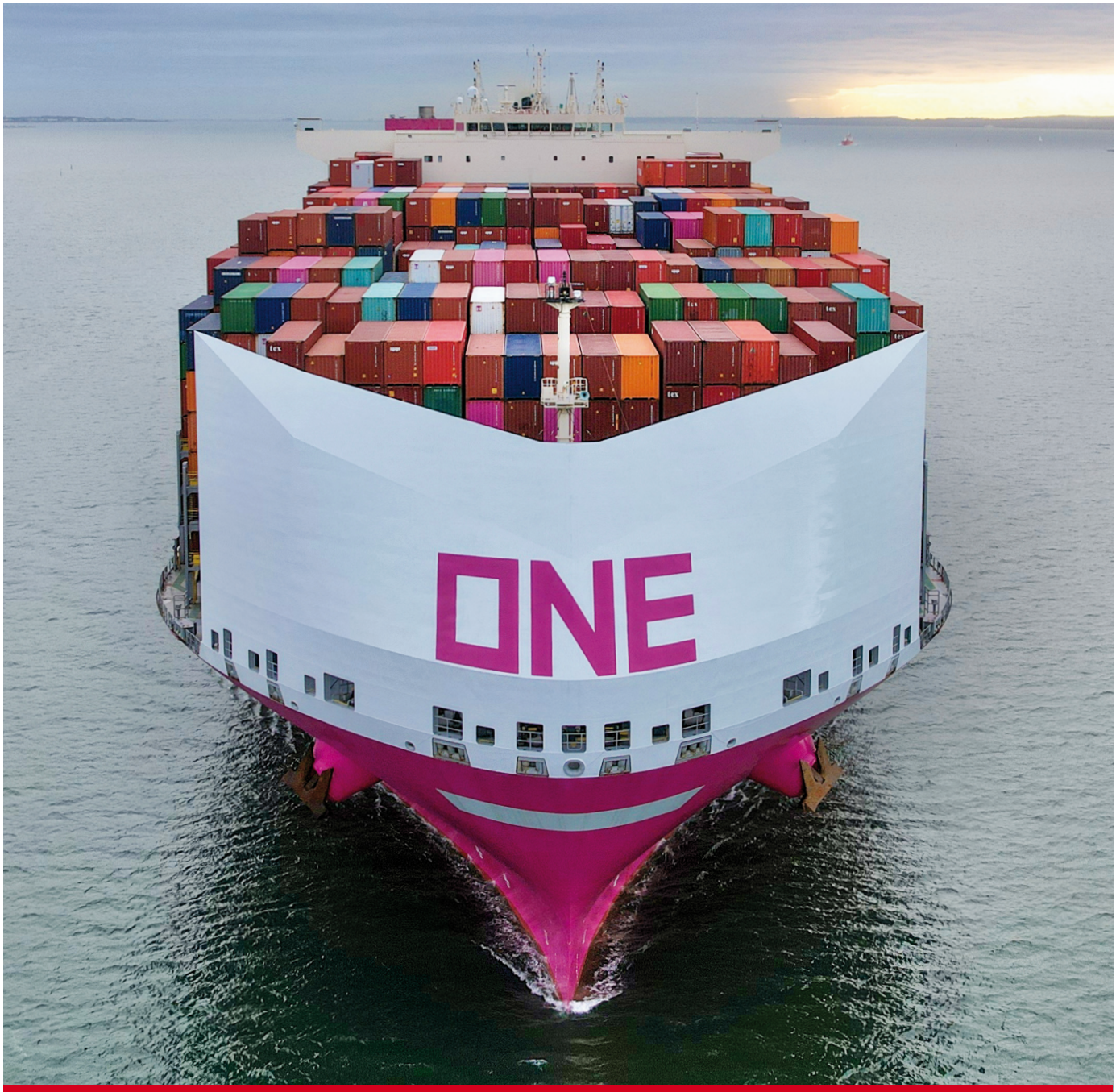
The PILOT

ISSUE 333
WINTER 2022

UNITED KINGDOM MARITIME PILOTS' ASSOCIATION



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IN THIS ISSUE

Conference / Mass Hysteria / Trillion Dollar Disruption
Foiling Pilot Boats / Carbon Footprints / 3D ENC

UKMPA

MANTA

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- **CLIMBING/BOARDING SHIP EN12492** – this is the climbing standard which gives the Manta it's climbing approval. In EN16473, there is also a field of vision test and a 10metre ladder climb test to make sure the helmet can be used while climbing a ladder and there is no restriction to view.
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scan here for more information

The PILOT

CONTENTS

More than just pilots – A warm welcome to the latest edition of The Pilot.

The Norwegian explorer and writer Thor Heyerdahl, who led the 1947 Kon-Tiki expedition, wrote "Progress is man's ability to complicate simplicity." In this edition we continue the MASS awareness work we started at conference, moving through the various disruptive ideas that are being developed around our industry. We look at the gradual and sudden changes in technology, along with the risk that comes with connectivity and cybercrime.

Throughout our careers we have always progressed with the question of "What next?" This is no different to the tools we as Pilots use. We continue the theme of "the future" by examining the tools of foiling pilot boats and what next on charts by UKHO. However, when all said and done, the shipping industry is infinitely more focused on the far greater challenge of "Decarbonisation" where in this edition we discuss what effect Pilots can have.

I aim to finish this edition with articles on keeping you safe, focusing on safety seminars and fatigue where we learn from the airline industry with an article from PilotsWhoAskWhy.com. Once again, we update the popular ports' reports, many thanks to those who contributed. We need to remain acutely aware as we engage with our world of the future, that collaboration with our stakeholders will ensure that the inevitable progression towards MASS is made in the right direction with pilots being considered a key asset and not an obstacle to overcome with an algorithm or two. In piloting there is nothing simpler than a rudder and propeller, however no one ever stopped progress. I hope this edition brings an awareness to the world around us and updates your knowledge.

Yours Aye - Chris
editor@ukmpa.org

MASS HYSTERIA

DISRUPTION EN MASS?

FUTURE CHARTS AND DATA

GUEST EDITOR

We are looking for guest editors who would like to learn how to construct a magazine project. Graphic design is looked after for you and guidance is on offer from myself as Editor. It may be a one issue commitment or more if you wish. Please do contact me to discuss any questions you may have. The team looks forward to hearing from you.

Contact : Christopher.hoyle@ukmpa.org

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UKMPA website

The UKMPA website is a great resource for ALL circulars issued by your Section Committee. Once logged in, members have access to documents relating to:

- ***Circulars (current & historic).***
- ***Incident reporting - advice, procedure and report form.***
- ***UKMPA group insurances information, including the product information insurance sheets and direct links to the bespoke UKMPA section on Circle Insurance Services website (for renewals).***
- ***PNPF information documents.***
- ***On the public section there are Pilot and Harbour Master vacancies.***
- ***Upcoming AGM & Conference information for your future plans to attend these events.***

Any issues logging in or forgotten usernames, click the contact link and I will email back with help.

WebCaptain

CHAIRMAN'S REPORT

© Alan Stroud

// Hywel Pugh and Alan Stroud, attended Maritime UK week's reception in the amazing dry dock of the Cutty Sark.

Welcome to this Edition of The Pilot

As many of you will already have heard we tragically lost one of our community, Francesco Galia, a highly experienced UK Maritime Pilot working for ABP on the Humber. Although not a member of the UKMPA we nonetheless extend our deepest condolences to loved ones, friends and colleagues and offer our support to all those affected by this terrible news. The association will continue its proactive engagement of stakeholders to ensure the safety and wellbeing of pilots is not overlooked by Industry.

We reflect on 2022, which was a very busy year, the IMPA Congress in Cancun and success of Paul Schoneveld being elected Vice President for a 2-year term. Paul will Chair the Professional Standards & Qualifications Committee and will also Chair the European Section of IMPA. John Pearn, Past Chairman of UKMPA, was retained as a special adviser to IMPA as he is heavily involved in some of the Pilot Ladder work streams that IMPA are progressing. Thank you John for continuing to assist. IMPA's annual Pilot Ladder Survey in October had a better return this year and the UK came second for the number of returns, thank you all but we can do better, so the challenge next year is to become Number 1.
At the recent session of the IMO Maritime Safety Committee (MSC 106) the proposal from China for amendments to Pilot Boarding Arrangements was taken forward to NCSR10 Sub-Committee of IMO in May 2023.

The Edinburgh conference was well attended and it was great to see some new faces. Thank you to the organising committee, Peter Lightfoot, Chris Hoyle, Bob Keir and Jason Wiltshire. I would like to also extend my thanks to the speakers who gave up their time to ensure we had an excellent standard of presentation throughout the event.

On day two, the Dutch Pilot Arie Palmers gave an excellent presentation on Pilot ladder safety. Arie is one of the founders of the "Dangerous Ladders" Facebook group and his vast knowledge of the subject was clearly evident.

Liverpool Pilot Ian Baird took us through his personal experience post incident, when a Pilot ladder failed whilst he was climbing it. Enormous thanks to Ian for this, it is never easy talking about such a traumatic experience, but by doing so Ian has passed on some invaluable knowledge.

Region Elections have been completed and we have some new members and deputies, Alan Stroud, Medway Pilot, Region 1. Simon Lockwood, Southampton Pilot, Region 1 Deputy. Chris Grundy, London Pilot, Region 2. Richard Eggleton, Plymouth Pilot, Region 6 Deputy.

James Musgrove, Tees Bay Pilot, joined looking after the website. Thank you to Ian McMahon for his service on the committee and for all the work he did on the website.

Lord Berkeley, our Honorary President, is currently working hard on the Seafarer Minimum Wage Bill which is working its way through Parliament. Lord Berkeley also hosted the Committee, Deputies and the Technical and Training Committee in November at the House of Lords.

Stay safe / Hywel Pugh

CONTACTS

Elected UKMPA Executive Committee

Chairman	Hywel Pugh	chairman@ukmpa.org
Vice Chairman	Christopher Hoyle	vice.chairman@ukmpa.org
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Region 2 Executive	Chris Grundy	region2@ukmpa.org
Region 3 Executive &	Peter Lightfoot	region3@ukmpa.org
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Co-Opted Executive

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Major incident	0800 6446 999	insurance@ukmpa.org
Incident Reports		insurance@ukmpa.org

PILOTS' TALES

There are many amazing people within the Pilotage Sphere, I am an advocate of "we are more than just pilots". I would welcome your articles and features to publish in "The Pilot". Contact photos@ukmpa.org

New UKMPA Members

Matthew Baxter	Manchester
Alan Airey	Tees
Stephanie Smith	Inverness
Simon Allen	Southampton
Simon Cocks	Southampton
Chris Laney	Southampton
Barbara Charlton	Southampton
Tom Haigh	Medway
Peter Lodge	Medway
Gordon Buchanan	Clyde
Alan McHugh	Clyde
David Lambert	Tyne
Richard Littlefield	Aberdeen
Jack Moverley	Milford Haven
Peter Galbrait	Millford Haven
Sebastian Hubchen	London
Gareth Minter	London
Jack Daly	London
Philip Bent	Humber
Rory Johnson	Associate

Retired Members

Jerry Purvis	Forth
Peter Wylie	Tees

CUTTY SARK

'Maritime UK' is the representative body for the UK maritime sector. On behalf of the UKMPA Exec members Hywel Pugh and Alan Stroud were pleased to attend a reception on 11th November held in the dry berth area of the Cutty Sark celebrating Maritime UK week. Chair of the National council, Sarah Kenny, gave an in depth speech discussing their aims for future development and collaboration on key areas of shared interest.

THE DEVIL AND THE DEEP BLUE SEA

Insurance can be a complex and confusing subject for many, the consequences of not reading, and understanding, the terms and conditions are hard felt when your claim is rejected. This is where your insurance broker comes in. It is our role to constantly review the policies we arrange for Pilots, however, we can only do this if we have the right information at the first time of asking.

Each year we ask all pilots to complete the online form and each year we receive numerous calls asking us to renew on the same basis as last year, or telling us "nothing's changed". However, there are a number of things that may have changed in the last twelve months.

Duty of Disclosure - Never has four short questions caused so much consternation. As I explained, we've heard every excuse in the book: "nothing has changed since last year", "I don't want to fill out the form" and "I've been told I don't need to fill out the form". Ultimately, each policy is a contract between the member and the respective insurer and each insurer will have their minimum requirements. We have tried our best to keep the questions to a minimum, however, failure to answer them fully may reduce the speed at which a claim is dealt with or ultimately end in your claim being repudiated.

Incidents and Near Misses - We ask all pilots to complete the incident report form on the App or online. These offer us a valuable insight into these occurrences, however, they can affect the efficacy of your insurance to react at the most important time. Whilst there are statutes on the disclosure of certain types of claim, your insurance renews annually and most insurances require all circumstances which may give rise to a claim to be reported prior to the end of the policy period. Late reporting of claims has resulted in many claims being repudiated (thankfully none to date affecting Pilots) and we don't want to see members prejudiced by something as simple as filling out a form.

Premiums' - Each year we seek alternatives and push insurers to keep rates at acceptable levels. Nonetheless, we receive incorrect payments direct to our bank when rates may have changed. This incurs a lot of work on our behalf as we contact these members to refund their monies or request for the shortfall. Please remember, we do not want to ask you unnecessary questions, nor put you out for our own pleasure. There is a purpose to everything we ask, it sometimes may be difficult to understand our logic, but we are doing it to ensure the devil in the detail is right. We may not be perfect but always try our best to keep these quirks to a minimum, whilst ensuring the integrity of your insurance package, so please work with us in protecting your interests.

Ian Storm / Circle Insurance

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CADDEN

A PIECE OF TEESIDE IN TENERIFE

At the end of November, the European Maritime Pilots Association, EMPA, were hosted by the Spanish pilots on the Island of Tenerife. Our Spanish hosts were from Tenerife, La Palma and Las Palmas and all were passionate about the food and culture of their Islands. It was really nice to spend time with them and they were great company and looked after us very well.

On the first day of our meeting, they took us down to the Port where we met the Harbour Master and Chief Executive onboard the Historic ship the "La Palma", this was to be our base for the next two days. For me this was such a highlight of the trip as the ship was built in my home port of Middlesbrough in 1912 and entered service 4 days before the Titanic sank!

Working as a mail ship she served the Islands until 1976 when she broke down and was laid up in Gran Canaria. She was rescued from demolition in the 1980's. Much work has already been done and finances are in place to hopefully return her as a Sea-going historic ship, but it will be quite a task as the upper superstructure and Bridge need a lot of work and currently, she has no engines?

As well as our usual business meeting we were also given an excellent presentation by a group from AMURAS, a local company in Spain, who have been working with the EMPA Technical and Training team in developing a Pan-European Ship reporting platform designed to communicate with Pilot Apps from member countries. They also hope to develop a separate App for countries who do not currently have one. From what was presented things look very promising.

We also discussed at length the upcoming EMPA conference that will take place in Rome from the 25th to the 28th of April. The draft programme looks very good and we are sure our Italian colleagues will put on a fantastic event. If I could urge you to book your accommodation early, as this week is a very popular holiday time in Italy. **www.empagmrome2023.com/news**

Finally, our Ukrainian colleagues are never far from our thoughts and we were shocked to learn that in August one of their pilot boats struck a sea mine and sank. Thankfully the three pilots and two crew were all OK and were rescued. We can only hope that in 2023 peace will return to Europe!

Peter Lightfoot / EMPA vice President

Pictured from L to R : *José Antonio Pérez Lorente (Pilot La Palma), Peter Lightfoot (UKMPA), Patrick Galvin (Ireland), Henry Caubriere (France), Aileen Van Raemdonck (Secretary General EMPA), Joost Muller (Holland), Miguel Castro(Portugal), Erik Dalege (Germany EMPA President), Juan Pedro Morales (Pilot,Tenerife), Oliver Allaert (Belgium), Kaj Hahtonen (Finland)*

PILOTING THE FUTURE EDINBURGH

Piloting the Future, was the title of the 134th UKMPA conference, held in Edinburgh, and on that subject it certainly delivered! Day one focused on how pilots will fit into the future of autonomous or semi-autonomous vessels.

Day two gave the delegates an insight into the FUTURE FOCUS ON SAFETY. How will our careers evolve with time was the central theme with the main question of course being "would I still have a career in Pilotage in 30 years time?!"

Our District, the Medway, was very well represented this year with four Delegates, two of whom, were sponsored by Peel Ports. Our company values this professional conference as an element of continuous professional development which demonstrates the quality of the event.

One of our delegates, Alan Stroud, said "This was the first UKMPA conference I had attended. I had a tiny insight into the work of the UKMPA, only recently being elected onto the section committee myself, though I hadn't participated in the year of planning, research, leg work, late nights, early mornings, emails and phone calls that go on behind the scenes organising an event of this magnitude, so I surmised the best thing I could do was to absorb everything, it was impressive"

Over the enjoyable two days we listened and chatted to over fifteen wide ranging and knowledgeable speakers. On day one alone we heard from Jenny Gilruth – Scottish Minister for Transport, a panel of Autonomous navigation experts headed up by Nick Chubb Managing Director of Thetius, Peter Aylott from the UK chamber of Shipping and Eva Szewczyk a digital security expert from the Maritime Capability Campaign Office.

Day two began with a very honest account of Liverpool pilot and accident survivor, Ian Baird, followed by a talk from the 'The maestro of Pilot Ladders', Arie Palmers. We had opportunities to meet and talk with exhibitors showing the latest

PPU software and hardware, lifejackets and meteorological equipment to name only a small sample, before final talks from Matthew Williams, Secretary General of IMPA and finally Scott Baker, Chairman of the British Tug Owners Association. Happily both days were not only school days, the first evening we had an opportunity to meet colleagues and socialise in the fantastic 'Dynamic Earth' centre (Scotland's fine effort at London's Millennium Dome) with a hot fork buffet and refreshments included.

On the second day (after a tasty curry lunch) we met for a three course meal and further refreshments in Tigerlily, a trendy cocktail bar in Edinburgh city centre and all the night life that Edinburgh had to offer. The Medway team selected Piña Coladas as our drink of choice to remind all other delegates that the Isle of Sheppey is a tropical paradise and that Medway pilots are down to earth, consummate professionals!!

This was a superb, streamlined, inspiring event with great networking opportunities. It gave us time to meet with fascinating speakers at the cutting edge of our industry. We came away from the conference feeling more knowledgeable than we did before, and more prepared and confident to embrace the new technologies the Autonomous industry is delivering at blisteringly fast speeds along with the changes they will bring, knowing that we will remain an integral part of it. The conference was exceptional value for money, it is easy to recommend and many of our Medway colleagues are looking forward to the next one!

As to the answer of the original question at the start of this article - "would I still have a career in pilotage in 30 years time?" - the answer being Certainly, but not as we know it!!"

Warm regards and thanks from James Foster, Alan Stroud, David Carlin

IMPA CONFERENCE

CANCUN MEXICO

Paul Schoneveld

Finally, after two years of delay, due to the Covid pandemic, the IMPA Conference took place at the Hotel Paradisus, Cancun, Mexico. Over 200 pilots attended, with their families. The location and the programme being a wonderful tonic after the previous two years. A massive thank you to the National Syndicate of Port Pilots Mexico. Captain Mario Camacho and his team for organising the conference. Not an easy task and we are very grateful for the efforts taken.

John Pearn, Milford Haven pilot, stood down from the section committee in 2021. The UKMPA Section Committee then submitted my name to stand as a candidate for the position of a Vice President. I was up against a strong field of candidates but with a great team effort from the UKMPA delegation in Cancun, canvassing votes, my nomination was successful. It was close, three recounts and a win by three votes only. The next ballot taking place in Rotterdam, April 2024, at the next IMPA conference.
www.impa2024.com

UKMPA's own Executive Director, Joanna Poulton, delivered the only non-pilotage paper to conference on "The Management & Governance of Pilotage Organisations" which aroused significant interest.

The conference was honoured to welcome Mr Kitack Lim, Secretary General of IMO. Mr Paul G Kirchner was awarded an Honorary membership of IMPA for his dedicated service and legal counsel for over forty years. We wish him a long, happy and healthy retirement. We also said farewell to Mr Nick Cutmore, Secretary General of IMPA. Wishes of a wonderful retirement again expressed by conference.

On the 1st December 2022 Matthew Williams, will become the next Secretary General of IMPA.

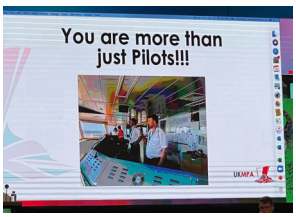
For reference, the IMPA Secretariat has uploaded all the Cancun conference papers and photographs onto the IMPA website. I would urge everyone to browse the presentations, which cover a wide spectrum of topics – by following the link.
www.impahq.org/ international maritime-events/25th-impa-congress-mexico-2022

UPDATE

- Following the election of the new board in Cancun, the Committee and its Advisors met in London for the first IMPA Board Meeting on Monday 31st October 2022 since Cancun. The successful meeting will be reported on in due course. It allowed the delegates to connect and plan a programme of objectives before Rotterdam 2024. **www.impahq.org/ executive- and-advisory-committees**
- The day before the opening of Marine Safety Committee (MSC) 106. IMPA delivered a seminar on Pilotage to the National Delegates at IMO. The presentations and video of the Pilotage Seminar are now available on the IMPA website: **www.impahq.org/international-maritime-events/impa-seminar-maritime-pilots-and-pilotage**
- My first IMPA Board Meeting week concluded when IMPA hosted a Cocktail reception onboard HQS Wellington. This included the National Delegates attending IMO's MSC 106.

Paul Schoneveld


Matthew Williams




L to R : Mario Camacho, Kitack Lim, Simone Pelletier.

FINALLY... THE NEXT IMPA BOARD MEETING WILL BE IN LONDON IN MAY 2023, TO COINCIDE WITH IMO'S SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR).

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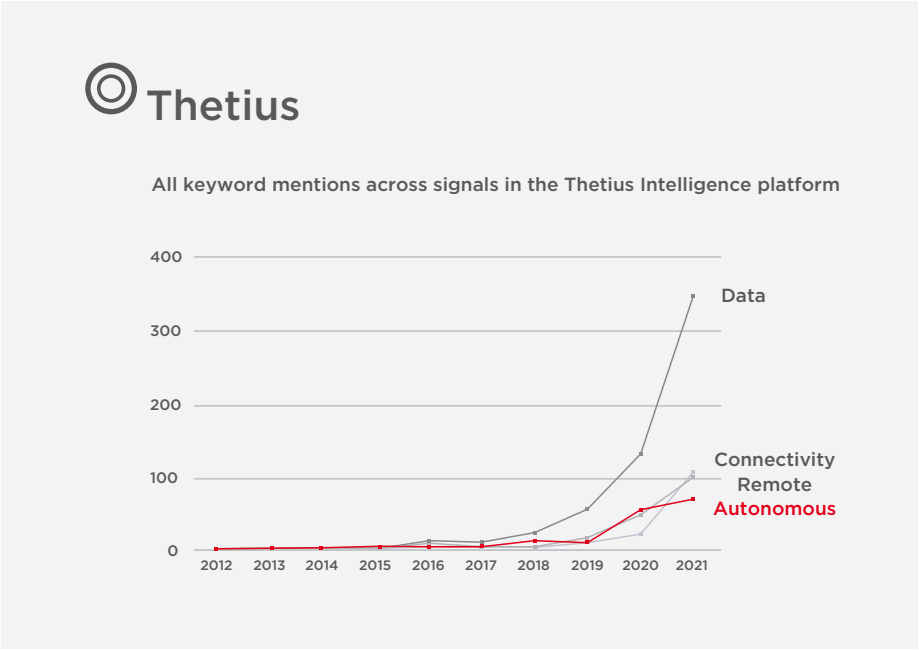
MASS HYSTERIA

By Nick Chubb

WHAT DOES THE AUTOMATION PARADOX MEAN FOR THE NEXT GENERATION OF PILOTS?

The adoption of new technologies follows a predictable curve. Gradually, then suddenly. Almost without exception, new technologies are adopted by a handful of people very slowly, and then very suddenly by the majority.

In 2001, when Apple released the first generation of the iPod, the initial sales were disappointing. In 2002 Apple sold just 376,000 devices to hardcore music fans. The next year they sold 937,000. In 2004, Apple sold 4.4 million. Four years later, in 2008, 55 million iPods were bought by consumers around the world. The rapid rise of the iPod was exponential, taking the music industry by surprise. Nearly all businesses, from record labels to CD player manufacturers were caught off guard by the transformation, and many did not survive.

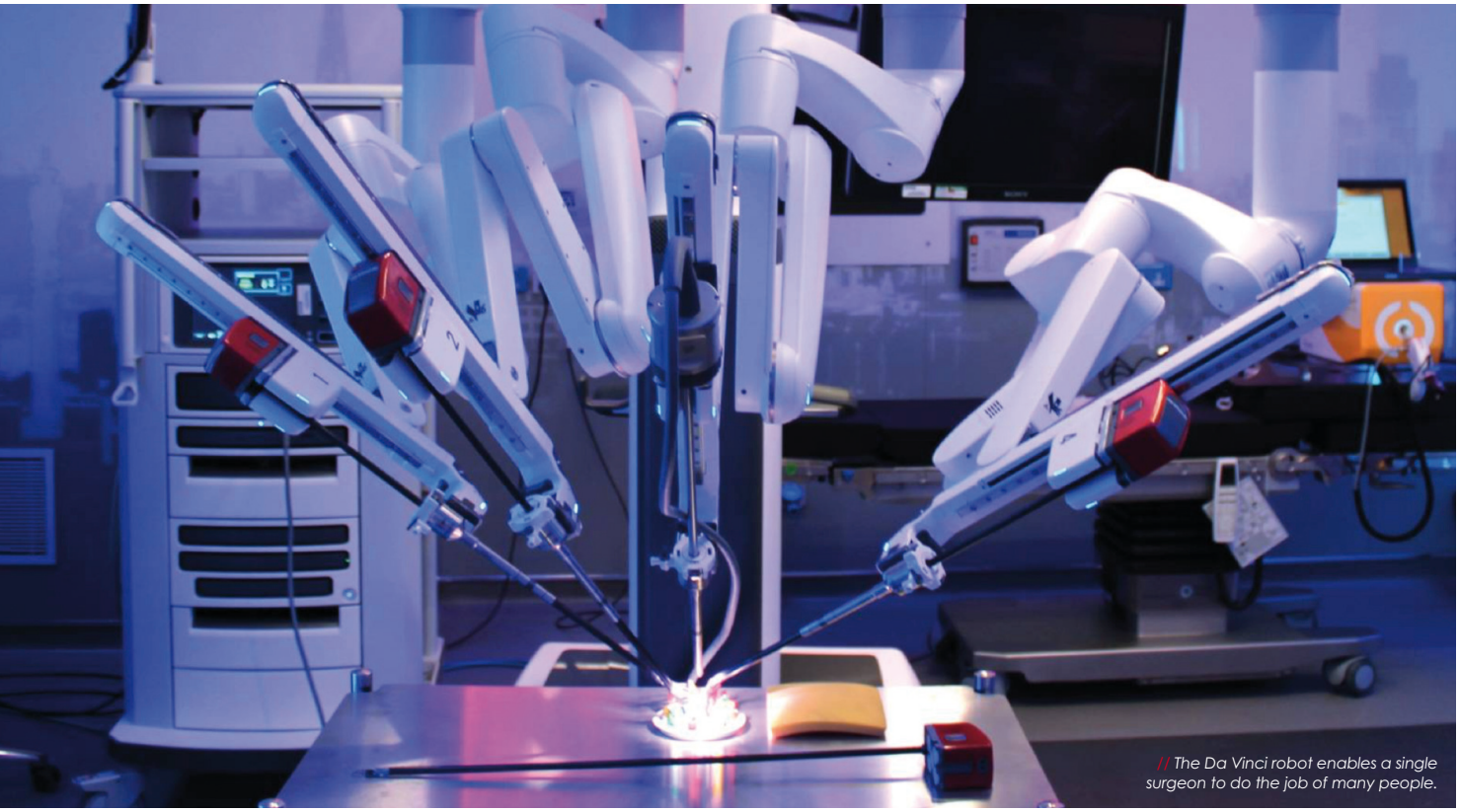


We see "gradually then suddenly" exponential curves in every technology sector. The maritime industry is no exception. At Thetius, we track the adoption of emerging technology across the industry through our research and intelligence platform. We see similarly exponential growth curves for a range of different technologies, including big data, connectivity, remote vessel operations and autonomous vessel operations. What impact could the exponential growth of autonomous technologies have on the maritime industry and how should the pilotage sector adapt?

To understand the impact of new technologies in the maritime sector, it helps to look at what has happened in other comparable sectors. Surgeons are not dissimilar to pilots. They are specialists drawn from a wider population of professionals in their field. They carry out highly specialised work that takes years of practice to master. The work they do is critical; getting it wrong can cost lives.

A "gradually then suddenly" technology that has disrupted surgery is the Da Vinci robot. Da Vinci is a robotic system that makes it possible for a single surgeon to do the job of many people. It was initially developed as a battlefield surgeon but has since found rapid traction in hospitals around the world. Da Vinci robots conducted around 200,000 surgeries in 2012, and more than 10 million in 2021. It has four robotic arms that are controlled by a single surgeon who usually sits in the room, but can be sitting at a remote station on another continent.

Procedures conducted by the robot are less invasive than those done by hand and are in theory safer. But the popularity of the Davinci system has led to some issues. In a traditional operating



// The Da Vinci robot enables a single surgeon to do the job of many people.

theater, trainee surgeons get thousands of hours worth of hands-on experience. They do everything from supporting the patient before the operation commences, doing the initial incisions and monitoring the patient during the surgery, and closing the patient up. This is all vital experience that compounds over many years of practice.

Conversely, the Da Vinci robot needs to be set up by an already experienced surgeon. The machine itself can only be operated by experienced surgeons. Junior doctors get much less hands-on experience because there simply isn't much for them to do. Sharing the controls for training purposes is both time-consuming and creates unnecessary risks for patients. The robot surgery turns junior doctors, who would otherwise have picked up hours of experience, into spectators.

This is known as the automation paradox. The more advanced and reliable automation technology becomes, the more crucial the contributions of its human operator. Systems like the Da Vinci robot will inevitably come across unexpected situations that are outside its design parameters. When this happens, highly experienced human operators need to be able to quickly detect the problem and successfully intervene. But as the technology becomes more ubiquitous, operators get fewer opportunities to practice the skills they might need in a critical moment.

This leads us nicely back to MASS. Though remote and autonomous operations are still in their nascent stages of development, they are happening. Decision support systems that make COLREGS recommendations to the officer of the watch are growing in popularity. $2.3 billion is being spent on maritime autonomous surface ships this year, and the market is forecast to grow 19% per year over the next five years. Remote pilotage services for conventional vessels are being pioneered in the Nordics. At the most extreme end of the scale, large vessels capable of being operated remotely, or completely unmanned, have become a reality in the last year. The automation paradox is very much alive in the maritime industry.

For the maritime pilotage industry, this creates a range of challenges and opportunities. How should pilotage be adapted to support remotely operated vessels? How can developing remote pilotage services make the job safer? How will interactions between conventional and autonomous vessels affect the pilot's role? How does the pilotage industry ensure that the next generation has the skills required if the number of people going to sea continues to drop? How do pilots maintain their own skills if they are rarely used?

The aviation sector has already dealt with a lot of these questions. Through the 1990s and early 2000s, autopilot systems became advanced enough to make an airline pilot's job one of monitoring and intervention instead of actually flying the plane. It required a complete overhaul of aviation training, with simulation becoming the primary way for skills to be learned, maintained, and passed on. Similarly, the makers of the Da Vinci robot have recently launched a simulator aimed at training the next generation of surgeons in using the technology.

There is no doubt that automation will mean that a maritime pilot's skills are used less frequently in future. But there is equally no doubt that when they are needed, those skills will be even more critical than they are today. Ensuring that the next generation can acquire them is absolutely critical to keeping pilots, ships and ports safe for decades to come.

DISRUPTION EN MASS?

MARITIME AUTONOMY AND PILOTAGE

Despite the extensive, recent media coverage, the concept of autonomous shipping is approximately 60 years old. The International Maritime Organization's (IMO's) Maritime Safety Committee started discussing automated ships back in the 1960s. Whilst the first mentions of remotely operated vessels can be traced back to Rolf Schonknecht's 1983 book 'Ships and Shipping of Tomorrow', the alleged arrival of 'ghost-ships' has featured more widely in the news since the 2010s. Despite the relative maturity of the concept, the narrative around autonomous shipping is frequently misleading, indicating that such vessels will be exclusively All-driven and operate without any human involvement. This is not true. The commonly used acronym MASS (for Marine Autonomous Surface Ships) is an umbrella term, covering vessels of varying levels of autonomy with a degree of human input (in operation, monitoring and/or system assurance) required in most cases. The levels of MASS autonomy can range from a crewed ship with advanced decision support systems on-board (the IMO's MASS Degree One) to a fully autonomous one (MASS Degree Four), with MASS degrees Two and Three covering remotely operated, semi-autonomous vessels.

There are now multiple MASS projects and tests being progressed worldwide. A very prominent example is Yara Birkeland, the world's first autonomous container ship. She began her two-year trial period earlier this year, sailing in the Norwegian coastal waters between a fertiliser production plant in Porsgrunn and the regional export port in Brevik. Whilst she is still operating with a crew, it is anticipated that she will gradually transition into autonomous navigation and operations. Yara is a good case in point for potential MASS applications at higher levels of autonomy, many of which involve inland and short-sea shipping. There is also already a sizable amount of highly autonomous, small, specialised vessels for discrete tasks such as surveys, security operations, maintenance, surveillance or monitoring, along with various uses of autonomous solutions in the defence sector.

Despite those multiple applications, the notion of large, fully autonomous, deep-sea vessels being a commercial reality is still relatively avant-garde. Nonetheless, since its conception, MASS has proved polarising, with the maritime industry expressing concerns around its economic viability, safety, job security and regulatory challenges.

As MASS captures the imagination of the public and makes waves with the industry, the IMO appears committed to making steady headways into the legislative landscape. Following the 2019 interim guidelines for MASS trials and the regulatory scoping exercise which concluded last year, the new aim is to adopt a non-mandatory goal-based MASS Code by 2025, with a mandatory version to be introduced from 2028. Domestic regulations are following suit, with many governments worldwide urgently reviewing their legislation to accommodate vessels with varying levels of autonomy.

Until recently, maritime pilotage had been relatively immune to the MASS

// ***Sea-Kit Maxlimer :*** *An example of an adaptable uncrewed surface vessel, suitable for multiple use cases, including maritime logistics, environmental management, marine inspection and ocean survey.*

disruption. Even though remote pilotage is not a new concept, as it has been used in specific circumstances in the Netherlands since the 1980s, never before had it been a subject of a wider discussion or controversy. This changed in 2019, when Finland amended its legislation to enable remote pilotage services, subject to authorisation, as part of their 'future fairways' concept. A number of media outlets hailed this as a sign of imminent change, galvanising the debate. The pilot community in particular responded to this vision of the future with limited enthusiasm, expressing some strong reservations about technological limitations, communication challenges and safety concerns, to name a few. Somewhat perversely, the concept of dispensing of the pilots' onboard presence has been boosted by the global pandemic. As result of the wide restrictions introduced in the wake of increasing rates of COVID-19 infections, many authorities had to resort to remote pilotage to balance the facilitation of essential services with the prevention of the spread of the virus. Pilots worldwide have, as usual, adapted to the challenging circumstances and the world watched as Costa Diadema has seamlessly transited the Suez Canal mid-lockdown, under remote guidance by a team of pilots on escort tugs. And even though remote pilotage, with the technology currently available, is still considered a high-risk operation which is generally discouraged by the insurers, the proof of concept was a fait accompli. Based on the trends of reducing onboard presence, it seems logical that the remote pilotage will likely constitute an essential interim solution throughout the transition into, arguably a rather distant, fully autonomous future.

Photo credit : Rich Edwards, ENP Media

As the maritime community grapples with various MASS challenges, one of the biggest concerns regularly raised in relation to autonomous shipping is cybersecurity. Cybercrime is already a major issue affecting the industry. Approximately 25%-35% of organisations in the maritime domain admit to falling victim to cyber-attacks in the preceding 12 months, with the estimated annual global cost of cybercrime expected to hit $10.5 trillion by 2025. More concerningly, cyber-attacks are moving outside of the IT realm and start to affect the operational technology (OT). With the estimated 900% increase in reported attacks on the maritime industry's OT in the last three years, it is unsurprising that cyber risks remain the leading concern for autonomous shipping. Navigational systems are considered the most vulnerable, with Global Navigation Satellite System, Electronic Chart Display and Information System and the communication devices on shore control centres viewed as the most likely targets.

It is not yet clear whether these concerns are justified, as a definitive MASS risk assessment has not been established to date. As MASS will be heavily dependent on advanced technology, with greater integration and interconnectivity, its presence in cyberspace will increase. In combination with the higher cyber-physical interaction in comparison with traditional shipping operations, this may expand its potential attack surface. However, somewhat counterintuitively, it could be argued that the older vessels are more cyber-vulnerable due to insufficient cybersecurity measures, outdated operating software and systems.


Photo credit : Knut Brevik Andersen, Wilhelmsen Ship Service

// ***Yara Birkeland :*** *120 TEU, 80m long autonomous container ship undergoing trials to become certified.*

The human presence also introduces a number of cyber risks linked to human error, malicious insider or social engineering, which would be eradicated by the fully autonomous operations. As the jury is still out, it cannot be ruled out that MASS may well prove to be a solution to the current cyber challenges. Meanwhile, the public, industry and regulators are yet to be convinced and every publicised case of cyber-intrusion by organised crime and state actors undermines the confidence in autonomous technologies.

Even though the truly autonomous vessels are rather futuristic, any departure from the conventional operations through reduction or removal of the onboard human presence has the potential to cause wider economic, technical, legislative, environmental and social impacts. Despite these developments, it seems clear that the advent of MASS is not an immediate threat to the existence of pilotage services, whether carried out on- or off-board. However, a gradual shift in the way these services are carried out seems unavoidable, as disruption en MASS ensues.

Words by : Eva Szewczyk
PhD Researcher

WHY HUMANS ARE KEY TO MARITIME AUTONOMY

It may seem a misnomer or even backwards thinking to consider humans as an essential component to maritime autonomy, however the people and technology partnership is key to the successful marriage of maritime and autonomy.

Firstly, maritime autonomy is not, strictly speaking, the correct phrase, as purists would say that to be autonomous would mean that the vehicle, whether on land, sea, or air, would need to be free of human interaction.

As autonomy means the right to self-govern, in maritime terms we are still some degrees away from reaching this stage. Whilst we currently have surface and sub-surface vessels that can self-energise, propel, navigate, and undertake duties, humans remain an essential component of maritime autonomy.

So-called autonomous surface craft are more often controlled via by an integrated operators' Remote Operations Centre (iROC), often over-the-horizon, run by technicians and teams whose competencies are in line with current STCW crewed vessel standards.

Control can translate as remote engineering prognosis, fault diagnosis or direct intervention depending on the use case of each system and degree of automation. Factors also depend on the technological capability and development of each system, and the concept of operation and rational for altering a vessels current state.

To date, no new MASS operator competency standards has been agreed. Key roles are yet to be defined and therefore no additional career paths and endorsements have been added to create an STCW approved uncrewed vessel competency framework, as this simply does not exist currently.

This new and costly technology is being operated in a wholly unregulated sphere, with capabilities of the technology mismatched to the skills and expectations of the users.

Currently there is no STCW approved uncrewed vessel competency framework, memeaning that uncrewed vessels are, in fact, generally operating in pre-STCW regulated scenarios, which came into play over 44 years ago. It is a new day, and our focal point must now shift to build new technological and analytical capabilities fast, with a platform that matches learning with job performance and career progression.

Whilst autonomous vessel operator training is generally provided by the manufacturer, when it comes to STCW-equivalent uncrewed vessel specific competencies, these technically excellent and innovative vehicles' capabilities are, in some cases, perhaps five years beyond the people who operate them.

Non-standardised working practises are proven to heighten risk to life, together with potential asset and intelligence loss via piracy and inadequate communications, plus many other factors including the challenges of standardising the onboarding of teams to adopt the rapidly emerging technology. Outcomes can be harsh, including the possibility of insurers declining claims citing lack of operating due diligence.

The need for a standardised solution to fully integrate people and maritime technology is great, with training and transformation specialist SeaBot Maritime pioneering the safety and competency NextGen agenda across both uncrewed systems and smart shipping globally.

Working with longstanding customer, Fugro, the team at SeaBot Maritime devised the first career pathways for operators of uncrewed vessels, in the form of the MASS Certified Professional Training Scheme.

The MASS Certified Professional Training Scheme is an experiential based training scheme that bridges the skills gaps between conventional operations and the adoption and use of Maritime Autonomous Surface Systems.

Interest is high at both domestic and global regulatory level to adopt the MASS Certified Professional Training Scheme, which is solely delivered by SeaBot Maritime from its Integrated Remote Operations and Intelligent Ship Training and Research Academy headquartered at the National Oceanography Centre in Southampton, UK, or at customers' own sites worldwide through cloud-based simulation.

By Gordon Meadow / SeaBot Maritime

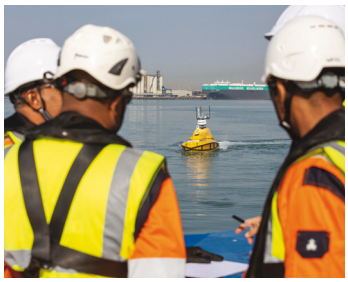
About Gordon Meadow

Gordon Meadow is CEO of SeaBot Maritime. He is committed to the global development of maritime education and training, and the digital transformation of the workforce's transition to the connected mariner. He is Chair of the IMarEST's MASS Special Interest Group, Co-Chair of the International Standards Working Group, MASSPeople and Chair of MASRWG, People Skills and Ethics Committee, and a member of Society of Maritime Industries MASG Committee, and represents IMarEST on the Royal Academy of Engineering Safety and Ethics of Autonomous Systems' working group.

Image courtesy of Fugro

Helping people and technology to co-exist in maritime

SeaBot Maritime enables organisations to adopt technology and understand new ways of working by keeping people at the cutting edge.



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FUTURE CHARTS AND DATA

By Neil Salter

A PERSONAL VIEW BY NEIL SALTER UNITED KINGDOM HYDROGRAPHIC OFFICE

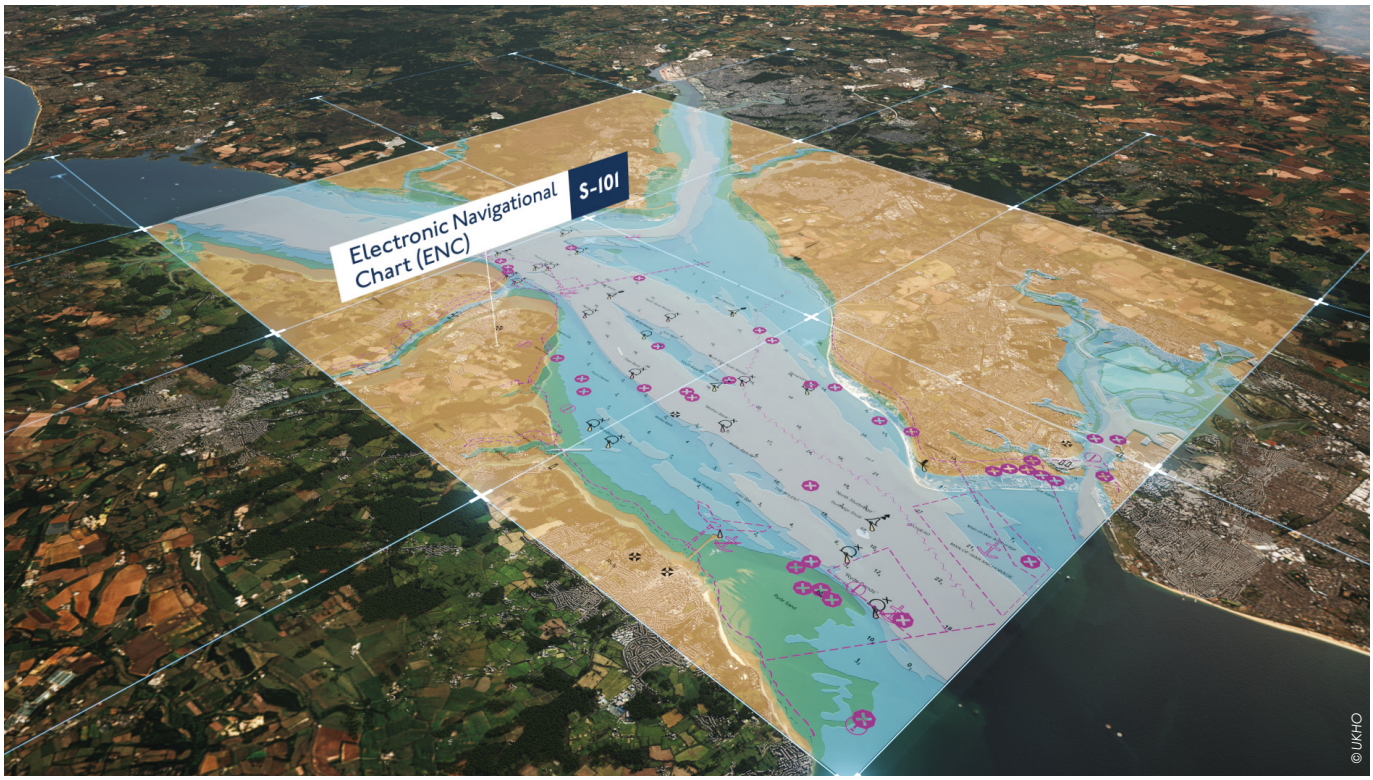
Navigators need to know where they are, when planning how to get to their destination – this fundamental aspect has remained unchanged throughout the history of the UK Hydrographic Office.

The basic process for our core business has remained unchanged; what has changed is the technology used to collect the data, process this information, then package it up in an accessible format that can readily be used to achieve safe navigation and progress towards the intended destination.

From paper to digital

Early hydrographic surveys were conducted using fairly rudimentary equipment, but nonetheless, the results yielded were invaluable for seafarers, providing detailed information about the nature, position and proximity of hazards relative to safe water. Quite often, a visual representation of principal features was included to enable correct identification and provide reassurance for the navigator.

The same information has been provided to consistently high standards of accuracy throughout our 227-year history



// *Electronic digital data mapping*

// *3D data mapping the sea bed*

in our ADMIRALTY charts and it is this high quality of content that has been our non-negotiable standard of excellence.

In the 20th century, the era of paper charts was largely superseded by a growing proliferation of satellite constellations, enabling increasingly accurate commercial satellite navigation. This trend towards electronic navigation led to the development of the first electronic charts.

Early electronic charts were essentially GeoTIFFs (more accurately described as raster charts) before proper Electronic Navigational Charts (ENCs) were devised. Fortunately, the International Hydrographic Organization (IHO) realised that to enable global compatibility, there would have to be internationally agreed standards – which have become the cornerstone upon which all ENCs are based.

While the presentation of the information may have changed, these ENCs contain the same crucial information that has always been contained in navigational products, that enables a navigator to determine where they are, where they are going and where the hazards are.

Today, ENCs are allowing greater navigational precision. Previously, as ENC standards were set, ENC users were restricted to just a few available depth contours. Ships with draughts different to these contours had to err on the side of caution and confine their movements to indicated available depth.

The newer ENC standards will allow for much greater detail to allow user set bespoke contour depths thus increasing available sea room.

Building resilience

As electronic navigational technology becomes ever more advanced, so does our understanding of the scientific principles involved, together with their associated weaknesses and vulnerabilities. Therefore it is important to collaborate across the hydrographic community to continuously build resilience and improve these services to support the mariner at sea.

GNSS signals are relatively weak and can be open to both natural and artificial interference. Natural interference such as solar flares can distort or even completely obliterate GNSS signals. Similarly, GNSS can be distorted, masked or spoofed by locally based terrestrial transmitters. Another aspect of GNSS is the PNT signal, or Position, Navigation and Timing. PNT is an intrinsic part of the GNSS signal. Whilst it is crucial to the navigator, it has other uses globally. For instance, the 'Timing' element is used to coordinate international and national financial transactions.

Ways to address this and introduce resilience are currently being considered across the international navigational community. One line of development involves optical recognition. Using automated technologies, this would enable the topographical information to be contained within the navigational product, including what shore and land-based features lie above the water line.

We have come a long way since the early Royal Navy hydrographers, such as Cooke and Bligh, were given art lessons to enable them to capture visually what they saw in the areas that they were surveying. Today, this same information is now being used to enable autonomous feature recognition.

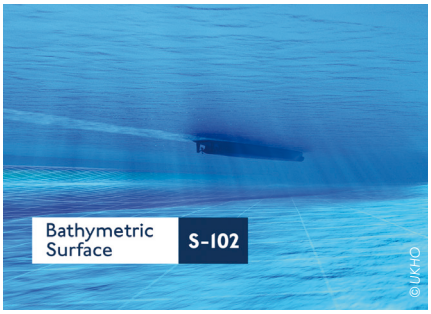
A new era of autonomous navigation

The advent of autonomous navigation has introduced a new set of challenges and opportunities for safe navigation.

Previously, all of the information, or data, had to be presented on a chart in an easily readable format that could readily be understood using common symbology - no matter what time of day, no matter what the weather. Such constraints are not recognised by autonomous ships; the navigational decision-making software for these vessels can process any amount of data, which can be pre-loaded or delivered by continuous connectivity. The only choke on the information flow is the available bandwidth of the connection.

These two opposing use-cases present something of a challenge for the UK Hydrographic Office and other similar institutions; we need to be able to prepare and provide navigational products for both ends of the spectrum and everyone in between. It is important to note though, that it is the same core data that is used in all associated products for a given area.

Technology has driven change in how we navigate – and will continue to drive change in the coming years - but the basic needs of all navigators have remained unchanged throughout the history of the UK Hydrographic Office. That fundamental core aspect is at the heart of our history and will continue at the heart of what the UKHO does as we continue to support safe, compliant and efficient navigation worldwide.



PRIORITISING DECARBONISATION

As the world increases its focus on reducing (GHG) emissions following the renewed warnings of the (IPCC), and the output of COP27, Svitzer is increasing its own efforts to drive down emissions and contribute to the decarbonisation efforts of the maritime sector. Whilst IMO and other National and Regional bodies focus on the larger vessels of the global fleet (i.e. those above 5000 DWT) we have recognised that the smaller coastal fleet, and tugs in particular, are being overlooked when it comes to policy decisions and support in driving down emissions. It seems now, more than ever, companies will have to play a significant role in decarbonisation if the Paris Accord ambitions are to be met.

Towage plays a small yet significant role in the global supply chain. We link the first and last mile of shipping to the remainder of the chain, and yet this service and others linked to ports like Pilotage and Terminal operations are often overlooked when it comes to decarbonisation support from a policy perspective. As far as we see it a lack of regulation is no reason not to act. To provide a sense of scale for the impact that towage has on the decarbonisation agenda, Svitzer's global fleet of around 400 tugs has the same CO2 emission as 100,000 diesel-powered cars each year, or around 280,000 tonnes of CO2. The global fleet (according to IMO reports) emitted around 41 million tonnes of CO2 in 2018. Given the fact that every kg of CO2 we release to the atmosphere today will remain there for the next 300 or so years it makes sense to reduce our emissions wherever we can no matter how small if we want to support the move to keep to the 1.5C target set by the Paris Accord.

CUTTING OUT THE CARBS

We recently unveiled Svitzer's new decarbonisation strategy to become fully carbon neutral by 2040. This is an ambitious goal, and the first phase of the strategy, which is to reduce the CO2 intensity of the entire Svitzer fleet by 50% by 2030 has begun by focusing on how we can reduce our emissions now whilst we plan for what we need to do for the future. This is not a journey we can achieve on our own and we will need partners to help us achieve these goals; customers who are open minded to different approaches to towage to drive down their supplier emissions (Scope 3 in GHG Protocol speak), fuel suppliers for low carbon alternatives, equipment manufacturers developing and providing new technology to drive down emissions and our own staff and Portside collaborators.

It is this last aspect, working with our crews and other individuals who help us to deliver towage services, Pilots and Agents for example where we see opportunities to cut out emissions without needing to change what we have available to us, but rather change what we do with it. We know that we can cut fuel consumption dramatically by cutting our mobilisation and demobilisation speed, our 'Aim for 8' programme, where we keep as much as possible to 8 knots, has saved us in the region of 1000 tonnes of CO2 since we started the project, but most of our fuel is consumed during the actual work. It is this phase which is most interesting. This is the part where our work can be dramatically influenced by people who aren't even on the tug: The Pilot. Changing 'Behaviour' with how we work with tugs and the assisted vessel, collaborating between our crews and the pilots could deliver CO2 savings without changing anything on board the actual vessel. Tapping into the expertise of our crews and the pilot teams and figuring out how we can work together to optimise towage jobs and adapt to new vessel designs that are coming to the marketplace, like electric tugs, Hybrid vessels or our own TRAnsverse tug will be crucial as we go forward. We can no longer expect to carry on doing the 'same old thing' when the equipment we have in front of us is fundamentally different. Plus, we are presented with new ways of learning and collaborating that should speed up the process of training and exploration of new approaches with minimal risk to safety and our assets through the use of simulators. Computing technology and the introduction of VR and augmented reality systems offer us opportunities to train, explore and collaborate like never before.

The seafarers and workers that help to safely berth vessels and discharge the goods that keep our supply chains running smoothly have a lot to offer in the journey to decarbonisation. Let's figure out how we can work together to make the most of the expertise we have and make every kg of CO2 saved count.

Scott Baker / Head of Marine Standards - Europe

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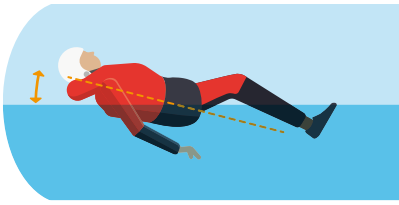

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Artemis TECHNOLOGIES

By John Patterson

John Patterson, Head of Business Development (Defence & Workboats) at Artemis Technologies, shares how the maritime design and applied technologies company's cutting-edge innovations can act as a catalyst for the decarbonisation of the pilot boat sector.

As an island nation, 95% of UK trade by volume is moved by sea - every person in the country will consume goods daily that have been provided to the UK by ship. Almost every ship entering or leaving a port, is required under UK law to engage an Authorised Pilot. It is irrefutable how essential pilots' work is, and equally the vessels used to transfer them to and from ship. With around 960 pilot vessels registered in the UK and EU, and over 3,200 pilot vessels globally, annually they emit 820,000 tonnes of CO2e, indicating how crucial it is for the sector to reduce these harmful emissions.

Our mission to decarbonise the maritime industry has led us to develop high-speed, green vessels with applications across the leisure, public transport, defence and workboat sectors. Producing zero-emissions in operation, the vessels and systems developed by Artemis Technologies are designed to make the lowest possible impact on the environment.

The main challenge with the decarbonisation of high-speed vessels is the lack of viable range. Fresh water is 830 times denser than air, and sea water is 850 times denser, so it requires a lot of energy to propel a boat through water. Over the last three years, we have been developing a disruptive electric propulsion system, the Artemis eFoiler®, in a bid to combat the barriers to maritime decarbonisation. The innovation includes a high-power density electric drivetrain into an autonomously controlled hydrofoil, combining technologies from automotive, yacht racing and aerospace sectors.

We started to optimise technology with a goal to facilitate and enable zero-emissions transportation and we turned to hydrofoil technology knowing it had the ability to reduce drag and increase range for any given power source. One of the fantastic things about hydrofoiling is that it offers some important secondary benefits such as a comfortable ride. When you fly above the waves, you are no longer slamming into each wave, meaning the experience for the passengers on board is so much more enjoyable and this mitigates motion sickness.

When foiling, effectively 'flying' above the water, the wake is greatly reduced. Crucially for pilot vessels, the minimal wake of the Artemis eFoiler® system ensures vessels can avoid local speed restrictions, making them an ideal solution for traditionally busy waterways in ports and cities. Often operations need to slow right down to protect nature as they come close to shore but with a foiling boat, where effectively the displacement has been taken quite deep under the water, the wave never generates. This allows high-speed operations close to shore, without causing the usual wake damage to shorelines or moored vessels.

The environmental benefits of our Artemis eFoiler® system were first demonstrated earlier this year when we launched to market the world's first commercially viable 100% electric, high-speed foiling workboat, 'Pioneer of Belfast'. Through initial sea trials, we have proved the incredible efficiency savings of the Artemis eFoiler® system versus a gasoline powered sistership, using up to 90% less energy. With a pilot vessel consuming 450-litres diesel/day and emitting around 430 tonnes CO2e per year, not only will adopting this green technology have environmental benefits but adopters will undoubtedly see significant OPEX savings.

In the latest round of the UK's Clean Maritime Demonstration Competition (CMDC), we received almost £212,000 in funding for a feasibility study, alongside Belfast Harbour Commissioners, to ascertain if a 100% electric foiling pilot vessel is a technical and economically viable solution to decarbonise pilot vessel operations. Known as the 'eFoiler Pilot', the vessel would use the same transformative Artemis eFoiler® electric propulsion technology.

ON A MISSION TO HELP DELIVER A SUSTAINABLE MARITIME FUTURE

The act of transferring a pilot is one of the most challenging and dangerous operations carried out at sea, with the highly complex interactions between the environment (wind and waves) and the hydrodynamic effects of the large vessel. On our very first day of sea trials, as soon as the flight control system was engaged, we noted significant improvements in pitch and roll. Flight control automatically starts above two knots, so even when the vessel is still in displacement mode, the system is working to dampen the effects of the sea. Real world experience has indicated that there may be safety benefits for pilot transfer as a result of the increased stability of the embarkation platform. However, before we begin on-water testing we will determine the feasibility of the Artemis eFoiler® system, by running it through our simulation design and digital testing process. The challenge is therefore to model the physics for real time use in our human-in-the-loop simulator.

Simulation is used extensively during initial testing and validation of our flight control solutions for different vessels. Our flight control system forms part of the overall Artemis eFoiler® solution and was developed to make it easier for the master to operate our vessels as we take away the more complex flight control challenges, allowing them to focus on typical operations that they are accustomed to when operating a normal outboard displacement mode vessel. It is essential that our flight control system is easy to use, as the best flight control system is one that operates in tandem with the master. We've designed a bespoke Human Machine Interface (HMI), including thruster, wheel and displays that enable us to continuously refine the look and feel of the HMI based on master feedback from both in the simulator and on-water testing.

Climate change is the greatest challenge of our generation and as the need for pilot vessels is expected to follow the anticipated growth of 6.4% of the world merchant fleet over the next 5 years, it has never been more important for pilot vessel operations to decarbonise. Our challenge is now to provide the pilotage industry with a platform that improves pilot transfer safety through the design and development of transformative technologies and zero-emission vessels.

// *Pioneer is a 100% electric foiling pilot vessel*

// ***Artemis Technologies has launched and tested the world's first commercially viable zero-emission high-speed electric foiling workboat, 'Pioneer of Belfast'.***

spinlock

COMMERCIAL

FEATURES

\\ DURO range of lifejackets
\\ Designed to withstand tough environments
\\ 170N & 275N buoyancy available
\\ Extra durable cover materials for a long life
\\ Low profile, comfortable design
\\ Chest & back adjustment for a perfect fit
\\ One Size
\\ Glowspot® reflective bladder technology
\\ Optional Lume-On™ & Pylon™ lights

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ABOUT FLOTATION

You would recognise the original 'Mae West' inflatables used in WWII as a life jackets. 80 years on however leaps have been made in standards, materials, performance, and design. The original 'Mae West' product used natural rubber bladders with glued seams and were covered in canvas, these would suffer from degradation and rot over time. Modern life jackets use polyurethane coated nylon that will not rot in marine conditions. Bladders are no longer glued; material is cut into top and bottom layers using the latest CNC cutting technology which supplies best accuracy and consistency then it is ultrasonically welded. Ultrasonic welding is used as it bonds the fabrics together at a molecular level creating strong airtight seams that will not part.

A modern product built to the ISO-12402 standard (the closest to a global standard currently) must pass rotation, floatation height and fit across body types. Materials used also must be approved and products must be subjected to a rumble test that simulates wear and tear. The ISO standard has two buoyancy sizes 150N and 275N. For guidance 10N is equivalent to approx. 1kg of lift. A person's weight does not affect the correct size of bladder, people tend to be neutrally buoyant due being made up of 80% water, air in lungs and fat that floats in fact the bigger you are the more buoyancy you will have which is good for most pilots. 150N is correct for any leisure activity and for many light industrial activities.

If wearing steel toecap boots or carrying heavy tools and equipment a 275N help to turn and float the casualty to the correct height in the water with the extra sinking weight. For Pilots Spinlock recommend using 275N product.

In terms of performance a life jacket needs to turn a person on to their back in a prompt fashion, hold the casualty's head at a 45deg and keep the corner of the mouth 50cm above the water. Life jackets are tested with and without a crotch strap but using the crotch strap (included in the ISO requirement) will help keep this performance in real world conditions over an extended period. The fit of the life jacket is of huge importance to in-water performance. A well designed and fully fitted and fully adjusted life jacket will help turn and hold a person correctly in the water better than a loosely fitted product.

Fit and tailoring are the most obvious changes to life jacket technology over the past 80 years. Having a well-designed fitted life jacket improves in water performance, comfort and mobility through light weight ergonomics.

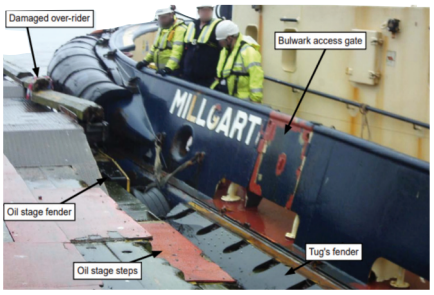
When combined with modern automatic lights, spray hoods and a PLD (personal location device) a life jacket not only extends your time of survival but helps reduce time for location.

When choosing a life jacket, try the product on, wear it and be comfortable with it. Understand how the product works and make sure your colleagues understand the equipment you are using so that if the unexpected happens everybody knows what to expect. Store your product correctly, hang it up vertically not flat especially if wet to prevent accidental inflation. Most importantly wear your product. If not worn it will not work.

Doug works for Spinlock Ltd a leading global manufacturer of life jackets. For further information on Spinlock's range see www.Spinlock.co.uk

Words by – Doug Vincett (Spinlock Ltd)

BRITISH TUGOWNERS ASSOCIATION



The 2022 BTA Annual Safety Seminar was held at the Northern Lighthouse Board in Edinburgh on Thursday 10 November with a wide spread of towage industry representatives. The Seminar sought to share innovative ideas and drive progress regarding safety in the towage industry, focussing on establishing improved equipment and methods of recovering persons in the water.

Alan McPherson, Chief Harbour Master at Forth Ports and UKHMA representative opened proceedings on the perspective of the harbour master when dealing with emergencies including MOB incidents. Alan discussed examples of perilous behaviour occasionally seen in ports. Alan spoke of his frustrations of how unsafe conduct was begrudgingly permitted by senior seafarers and thought of as part of the job where in fact there are policies and safety management systems in place to prevent unsafe practices.

However, Alan noted the "divergence between company instructions and working practices." He endorsed for a strengthening of safety culture among seafarers and operators recommending there should be a narrowing of what is imagined and what is being done.

George West & Phil Dryburgh from Quiksling demonstrated their pioneering idea in recovering persons in water. Following a harrowing experience in which George had witnessed a girting incident where the rescue attempt of the persons in water had been poorly executed, George thought there must be a better solution.

The light but sturdy design of the Quiksling allows for the self-rescue of conscious persons in water. The Lloyds Register approved design allows for the rescue of conscious causalities and the fishing industry in particular has shown interest in the Quiksling. The low deck chair position in which they are rescued also mitigates against the effects of hydrostatic squeeze, a potentially lethal condition after prolonged immersion in water.

The Chairman of the BTA Scott Baker from Svitzer launched the anticipated Recovery of Persons in Water Guide to Good Practice for Small Vessels. Scott extended sincere thanks to the experts in their field, Professor Mike Tipton MBE, FTPS, from the University of Portsmouth and Paul Savage OBE, of Saviour Medical Ltd for their contributions to the guidance as well as to the Workboat Association and RNLI for their oversight.

Key areas of discussion for the guidance include:

- the ineffectiveness of lifejackets without crotch straps
- cold water immersion its effects and common incorrect confusion with hypothermia
- the truth around vertical and horizontal rescue
- demystifying the use of Automatic External Defibrillators (AEDs)
- post recovery trauma, an often-neglected area

Scott emphasised the importance of crew members training and participation in drills of rescuing persons in water. While it was stated that having the correct kit on board was imperative, he highlighted that if the crew did not have the experience / training and therefore muscle memory of having used lifesaving equipment the chances of it being used correctly in serious circumstances were low.

Scott also specified the chances of a safe and effective rescue were raised by crews having a suite of rescue equipment on board, with crew therefore having the correct tool for the circumstances.
The Guide to Good Practice is available for download on the link below, feedback and comments on it are encouraged.
www.britishtug.com/recovery-of-persons-in-water-piw-guide-to-good-practice-for-small-vessels

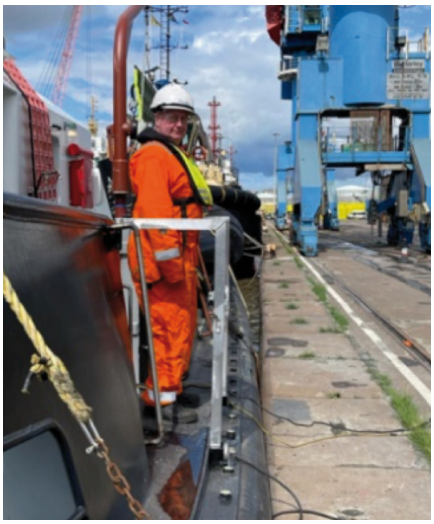
BTA

20TH ANNUAL SAFETY SEMINAR

Oliver Burke from Svitzer presented the OB rail recovery development journey.
Oliver discussed the limitation of the designs of cradles that are currently used within the towage industry such as the limited width of the cradle and the poor visibility of casualties associated with the current positioning of the davit. The OB rail allows for improved access and visibility to the person being rescued and should be accompanied by the relocation of the davit. Used in conjunction with each other this creates a purpose-built solution for the towage industry. The effective design places a railing on the bulwark of a vessel overcoming the shortcomings of other cradle rescues and is free from copyright. Oliver and Svitzer are keen to see installation on other vessels.

THE INSTALLATION

THE RESULT



Sam Mayall and Andy Tripping from Zelim offered up a rethinking of the way that search and rescue could be conducted. Zelim are exploring three innovative methods to find, recover and protect seafarers in a person in water situations.

1) SAR BOX
The SAR Box offers up a revolutionary method of utilising AI, overcoming the limitations of the human eye, in searching and identifying for persons in water. It can see up to six times further than a human in stormy or foggy conditions, an invaluable tool in time constrained situations. Capable of tracking multiple persons in water at once as well as identifying if they are wearing PPE Zelim believe there is applicability to ports and harbours across the globe.

2) THE SWIFT
The Swift, a rescue conveyor, enables seafarers to bring the person in water to deck in less than 10 seconds. It is rapidly deployable and can be operated by a single crew member, with a manual back up should power from the vessel become unavailable. It can be incorporated into the design of vessels as well as being retrofitted to vessels in some circumstances. The dynamic capabilities of this life saving device will prove invaluable in rescuing casualties in adverse conditions.

3) UNMANNED RESCUE VEHICLES (URV'S)
Zelim also discussed the next generation of URV's they are developing. Capable of being remotely operated and able to carry up to nine casualties the URV's named the Guardian and the Survivor promise making rescue efforts safer and more effective for both the rescue party and the persons in distress.

The Guardian utilises the Swift recovery system and has launch capabilities from a mothership or shore side. Built to cope with extreme sea conditions it has manned rescue potential and designated heli-hosting areas for adaptability to rescue efforts. Following scenario testing, Zelim believe the vessels have the potential to dramatically reduce rescue times.

Jim Hyslop Director of Design Development from Robert Allan Architects discussed designing recovery of persons from water into vessel construction.
Jim highlighted current problems with available rescue methods such as the height of the deck on tugs making reach, recovery, and communication with casualties difficult as well as the process of reboarding the vessel almost always requiring some degree of self-rescue. Jim outlined one solution proposed was a platform that folds out and descends the side of the vessel.

Already established on fire boat it provides a readymade solution to the issue of rescue from tugs. The second solution proposed was to cut strategically into the hull of the vessel to provide an easy access point to the water in a MOB situation. A grating can then be used to cover the notch to maintain maximum use of the working deck area.

Words by : William Rann, UK Chamber of Shipping / edited by Scott Baker, BTA Chairman

HOW TO MANAGE FATIGUE AND SURVIVE NIGHTSHIFTS

Jop Dingemans is a HEMS (Helicopter Emergency Medical Service) Pilot and the founder of Pilotswhoaskwhy.com He has a Degree in Aerospace Engineering and has been flying helicopters for about 10 years. His passion is to tackle hard aviation topics and share high quality explanations that are easy to digest and understand. In this fascinating article we look at the knowledge transfer that can be used by talking with other industries.

By Jop Dingemans

Sleep is something none of us can escape from. For some it is amazing, for others it is annoying. Pilots, like many other people in other professions, often have to deal with staying awake while everyone else is dreaming away. Lots of recent research is revealing more and more about the effects of sleep (and the lack of) on our bodies and brains. So today, we will be looking at how to manage fatigue, and how we can stay safe and healthy while (sometimes literally) flying through the night.

Human error still accounts for roughly 75% of all global aviation accidents, and pilot fatigue still accounts for roughly 20% of that! Recent studies have even shown that landing an aircraft at 5AM after a full night of flying can have a mental impairment that is equivalent to a blood alcohol level of 0.08%. Pretty crazy stuff right? Let us unpack all of this step by step, and start from the beginning.

What happens when we sleep?

Sleep is essential for us! It recharges our brains and bodies, and keeps our immune system up to speed to fight off diseases. The average amount of sleep you and I need is 7-9 hours. However, it changes based on our age, amount of physical and mental energy we have used, and our individual differences in our brains.

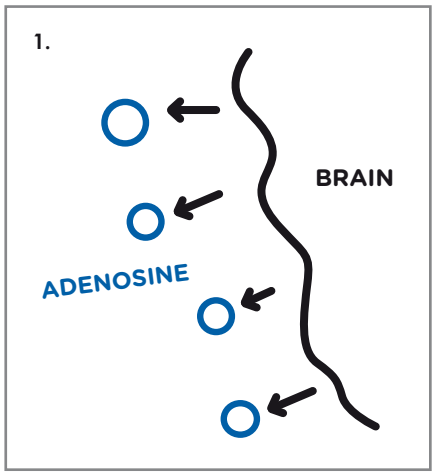
Sleep is now finally starting to get the attention it needs in a world where so many of us are chronically sleep deprived. It turns out that the sleep – nutrition – exercise triangle actually gravitates more towards sleep than the other 2, if you want to live a healthy life.

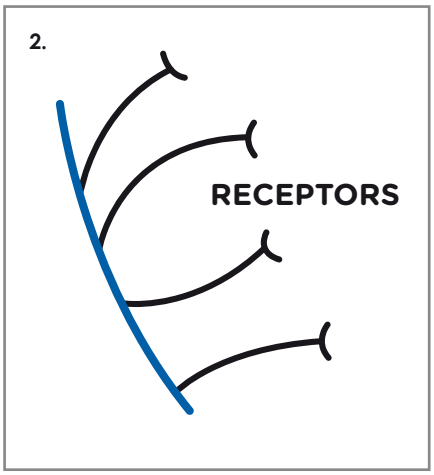
But let us zoom in on what is going inside the brain when we feel sleepy, and while we are sleeping. Why do we feel tired, and why do we (usually) no longer feel tired when we wake up?

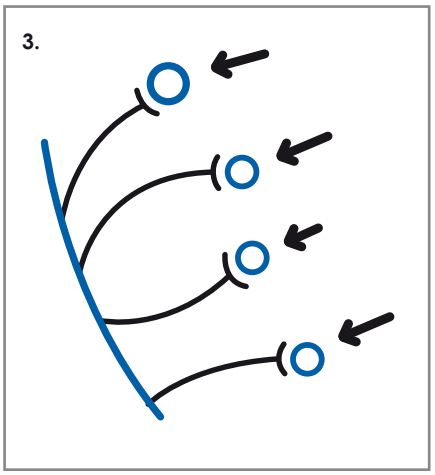
1. **When we are awake, our brain is having to deal with a constant increase in a chemical called Adenosine.**
2. **Adenosine in the brain is what makes us feel more tired when it interacts with receptors in the brain that Adenosine can bind itself to Receptors.**
3. **When this binding happens it stimulates our desire and ability to sleep.**

The act of sleeping causes the high Adenosine levels (that we built up during the day) to lower substantially throughout the night. This eventually results in waking up and not feeling sleepy once all the Adenosine is 'used up'.

In addition to Adenosine, the other important chemical for sleep is Melatonin. Melatonin helps us fall asleep and gets created in the Pineal gland inside the brain.







This gland's production is extremely sensitive to light. Meaning that if we expose ourselves to even a little bit of blue / bright light, Melatonin production is severely affected and sleep will become more difficult. Keep this process in mind as we will come back to it in the caffeine section.

What are Circadian Rhythms?

The amount of sleep you personally need is determined by our internal body clocks. This body clock is called the Circadian Rhythm. Think of it as a daily regular fluctuations of variables inside your brain and body. What variables? Good question! All of these change a lot throughout one standard cycle:

- Body Temperature
- Blood Pressure
- Heart Rate
- Sensory sensitivity
- Neurotransmitter activity

What is interesting is that a standard cycle for us actually lasts 25 hours, not 24. The reason we are able to make 24 hours work anyway, is because we have external cues telling us what time of day it is roughly: sunrise, sunset, regular mealtimes, work schedules, etc.

These points in time are called Zeitgebers (which is German for 'time givers'). If we were to lock you up in a dark room with none of these Zeitgebers anywhere, your brain would eventually return to a 25 hour circadian rhythm, with roughly 17 hours of wake time and 8 hours of sleep!

What types of sleep are there?

There are 4 main types of sleep:

1) **Transitional light sleep** is the phase between putting your head on a pillow and actually falling asleep. Muscles relax, blood pressure drops, and the brain is becoming less active (or more for some people).
2) **Light NREM** (Non Rapid Eye Movement) sleep is the next phase. This is usually the biggest chunk of our nights (50-60%). This is the phase where an annoying neighbour, cars, or anything else nearby has a higher chance of waking us up.
3) **Deep NREM** sleep is sometimes called slow-wave sleep. This is because our brainwaves slow down a lot. Heartrate and breathing slow even more, and it becomes more difficult to wake up. Deep NREM sleep is important for restoring our physical bodies. The body repairs its cells, restores functions to organs, the immune system, and bodily tissues.
4) **REM** (Rapid Eye Movement) sleep got its name from the fact that during this sleep phase, our eyes move rapidly in different directions. Our heart rate and blood pressure is higher, our breathing rate increases, and we start dreaming. REM sleep is critical for our brains. The brain consolidates all the information and processes we have kept ourselves busy with before falling asleep. It also helps transfer our acquired knowledge that was in our short term memory, into our long term memory. Without REM sleep we would all still be trying to figure out how to make fire, not a good time!

What is Fatigue?

Fatigue happens when we as humans do not get enough opportunities to get rest and let our bodies and brains recharge.

What are the different types of fatigue?

There are 4 main types of fatigue:

1) **Circadian Fatigue** is the reduced performance caused by trying to function properly outside your normal circadian rhythm. The riskiest window for this type of fatigue is between 2 AM and 6 AM.
2) **Cumulative Fatigue** is caused by constant mild interruptions to our sleep over time (throughout a week for instance). Let us say you have a baby that needs constant attention, a constantly changing roster, or simply noisy neighbours that keep waking you up.
3) **Transient Fatigue** is what happens when you stay up for a long period within 1 day, or sometimes 2. This can happen after a full night of flying, or if you are suffering from insomnia.
4) **Workload fatigue** is the type of fatigue you get after a long stretch of intense work, whether mentally or physically.

What is fatigue caused by?

For pilots, the main causes for fatigue are:

- Long duty periods
- Poor general health
- High workload for long times
- Emotional stress, whether at work or at home
- Poor lifestyle (bad nutrition, sleep, exercise, alcohol etc)
- Reduced amount of sleep or nap opportunities
- Working outside our circadian rhythm
- A bad night sleep

What are the hazards caused by Fatigue?

There are quite a few hazards that are caused by pilots being fatigued:

- Decreased mental performance
- Reduced alertness
- Long term health effects
- Increased reaction time
- Less effective memory
- Impulsive mood

All of these reduce our ability to deal with the day to day operation, not to mention unforeseen circumstances or emergencies.

How can you recognise you are Fatigued?

Recognising fatigue is extremely important when you're working in a rapidly changing, dynamic environment. What are the main giveaways from a pilot's perspective?

Here are the main ones:

- Forgetting earlier discussed items
- Increased reaction time
- Being mentally behind the aircraft
- Micro-sleeps (falling asleep very briefly / not being in control of staying awake)
- Alerts going unnoticed unless your FO or captain detects them
- Sluggishness on the radio, or even completely missing calls
- Less accuracy during manual flight

How to manage Fatigue?

So what can we do to manage the risks and hazards that come with being fatigued as a pilot?

1) Ask yourself, am I getting enough sleep in general? If the answer is no, it might be time to look into how you can increase the amount of time you give yourself to bel able to get 7-9 hours of sleep. Sleep deficit can build up and get worse over time, to the point where even getting 1 good night is still not good enough and you'll still feel tired.

2) Take care of yourself in regards to nutrition and exercise. Fatigue is often caused by poor physical health. Dealing with this has solved various long term fatigue issues for a lot of pilots (and others who work irregular work patterns like doctors, nurses, etc).

3) Make sure you create enough potential nap opportunities, if allowed during a nightshift or flight. Most OPS manuals allow for naps as long as you make sure you do not enter deep sleep, as this can cause sleep inertia in moments where your attention level should be the highest it can be. A nap that lasts 10-20 minutes is the safest way to make sure this does not happen.

Short naps, also called "Power Naps" or "NASA Naps" can massively increase performance if you feel fatigued. NASA discovered that pilots who decided to nap in the cockpit for 26 minutes, showed alertness improvements by 54%, in addition to a 34% increase in overall performance, pretty convincing results!

If you take a nap to manage your fatigue while on an off day and you're trying to not screw up your schedule too much, avoid taking naps later in the day as this can 'consume' Adenosine too close to the point where you do want to fall asleep, making it trickier to fall asleep at a normal bedtime.

Have a look at the list below. By the way, the same applies to engineers, air traffic controllers, or anyone else with a role that impacts safety in any industry.

- Adhere to your Flight Time Limitation scheme, or in the case of non-pilots, manage your working times with anything you have control over
- CRM Training should raise awareness about the effects and causes of fatigue
- Try to make working conditions the most pleasant you can while on duty
- Alert and brief colleagues if you feel tired, or if you think you are behind the curve
- Take your sleep seriously, figure out how much sleep you need (count the amount of hours you tend to sleep without an alarm), and strive to hit this amount as much as possible.
- Limit your caffeine intake
- Stay hydrated as much as possible
- Only eat small portions, if you have to, if you're working through the night

How does Caffeine affect fatigue?

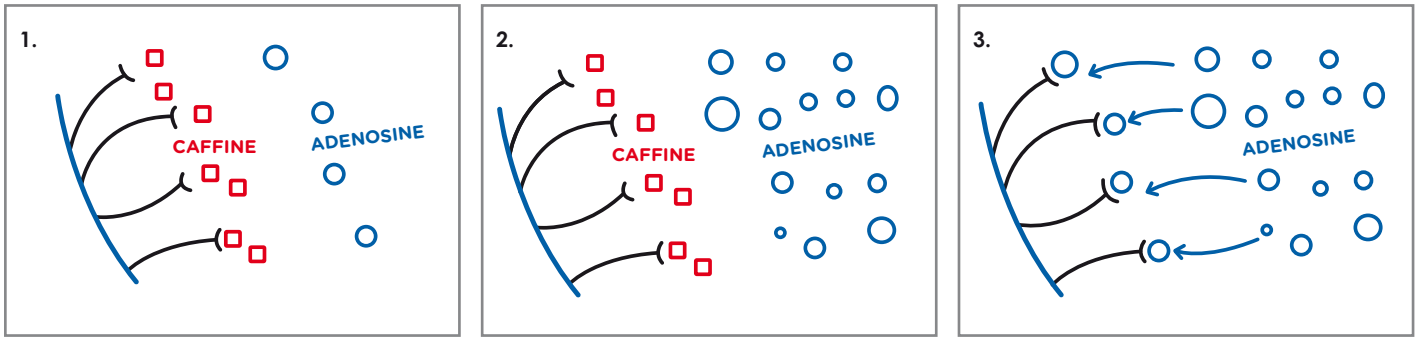
Caffeine is in a lot of stuff these days. It is loved by many for its alertness-increasing effects. But how does it work? Remember the receptors we talked about earlier that, when interacting with Adenosine, makes us sleepy? Well, caffeine attaches itself to these Adenosine receptors as well! ***(See receptors diagrams below)***

So now what?

Now, the receptors are now too busy playing around with all the caffeine that binds itself to them. You can have all the built up adenosine you want, but unless they can actually interact with the receptors, you're not going to feel sleepy!

The problem is though, that the creation of adenosine isn't influenced by caffeine intake. This means that there is a buildup of adenosine, but you don't feel the effect until all the caffeine left your system, and the receptors are freed up again:

RECEPTORS DIAGRAMS



Once the caffeine has left your system, all the built up Adenosine chemicals are like 'Yay let's go guys', and they all try to attach to the now freed-up receptors at the same time, making you very sleepy after the caffeine wears off.

This is why after a lot of caffeine, even after waking up, you might feel very drowsy! Let's have a look how much caffeine your average beverages contain.

- Your average cup of coffee: 95 mg
- Your average cup of tea: 57 mg

The recommended maximum for the average person is about 400 mg. More than this can have negative effects on cognitive and physical functioning such as:

- Digestive issues
- Anxiety
- High blood pressure
- Heart palpitations / rapid heart rate

How to Sleep Better before a nightshift?

Good question! Here are the most proven principles for increasing your sleep quality that can also be applied to irregular working times:

- Use a sleeping mask or black-out blinds if you need to sleep while there is daylight around to preserve Melatonin levels
- Use good sleep hygiene (meaning low light levels, no electronic devices before sleep, a quiet room)
- Develop routines that help you with good habits such as exercise and taking time to unwind
- Stick to a sleep schedule as much as you can, waking up at the same time every day on off days will still benefit your circadian rhythm consistency
- Do not go to bed hungry or completely full, avoid large meals right before bed
- Create a relaxing environment with optimum lights, sounds / silence, and temperature
- Try not to nap after 4 PM if you are trying to sleep soon after, as the nap will use up some of the Adenosine we spoke about earlier
- If you feel mentally busy / worried / anxious, use mindfulness techniques such as yoga or meditation to clam down before sleep
- Get more exercise to use up energy throughout the day if you feel too energetic when it's bedtime
- Try and stay away from sleeping tablets, as they can drastically reduce the sleep quality, and time spent in REM or NREM sleep. Currently the only sleeping tablet that is approved by the UK CAA is Temazepam, but needs to be ground tested by individuals to make sure you do not have side effects, and always crosscheck this with your company's policies, procedures, and OPS Manuals.
- For long haul flights, keep in mind that it takes your system a full day in a new time zone to shift your circadian rhythm by about 90 minutes

For nightshifts specifically, there are two options of sleep management:

1) Set the alarm early the night before so that when it is early afternoon you will have a sufficient Adenosine level go attempt to daytime sleep.
2) Go to bed late the night before, wake up late on the day of the upcoming nightshift, relax as much as possible during the afternoon so you will still have enough energy to complete the night shift without additional sleep.

Accidents and incidents caused by fatigue

There have been plenty of fatigue related accidents in the past:

1) A US based Night Air Ambulance Helicopter LOC-I crashed due to pilot fatigue in 2018
2) An Alaska Air Ambulance crashed with pilot fatigue as a main contributing factor in 2017
3) TriMG Boeing 737-300 from Singapore to Jakarta Halim accidentally taxied onto the active runway without a clearance in 2020. The final report included: "The captain's statement noted that he had not attained any appreciable sleep in the 24 hours preceding the flight. "
4) A superjet 100 crash in 2013 was crashed during a test flight that was linked to pilot fatigue

Lessons learnt from "Why We Sleep" by Neuroscientist Mathew Walker

I heavily recommend "Why We Sleep" by Mathew Walker. He's an experienced Neuroscientist with a PhD in Neurophysiology from the Medical Research Council in London, UK.

After lots of recommendations from the doctors I work with as a HEMS pilot, I decided to read it. In HEMS, we fly a lot at night, and deal with a Day-Day / Night-Night, 4 off roster, which can be fatiguing at times.

Here are my main take-aways from his research and experiments:

- Natural sleep is always better than medically aided sleep (pills, drinks, etc).
- The World Health Organisation has classed any form of night-time shift work as a probable carcinogen
- After just one night of only four or five hours of sleep, your natural killer cells – the ones that attack the cancer cells that appear in your body every day – drop by 70%.
- It is proven that some people perform better in evenings or mornings. Find out who you are, and utilise this knowledge to your advantage
- Cut down on blue light before sleep. If you must use a screen moments before bedtime, try to turn on night shift or any other screen mode that eliminates as much blue light as possible
- Caffeine can affect our brains much longer than most of us realise. If you have some coffee at 12 PM, a quarter of that caffeine will be still be active in your brain around midnight. It takes roughly 5-7 hours for the amount of caffeine in your body to halve.
- Adults above 45 years old who sleep less than 6 hours per night are 200% more likely to suffer a stroke or heart attack throughout their life compared to people who hit 8 hours a night
- The shorter you sleep every night, the shorter your lifespan.
- Sleep is a crucial factor in increasing skill level for anything in life. Most of the programming in your brain happens not during practice, but while sleeping.
- Being awake for 16 hours will result in the brain starting to depreciate in cognitive functioning. Try and be aware of your own limitations and brief others accordingly!

LISW23

THE GLOBAL EVENT HAPPENING IN LONDON

By Sean Moloney

London International Shipping Week 2023 (LISW23) will live up to its claim to be the 'must attend event of the global maritime calendar' when an expected 30,000 visitors and countless thousand more online, descend on London during the week of Sept 11-15 to attend an anticipated 400 events that will be held during the week.

Shipping industry leaders, regulators, insurers, arbitrations, lawyers, ship brokers, ship owners and ship managers, not to mention experts in commodities, satellite communications, classification, ship registration, crew travel, ports and port agency, training and the world's media will rub shoulders to make LISW23 the blue sky thinking and thought leadership event of the industry.

And the United Kingdom Maritime Pilots Association (UKMPA) is proud to announce that it will be there representing the interests of its members at this global event.

Sean Moloney, co-owner and co-founder of London International Shipping Week, welcomed the involvement of the UKMPA and said that holding an event during LISW23, will ensure that the elements of the global shipping industry that the Maritime Pilots want to influence, are fully aware of the important work that the sector does.

"London International Shipping Week is different to any other global maritime week because it revolves around a multitude of events that attract in the key players that everyone wants to meet and network with. Supporting Organisations like the UKMPA, as well as corporate and company sponsors are the only entities able to hold events during LISW. The week is all about collaboration and shipping industry leaders attending shipowner meetings" he said.

Moloney said, "The management of the event is highly organised and totally transparent with a Board of Advisors (or industry grandees) sitting above a Steering Group and an Executive Team. These three entities are dedicated to delivering a world class international maritime event in London during September 2023, with the aim of utilising the week to promote London and the UK as a world-leading International Maritime Centre, helping UK maritime businesses increase exports, win business and attract inward investment".

John Hulmes, Chair of the LISW23 Steering Group, added: "The world is going through a period of unprecedented challenge and change and LISW23 will be the key focal point for the shipping leaders from around the world to meet and review the current and future state of our industry."

Details have now been revealed about the spectacular Gala Evening celebrations which are planned as the fitting culmination of London International Shipping Week 2023 (LISW23). The evening is supported by our three major sponsors and will be held on Thursday 14th September 2023.

A Champagne Gala Reception, a fabulous black-tie Gala Dinner and – for the first time – an exciting After Party event, all taking place on one extraordinary evening to celebrate the tenth anniversary of LISW and all that is good about London, the UK and the international shipping and maritime industry. The glittering evening will be held at Evolution London, a truly special venue in London's Battersea Park which will welcome up to 2,000 of the world's foremost shipping industry leaders in a magnificent setting with excellent communication links, including specially chartered boats for guests on the River Thames.

The LISW23 Champagne Gala Reception will be sponsored by HFW; the Gala Dinner by ABS; and the After Party by newly announced sponsor, the French International Register RIF.

Tickets are already on sale via the LISW website. Those eager to pre-register their interest in reserving a place at this not to be missed celebratory evening, should contact Karen Martin by emailing kmartin@shippinginnovation.com.

Organised with the full backing of the UK Government, as well as the international and domestic UK maritime industries, LISW23 will attract the world's shipping industry leaders and thought leaders to London in September 2023 to network and debate key issues facing the industry. We particularly look forward to welcoming delegates from the UKMPA.

Further information about all aspects of the recently held LISW21 as well as information relating to the LISW2023 week can be found on the dedicated event website: www.londoninternationalshippingweek.com
Also follow us on social media: @LISWOfficial / #LISW23

Statutory Duty to Report

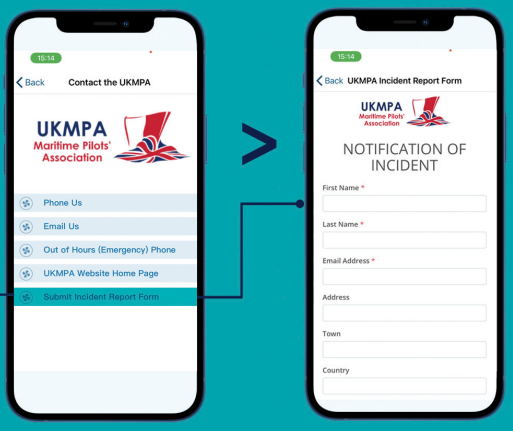
DESTINATIONS	DATA USE
MAIB Database	Statistical Analysis Only
MCA Southampton	THETIS & Enforcement
Local MCA Office	Port State Control & Inspection
Your CHA HM	Local Investigation & Records
UKMPA	Statistical record of vessel ladder deficiencies available to members
You	Result of report submission
	Confirmation of submission

THETIS = MCA Inspection, Targeting and Information System

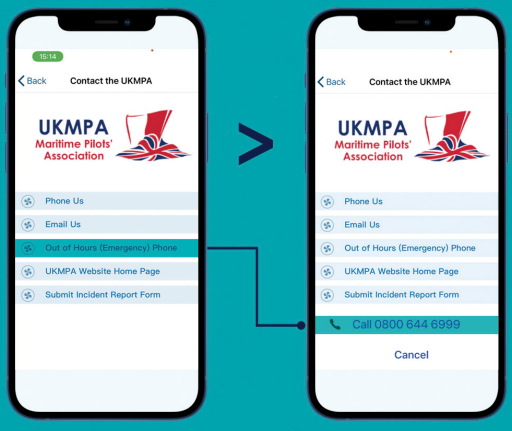
On average one non-compliant pilot boarding arrangement is reported every day.

Incident report procedure

Minor incidents



Major incidents



Protect yourself… Notify, Notify, Notify, even if you think it's insignificant.

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LIVERPOOL

At Liverpool pilots we find ourselves having had a mixed year in 2022, with the challenges of Covid moving off into the distance but dock strikes, recruitment and trade peaks/troughs moving into the fore and providing challenging times.

A large recruitment drive was initiated in 2021 and we are now starting to see new blood obtaining their first authorisations and continuing their development for the upper class going forward. We have seen a lull in traditional trade recently due to the slowing economy but also some new trade enquiries for the port of Liverpool. Senior pilots have been involved with in depth studies into the possibility of Ultra Large Container Ships (ULCS) using the river container terminal along with developments at the cruise terminal amongst others. In all we look forward to 2023 and all the new challenges the year will no doubt bring. The Liverpool pilotage service would like to pass best wishes to this year's retirees from Liverpool and beyond and thank them for their service.

David Rowlands / Secretary Liverpool Pilots Ltd

MILFORD HAVEN

Seasons greetings to all from us here in Milford Haven! Winter has well and truly set in, presenting the usual challenges with regard to boarding and landing in high seas. We are currently in the process of tendering for new pilot boats, to replace our existing fleet.

Following a couple of retirements this year to date with over sixty years experience between them we wish Mike Davies, David Phillips and Richard Evans a long, happy and busy retirement! We have two trainees at present and hope to have another new starter onboard in the spring time, and look forward to supporting them in their progression to being unrestricted pilots.

With events in Ukraine, trade to both LNG terminals is significantly higher this year in general, and anticipate a very busy winter on this front. This is on top of all the usual traffic to the refinery and oil storage facilities. Survey vessels are also calling to the port on the back of plans to develop green energy in the Irish Sea and have added to the traffic, both in number of movements and diversity of vessels.

All the very best to you all, Mark Johnson / Milford Haven Training Pilot

LITTLEHAMPTON

Littlehampton manages to get by with just two pilots: the Harbour Master and the previous Deputy HM. For long term resilience, the current Deputy Harbour Master is also in training in a process that takes up to two years due to our low numbers of shipping acts.

Shipping Numbers – An average year for us is 24 shipping acts with a range of other pilotage involving jack up barges and other vessels requiring mandatory pilotage (over 60GT). We hope to see temporary increases with project cargo during upcoming regional infrastructure projects such as the Rampion Windfarm extension and the Arundel A27 Bypass as well as nearby coastal/tidal defence projects which we support within the district.

Larger Ships – Largely due to the procurement of our multi-purpose Vessel ERICA in 2015 (which is able to provide berthing assistance/towage as well as the pilot boat role) we have been able to increase the port's maximum LOA from 72m to 80m LOA in recent years but we are now truly at "Littlemax". This couldn't be increased without widening our turning basin which is a project for which there would be no financial justification with current demand. These larger vessels also come with increased survey and dredging requirements on our NAABSA berths leading to modernisation of our in house bathymetric surveying capability. ERICA can also level berths when fitted with her plough in addition to pushing a chartered small water injection dredging barge.

Simulation/Manned Models – To help our pilots stay current with reduced numbers, the port has procured a desktop PC version of BMT Rembrandt's simulator for Littlehampton entries/departures. We also attend an annual one-day manned models refresher at Warsash after attending their truly excellent week long course prior to original certification.

PPU – To assist with harbour entry, turning and berthing we have recently been trialling a PPU system. Our harbour entrance has a strong cross-tide that means we must transit our 30m wide narrows at 6 knots with a 12m beam, 80m long coaster so every metre counts making pilotage a dynamic ship handling challenge in Littlehampton and quite daunting for first time masters. We found that PPU is useful for training purposes and fantastic for slow speed close quarters work. However, we concluded that it just proved an additional distraction in our highly specific case. If the pilot couldn't maintain sufficient situational awareness in our entrance without it, then he shouldn't be attempting it was our conclusion. PPU would represent quite an investment for us so we are keeping the option under review using training (i.e. use by the tripping pilot) and berthing as the business case.

Safe Seas / Littlehampton Pilots

PLYMOUTH

It's been another successful year for the commercial ports in Plymouth. Vessel numbers have risen post Covid and many of the commercial docks are busy with regular and new cargoes.

Over 900 commercial vessel movements were recorded during the year 21/22, which represents a 15% increase from the year before, a year which was greatly affected by Covid 19 and the slowdown in trade and industry. The easing of Covid restrictions resulted in a 12% increase of Gross Tonnage using the port, and a 17% increase in cargo through the port. Total cargo shipped through the port was 2.2 million tonnes. Regular cargoes and traffic include; Clay and Stone exports & Fuel, Cement and fertiliser imports. We also continue to support the regular ferry services to Roscoff and Santander. These figures look to be improved on during 22/23. We continue to operate with 4 full time pilots, 1 relief pilot from a neighbouring port and currently have 1 pilot under training.

So far 2022 has been an interesting year with many new vessels visiting the port including the recent visit of the MS Rotterdam. At 300m LOA she was the largest vessel ever to visit the port. Her visit was just one of the many cruise ships choosing to call at Plymouth now.

Following the delivery of our new ORC121 Pilot Boat from Goodchild Marine in 2020 we continue to bring in more technological advances with the roll out of a Trellborg PPU system and we are currently in the final stages of set up and roll out of eMPX our new electronic Master/Pilot exchange and billing system.

Training and engagement activities continue with 2 pilots recently attending the manned model course at Timsbury Lake and pilots attending various national and local meetings and conferences.

Yours Aye / Plymouth Pilots

SOUTH WALES

We are currently working with 16 pilots, 1 short of our agreed 17. This covers both South West and South East Wales as we now work a combined roster.
South Wales have seen 3 new pilots authorised, and we have 2 pilots currently training, 1 a trainee pilot and 1 an apprentice. Both should authorize early in 2023, but with 1 retirement, we will be at the agreed number. We have had 1 pilot leave in the last year, and we wish him well in Plymouth.

Ship Numbers – Rather a quiet year, with ship numbers down on previous years. Newport remains to be the busiest of our ports, with steel import and export still flowing well. Ship numbers were boosted last year by Hinkley Point traffic in and out of Barry, which has now sadly finished.

Port Talbot is still the busiest port in SW Wales but is much quieter than in recent years.

Technology – We are now up and running with EMPx and with Safe Pilot. We have also had recent instruction on how to use these navigational aids. We are still awaiting the base station

located in Port Talbot to allow the CATROT max units to be used for the Cape size vessels that dock in the harbour.

The Future – We have a new Pilot operations manager (an ex pilot), a new working system (11 days on, 6 days off) and quite a few new pilots.

The future seems to lie in Port Talbot Harbour, where the application for a Freeport has just been announced. The future revolves around the possible production of offshore wind turbines, which would mean big changes in the harbour, and a big investment from ABP. There is a new Pilot building being built in Barry, in conjunction with the RNLI, and this should hopefully be ready next year. There is also a new pilot boat being built for use in South East Wales, and again hopefully we will have delivery in 2023.

Best Wishes from all the Pilots in South Wales

CLYDE

We started 2022 with 8 full time Pilots. As trade has increased recently 3 new pilots were recruited in the Spring and have subsequently all been authorised so we are currently sitting at 11 full time pilots which breaks down as follows - 5 x class 1, 1 x class 2, 2 x class 3 restricted, 3 x class 4.

Shipping numbers – Figures for this year based up to 31st October 2022 show 1426 piloted movements with a projected approx.1750 total pilotage movements per annum.
Trade in most sectors has increased. Finnart oil terminal has been particularly busy this year and the full return of cruise vessels to the new Greenock Ocean Terminal Cruise berth has kept us busy during the summer.

The container traffic to Greenock had increased during the early part of the year, however, recently it has been affected by the downturn in the economy and the strikes in Liverpool docks, time will tell if these vessels return to Greenock.

Technology adoption, enhancements, changes – Trelleborg Cat Rot / Cat 1 Portable Pilot Units have been supplied to all pilots. Clydeport also has one Trelleborg Cat Max independant PPU system for use on large vessel movements, barge moves, project moves, etc.

All Clyde pilots and Marine Managers have attended Peelports 1 day pilot ladder training course at Fleetwood College. This course is predominantly a practical course which includes falling from a ladder into the environmental pool.

Port development, dredging, simulation studies – EMR (European Metal Recycling) completed their large investment in a new berth at King George V dock in Glasgow. This facility allows them to load significantly larger vessels (max loa 200m), however, they are draft restricted for sailing to around 8.5m depending on tide and will usually sail from Glasgow to Liverpool to load to full draft.

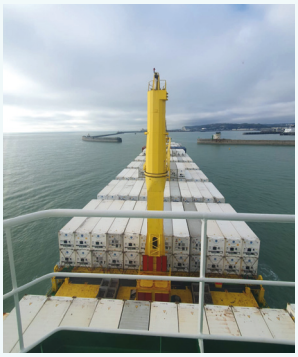
We have a large ongoing project planning the load out and float off of the Type 26 frigates being built at BAE Govan. This has required a number of hours using the in house PC Rembrandt ship handling simulator to determine towage requirements and weather criteria for the loaded barge and for the return towage to Glasgow for the Type 26 frigate.

Safe Sailing / Clyde Pilots

DOVER

At the Port of Dover, 2022 saw the authorisation of two new Pilots at class 2. These Pilots are Tom Hyde, the recently appointed Deputy Harbour Master and Kirk Blacker, former Master of the Hebridean Princess and now Duty Harbour Master. That brought the total of authorised Pilots in Dover temporarily up to seven including the five existing class 1 Pilots/Duty Harbour Masters. In 2023 we should see Tom's and Kirk's progression to Class 1 plus the retirement of Pilot Nick Dunn who has been with the Port of Dover team for nearly nine years, which will leave Dover with six Pilots.

Pilotage acts carried out in 2022 showed an increase of 25% on pre-pandemic (2019) numbers with an increasingly diverse mix including cruise, container, reefer, aggregate, bulk, grain, cable layers and bunker vessels. This was also the first year for all year-round cruise calls with Hurtigruten visiting throughout the winter keeping both cruise terminals, and occasionally the cargo terminal well utilised for cruise visitors. The Pilots have also



continued authorising and revalidating Pilotage exemption certificates with an additional 12 issued in the past year due to the expansion of Irish Ferries on the Dover Calais route.

The Dover Pilots have continued in their roles as Duty Harbour Masters; the senior Manager in the port dealt with various challenges including the return of tourist traffic and implementation of the necessary post Brexit border checks.

Aside from at work activities, the Dover Pilots have also joined in with voluntary work carried out by the Port of Dover team including assisting local charities and litter picking on local beaches.

Best wishes for 2023 from Guy, Tom H, Tom S, Chris, Frances, Kirk and Nick, / Dover Pilots.

SOUTHAMPTON

We started 2022 with 38.5 full time equivalent (FTE) Pilots and the retirement of one longstanding Pilot. We have recruited 4 new Pilots and we will be a compliment of 39.5 FTE Pilots with 40.5 expected by March 2023.

Shipping numbers – Figures approximately based on year-to-date 31st October 2022. 6700 - with a projected approx. 8000 acts per annum. A steady trade in most sectors showing a general trend of return to business after the pandemic. The return of the passenger vessels in force meant for an active spring and summer.

Technology adoption, enhancements, changes – Portable Pilot Unit replacement and enhancement is underway with new hardware. New replacement independent PPU's are being acquired for the Ultra Large Container Vessels. The EMPX (Electronic Master/Pilot exchange) Testing and adjustments have been signed off, and rolled out to all our Pilots. This software takes information from the Port & Vessel System which collates data such as tidal predictions, weather forecasts, charted info, standard timings. This assists Pilots with their passage planning improving the MPX flow of information.

Port development, dredging, simulation studies – The second phase of dredging in the vicinity of the container terminal took place in the first part of 2022. Following simulation work our container specialist could establish operational limitations for the first Ultra Large Container Vessel berthed at the furthest upstream berth for the first time in history.

Other Pilot activities of note – Mid July saw the first Southampton Pilot's Boat Rally to Yarmouth on the Isle of Wight. On one of the hottest days of the year, four boats took Pilots and friends for an afternoon and overnight social in Yarmouth in the Western Solent with swimming off Osbourne Bay and wake-surfing.

In September, Pilots joined maritime professionals in the area, including VTS, DP World and Svitzer along with others from the local maritime community, for the second annual Southampton Master Mariner's golf day held at Paulton's Park. Prizes were given for individual Stableford Scores, nearest the pin and longest drive. Profits from the day went to the Cachalots charity. 2023 golf day will be held at Corhampton Golf Club on 28th September. All invited.

Safe Seas / Southampton Pilots

COWES

Cowes has seen a steady stream of vessels through the CHA in 2022. Numbers have stabilised in the last few years to around 100 acts, well below the previous 3 years but with developments on the Island slowing down so too has the demand for products. Tows requiring pilotage have increased slightly along with the small increase in Cruise vessels coming to anchor which has helped keep numbers up.

We have had a bespoke refresher training course commissioned in order to ensure, even with lower acts we are remaining at optimum performance and current with new legislation and techniques. The training comprises of two elements, BRMP to ensure the interaction with Masters / crews and pilots remains conducive to safe and efficient comms during pilotage and simulator time to allow knowledge sharing of techniques and peer review to achieve safe and efficient operations.

I would like to thank the UKMPA and general pilots community for their continued assistance through what are still interesting times. It was good to catch up with old faces at the AGM and really good to meet new ones and find out how other CHA's are faring.

All the best from the Cowes Pilots and hope everyone has a Happy New Year.

GREAT YARMOUTH

It has generally been a good year at the Port of Great Yarmouth. As of early February, we returned to our full strength compliment of 6 Pilots, from a low point of 2.5 back in mid-2020 due to a combination of resignations and retirements. The bulk of the training of 4 new Pilots falling onto the shoulders mainly of 2 Pilots.

The bulk of our business is the Oil & Gas offshore sector which has been fairly healthy overall, with options opening up due to price surges driven by World events, OSV rates up by 20% from the start of the year. We have not seen so much Wind Farm construction traffic this year as in previous years, but we still anticipate benefiting from this sector with some new projects which are planned to come on stream in the near future. Would it not be nice if our Government and energy produces really embraced our greatest untapped energy source – tidal power? Afterall, the UK has the second strongest tides in the world after Canada and it is green and guaranteed!

Our Outer Harbour continues to be busy generally, with large quantities of grain exported, crushed stone imported and now new commodities such as scrap metal being exported to foreign markets in sizeable quantities, as well as visits by the larger vessel connected to the offshore industry.

Acts are on average 250 per month and getting back to pre-Covid levels.

We are currently constructing a 3rd Bridge crossing at Great Yarmouth to cater for future business demands, so interesting times for all lay ahead.

Regarding Pilot Boats, our 2nd boat and preferred heavy weather boat (Puffin) has been out of action for over 12 months awaiting repair. Therefore, our main and newest Boat (Horatio) has steadfastly provided good service to the Port. At the time of writing, Puffin is completing her repairs and will hopefully be ready to serve throughout the oncoming winter.

Regarding training, all Pilots and some VTS members have attended a 2-day Pilot ladder training course held at Fleetwood Nautical College. 2 Pilots have attended a Pilot assessor course held at our sister port at Sheerness to enable them to assess the other members of the Pilot team as well as PEC holders.

We have a good working relationship with our colleagues at Medway/Sheerness, as well as our local marine management.

J.A.M. Donnelly / Great Yarmouth Pilots

ABERDEEN

We are now the re-branded Port of Aberdeen and started 2022 with 12 pilots, 10 full tonnage and 2 trainees. In September a pilot left to go and work at another UK port. An experienced replacement is due to commence with us In January (from the same UK port). No expected retirements. We are on track for just short of 5000 movements this year, an almost ten percent increase on 2021. We received a most welcome 4 percent increase in April 2022.

Port expansion – In July we had a soft opening of the South Harbour expansion project. At the present we have more than 700m of new deep water quay operational. A learning curve for all of us. Quite a logistical challenge that has not been faced before with much longer transit times and with only one pilot cutter in operation at any one time causing some inevitable delays for the established north harbour traffic. As 2023 progresses we expect to be handling progressively larger tonnage, including new cruise traffic. As at the end of 2022 we have had a variety of vessel types, mostly offshore project vessels with mostly positive feedback, particularly due to the fact there is no tidal restrictions. Workload, traffic numbers will be monitored by management.

Technology – We continue to use our in house Transas simulator with integrated tug bridge to prepare for the larger tonnage expected at South harbour. Four pilots received advanced user training on the Trelleborg PPU that we are using. Training/CPD – Four senior pilots had an excellent week on Timsbury lake in the summer. We expect most of the pilots to attend a Marine Resource Management course in 2023. The harbour board has offered us courses on Mindfulness, Stress management and Diversity and Inclusion along with the range of IHasco online training modules.

Yours Aye / Aberdeen Pilots

FORTH

We are now 22 pilots, one retiree this year, will be 21.5 from March when one of our number goes part time. At present we have five pilots over the age of 60, will be six in January. The intention is to keep our numbers around 22, so we have started the recruitment process to replace natural wastage. Interviews have commenced and we intend to make appointments in the New Year. It takes three years from first Authorisation to Senior First Class.

We have been working the new watch system since April. We amalgamated dayshift and nightshift to allow us to manage the peaks and troughs more efficiently, a full review of how successful this has been will be conducted next April when we have completed one full year.

The port has provided 12 PPU's with the SeaiQ chart system, these are positioned at various locations around the District where they can be left on charge. They are for use by all pilots as required.

Now that we appear to be "post" Covid, trade has picked up significantly, particularly cruise liners, I am surprised how quickly people have returned to cruising. 2022 had us back at pre Covid levels, 2023 is predicted to be 50% increase, one reason for recruiting.

Pre Putin's invasion of Ukraine virtually all the oil from Hound Point went to China or South Korea, they must have done a deal with Russia as overnight it stopped. All the oil now goes to Europe on shuttle tankers, 600,000 barrels as opposed to VLCC's, 2 million barrels, better for us. Gas from Braefoot is a little down, surprisingly.

Tanker traffic to refinery is very steady, a slight increase year on year, still importing shale gas from USA, Marcus Hook, about one vessel a week. Container traffic is also slightly up, no masters with Pec's. A shortage of various building materials over the year, particularly timber, that has pushed up freight rates. Plenty of timber here now, they are building houses everywhere.

We now lease eight cars, which are left at various locations where it is safe to leave keys. These are to reunite pilots with their cars during shifts without having to use taxis, works well and has saved us money. We hosted a drinks evening in Edinburgh on the 1st December and invited all pilots, wives and people we worked with over the year to help ensure we are all still friends!

All good on the Forth, still eating meat.
Regards Graeme Hutchison / Forth Pilots

MEDWAY

With 4000 acts completed in the past 12 months on vessels up to 350m in length, it has been one of Medway's busiest years on record. Our number of authorised pilots is currently 22 with recruitment ongoing and scope to increase this number if trade remains strong. In the last year we have had some retirements and have welcomed five new pilots to our team.

We have recently upgraded and increased training on our Rembrandt Simulator, which is now also used in our recruitment process very effectively to gain a better understanding of the candidates.

We are one of only two ports in the UK to Import LNG and have the largest LNG terminal in Europe (and still expanding further). The unfortunate Russian/Ukraine conflict has increased LNG being imported to the UK (sent onwards to Europe via pipeline). LNG pilots have been in high demand and we have worked

with the Port to secure the trade with various incentives.

The import of building materials (cement, aggregate and timber) continues to be strong, however we anticipate the cost of living crisis will affect the building trade. We hope the Lower Thames crossing project should offset this.

We are in the final planning process to extend our car terminal to allow Sheerness to take 220m Ro Ro car vessels.

PPU's have been rolled out firstly to the more senior pilots but hopefully the more junior ranks soon as it does now seem to be almost a standard piece of pilot's equipment

Some of our training courses now include delegates from within the Peel group such as Great Yarmouth, Liverpool and the Clyde, we have really benefited from sharing our knowledge and meeting colleagues from the different ports.

Chatham lock gates were damaged in the spring and are still under repair. We are hopeful that it will be back in service soon, as the dock still has regular trade of timber, cement, steel and scrap metal.

The pilots committee continue to work with the Port, to not only safeguard T&C's, but also offer calculated and costed efficiencies benefitting all stakeholders.

Regards from the Medway

HARWICH

Harwich Haven Authority, the statutory harbour authority and pilotage service for the Haven Ports, recruited pilots who have passed the authorisation process. This was after six months of rigorous training, tripping with other pilots and an oral examination and simulator assessments. With their different and varied seagoing backgrounds they bring valuable and recent experience in ship operations and bridge team management.

Channel deepening of the deep water approach channel to the harbour continues. This has seen different types of dredgers and tow operations of varied marine plant to the area. The ships masters requiring a PEC have undergone examination.

Ships calling at the Haven area continue to be of a large size with regular callers on the Far East – Europe trade of 400m or megamax class. There are new orders of 400m container ships still being placed at builders yards. The River Orwell ABP Ipswich continues to see a healthy mix of coastal trading ships to deep sea dry cargo ships on varied routes including across the pond from the USA.

Our pilot training focuses on ship handling of ultra large container ships which we have recently done in partnership with HR Wallingford ship simulator. We also attended the Liverpool Pilots BRM-P course which was made enjoyable with a focus on pilotage and bringing together pilots from different areas and sharing experiences. It is always good to learn from others.

The Authority has a focus on decarbonisation and environmental and social governance. A new team led by a ESG director develop and implement plans in the area engaging with the local community about port activity and the environment.

Pilot recruitment is currently positive with the next intake of trainee pilots being interviewed.

Mike Robarts / Harwich Haven Authority Pilot

PLA

The port has experienced a buoyant year to date, tonnage growing by 9% and the total pilotage acts looking to exceed 11000 for the year. 2022 has also seen the return of several visiting naval vessels and training ships, plus the river has welcomed back numerous cruise ships, making regular port calls once again.

Pilot numbers – At time of writing, there are 98 (FTE) Sea Pilots and 16 River Pilots. Several Sea and River Pilots have now retired from the river, which requires the port to continue its pilot recruitment programme. Due to demand, this year saw 14 trainees begin their training.

Pilot development – Pilots have been refreshing and updating their skills by taking part in numerous professional development courses. This year saw some candidates attending Manned Model training, SEAIQ courses and Bridge Resource Management. All pilots are now equipped with upgraded iPads and have access to SEAIQ.

Port Developments – DP World is currently overseeing the construction of London Gateway Berth 4, this will see the extension of the current jetty to allow the terminal to then handle up to 4 ULCS's at any time, completion is expected in 2024.

Ongoing dredging campaigns throughout the river and estuary, coupled with continued survey work throughout the area. The port is currently looking at the potential benefit of installing live tidal flow monitoring equipment, to show real-time measurements at various parts of the river.

Events – A host of events took place on the river to mark the passing of Queen Elizabeth II, some of these were long standing annual events that were adapted to honour Her Majesty. The River Reflections Flotilla saw 170 boats proceed along the upper part of the river on a colourful September evening. The Great River Race was also honourably held, with pilots crewing some of the rowing boats, that flew flags at half-mast.

Best wishes / PLA Pilots

TEES BAY

We currently have 32 Pilots. With a number of recent retirements and several more to come soon, our recent recruitment drive continues. Ship numbers remain good with petrochemical, bulk and container cargoes remaining relatively strong. All four drydocks are generally busy with regular import and export cargoes at Port Clarence and Port of Middlesborough. The new biomass power station at Tees Dock is still in a commissioning phase, but is expected to be online soon. Teesside Freeport continues to garner a lot of publicity with positive announcements coming on a regular basis. There is no obvious benefit on the river yet, but significant work to redevelop the South Bank, including a brand new quayside, are continuing at a pace. As a part of this development a new monopile factory is under construction. Completion expected in 2024. The facility has been designed to accommodate the production of new extra-large monopiles and will become SeAH Wind's first such resource outside South Korea. When fully operational, it is expected to produce between 100 and 150 monopiles per year which will be transported directly from the new South Bank Quay.

Best wishes, from all at Tees Bay Pilots

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REMEMBERING
JOHN HART BURN

Date of birth 31.10.1940 (Halloween) at Tynemouth Jubilee Infirmary. Educated at 'Tynemouth Boys School' 1945-1957.

Upheld a long family tradition by joining the Tyne Pilotage Service as Pilot Assistant in 1957 and continued education at the 'Nellist Nautical School' at Newcastle until 1962.

Joined 'Moor Line' (Runciman-Newcastle) in 1962 and remained with that company throughout sea service sailing in 'Linkmoor' then in sister-ships 'Hazelmoor' and 'Glenmoor'. Further nautical education taken at 'South Shields Marine School' until obtaining 'Master F/G Certificate in late 1969.

Being called back to the Tyne Service, commenced as Third Class pilot in January 1970 proceeding through to First Class in May 1974.

Elected to 'Tyne Pilot Committee' in 1974, to Examination Committee 1975 and then to the Board of 'Tyne Pilotage Authority' in 1976 until the demise of that body in 1988 when Port of Tyne Authority became the Pilotage Authority.

1940
2022

Became a founder member of Tyne Pilots Ltd. Contracting Pilot Services to Port of Tyne Authority in 1988.

Was elected to represent 'Tyne Pilots Limited' in 2000 when the Pilotage Authority (Port of Tyne) was obliged under the 'Port Safety Code' to set up a Pilotage Committee once more.

National representation of Pilots commenced on becoming Regional Representative on the 'Pilot's National Committee for Pensions' in 1975. In 1975 was elected to the Section Committee of the Marine Pilotage Branch of the T&GWU continuing to hold that Office until 1983 and through the time of 'Joint Executive' with the UKPA (1983-1986) and then into the newly named UKPA(M) under the umbrella of the T&GWU.

In 1980 commenced to serve as Secretary/Treasurer UKPA(M) until 2001.

Elected to the Office of Trustee Director of the Pilots' National Pension Fund in 1988 serving until 1993 when retired from all National duties.

Retired from the Tyne Pilotage Service 2400hrs 4.4.1993 and continued work on various country and marine related committees.

Deceased 21st August 2022.
Words by Libby Burn

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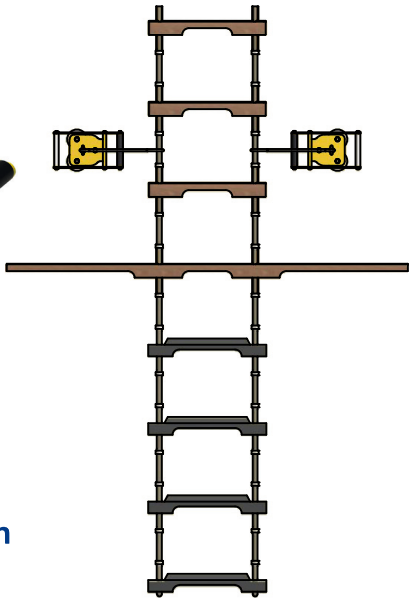

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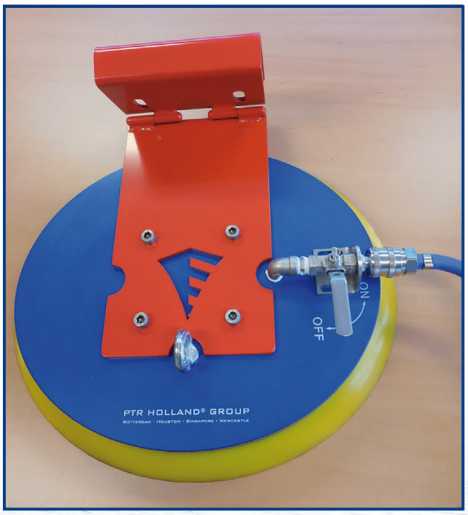

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