 oil tanker that carried just 58 35-foot containers. This pioneering vessel, developed by Malcolm McLean, marked the beginning of containerized shipping that would revolutionize global trade. Contrast that with today's maritime giants like the MSC Irina or Ever Alot, which can carry over 24,000 TEUs (Twenty-foot Equivalent Units); over 400 times the capacity of McLean's original containerized vessel.

We are not just dealing with larger ships; we're navigating

floating cities. When maneuvering a vessel carrying 24,000 TEUs through narrow channel approaches, there is no margin for error. A miscalculation of even a few meters can result in catastrophic grounding, environmental disaster or infrastructure damage costing hundreds of millions of dollars. This reality drove us to develop SafePilot, not to replace pilot expertise, but to amplify it with unprecedented precision.



Simulation training with SafePilot for MPI

The Art and Science of Modern Piloting

Throughout my career, I've always believed that piloting is equal parts art and science. The artistry: reading wind patterns, understanding current behavior, feeling the subtle responses of a vessel, remains irreplaceable. But the science has evolved dramatically as today's pilots navigate ultra-large vessels through channels barely wider than the ships themselves. The under-keel clearances that once provided comfortable safety margins have shrunk to mere meters, requiring calculations precise to the centimeter level.

Modern piloting operations demand mathematical precision that extends far beyond traditional rule-of-thumb calculations. When navigating mega vessels through restricted waters, pilots must account for dynamic under-keel clearance calculations that factor in squat effects, tide variations and vessel loading. Real-time

wind and current compensation become critical for vessels with massive windage areas, while precise timing coordination with tugboat operations and berth availability requires split-second decision-making.

Precision Engineering for Evolving Operations

SafePilot represents the convergence of decades of maritime knowledge with advanced positioning technology. Our SafePilot CAT PRO solution delivers situational awareness accurate to within one centimeter, a level of precision that transforms how pilots approach the most challenging maneuvers.

This technology doesn't diminish the pilot's role; it elevates it. By providing precise, real-time data about vessel position, movement trends and environmental factors, SafePilot enables pilots to make more informed decisions faster. The system handles the complex calculations while the pilot focuses on strategy, timing and the countless variables that require human judgment.

SafePilot's one-centimeter accuracy provides the precision foundation that enables pilots to execute these complex operations with confidence. The system continuously monitors vessel position relative to planned tracks, alerting pilots to deviations before they become critical. This level of precision transforms traditional piloting approaches, enabling safer, more efficient operations even in the most challenging conditions.

As spoofing and jamming attacks become increasingly sophisticated threats to maritime navigation, the industry faces critical challenges in maintaining reliable positioning data. SafePilot is designed with these emerging cybersecurity risks in mind, helping ensure pilots maintain situational awareness even when primary navigation systems face interference.

Preparing Tomorrow's Pilots Through Advanced Training

The complexity of modern piloting demands an equally sophisticated approach to training. Traditional apprenticeships, while valuable, cannot fully prepare pilots for every scenario they will encounter when handling ultra-large vessels in confined waters.

Our recent donation to Louisiana's Maritime Pilots Institute (MPI) exemplifies our commitment to advancing pilot education. We have provided MPI with our state-of-the-art SafePilot CAT PRO solution, SafePilot Pro Navigation software and supporting technology specifically to enhance training standards for aspiring maritime pilots.

The integration of actual piloting tools into training environments creates an unprecedented level of realism. Through simulator-based training and manned model operations, trainees experience authentic equipment interaction using the same systems they'll operate professionally. Scenario-based learning replicates specific port challenges and emergency situations, while performance analytics identify areas for improvement before they become critical. This progressive skill building accelerates competency development safely.

Our bi-annual SafePilot Masterclass programs, including our recent session in St. Augustine, Florida, bring together pilots from around the world to explore advanced navigation techniques and share best practices. When I observe pilots emerging from intensive SafePilot training sessions, I consistently see them returning to their home ports with enhanced skills and fresh perspectives on best practices, strengthening the entire maritime community and advancing our collective commitment to safety and efficiency.

The Future of Maritime Piloting

As we navigate toward an increasingly complex maritime future, the integration of precision technology with human expertise isn't optional; it's essential. The giants of today's oceans demand nothing less than perfection in their handling. Solutions such as SafePilot can assist the industry in achieving that standard consistently.

The marriage of traditional seamanship with advanced technology represents the evolution of our profession, not its replacement. By embracing these innovations while honoring the fundamental principles of piloting, we ensure that maritime operations remain safe, efficient and environmentally responsible in an era of unprecedented vessel complexity.



**SafePilot Masterclass hosted by Trelleborg
Marine and Infrastructure**

International Study on Remote Pilotage



Matthew Williams,
IMPA Secretary General

With our partners, the National Centre of Expertise on Maritime Pilotage (NCEMP) and the Canadian Coast Guard, IMPA is progressing work to ground truth the concept of remote pilotage.




**NATIONAL CENTRE OF EXPERTISE
ON MARITIME PILOTAGE**

 **Government
of Canada** **Gouvernement
du Canada**

Update on Pilotage as a Complex System

We are working with Professor John McDermid and his team at the Centre for Assuring Autonomy at the University of York in the UK to understand pilotage as a complex system. The team represents world-leading expertise in complex systems, including in aviation and healthcare.

As the act of pilotage cannot be separated from the legislative and regulatory framework of a particular country, the boundary of the system encompasses everything from primary legislation to the technical and operational procedures of pilots.

The result is a very complex set of interactions within systems of pilotage, which will need to be modelled and understood. The framework being used for this task is derived from work already done by the University of York on safer complex systems and is outlined in Figure 1.

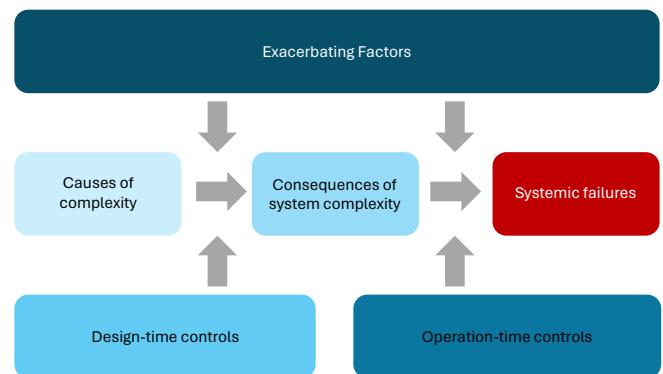


Figure 1: The framework for managing complex systems safely

Figure 1 is based on Safer Complex Systems: An initial framework for understanding and improving the safety of complex, interconnected systems in a rapidly changing and uncertain world, is published by Engineering X, a new international collaboration founded by the Royal Academy of Engineering and Lloyd's Register Foundation (2020).

The value of this framework lies in its emphasis on safety, which aligns with the purpose of maritime pilotage. It has the potential to link features of systems of pilotage, technical and operational practices, to systemic failures.

To provide a simple, illustrative example, in the context of pilotage:

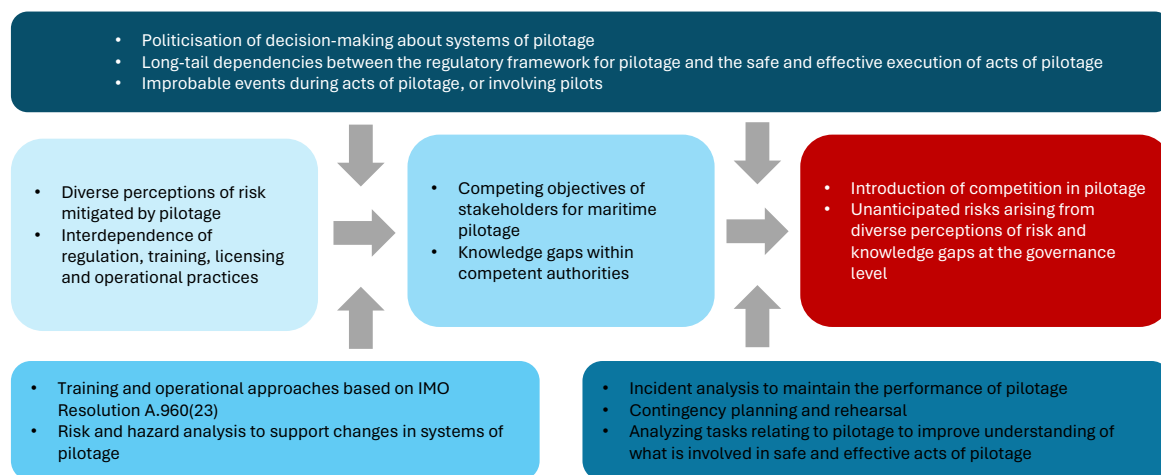


Figure 2: Illustrative example of the framework in the context of maritime pilotage

Specialist expertise on human factors is also being integrated, given the role of human capital in translating the purpose of pilotage into an act of piloting.

The work is currently at the early stages of data collection.

Update on a Technology Readiness Review

In response to the request for information (RFI) issued to the industry in November 2024, IMPA received three technology solution proposals from manufacturers and system integrators. Following preliminary consultations, one of the proposals was withdrawn. The remaining two proposals were initially reviewed through meetings with the proponents, IMPA, NCEMP, CCG and Lloyd's Register in April. The outcomes of the meetings and the supplementary information provided by the proponents are now being evaluated. The results of the evaluation will be published in September.

It is critical to recognise that the purpose of the reviews is not to identify a technology solution that could enable remote pilotage in general. The purpose is to identify technology solutions that could be used within the study, including trials on commercial vessels. What we are looking for is a system(s) that has sufficient capabilities to provide maritime pilots involved in trials with the confidence to find the true limits of what can and cannot be achieved remotely in mandatory pilotage waters. Our study will not achieve its objectives if the results are derived from systems with limited or unrealistic capabilities, or those that are too complex or unreliable.

It would be premature to comment on the outcome of the review, but in the contexts for which solutions have been designed, they have been demonstrated to serve their purpose. The question we are in the process of answering is whether the solutions have, or can be evolved to have, the capabilities that we need to explore remote pilotage and ground truth its potential, or otherwise, in mandatory pilotage waters.

In this regard, we will be using the experience of reviewing the proposals received, in combination with the expertise we have on pilotage, to develop a goal-based framework, including functional requirements, expected performances and specific requirements which can be used to help articulate different degrees of readiness of technology solutions to support us in our trials.

The intention of developing a goal-based framework is not to outline a roadmap for the deployment of remote pilotage, but to start methodically rationalising what a remote pilotage technology system would need to be capable of for the purposes of the study. Additionally, the process will help inform hazard identification and risk assessment processes, which will be essential for enabling the safe conduct of trials, particularly on commercial ships.

The Project Board

A project board with colleagues from Australia, Brazil, Canada, Germany, the Netherlands and the United States oversees the study. The first Project Board was held in March, and a further Project Board will be convened to review the initial results of the Phase 2 technology readiness review.

Local Stakeholder Advisory Group

In March, IMPA hosted a local stakeholder advisory group with organisations based in Canada with either a direct or indirect interest in the study. The group comprises stakeholders in waterways, shipowners and operators, industry bodies, and maritime pilots' corporations. The inaugural meeting was successful, and a further meeting will be held when the outcome of the technology readiness review is finalised.

Updates and information on the project are available on the IMPA website.

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