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IN THIS ISSUE

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LETTER FROM THE EDITOR

Many thanks to Patrick Walsh for the previous editions of Safe Passage, he has certainly set a high standard to aspire too. Pat and I are 'co-editing' Safe Passage, and for the lucky reader this will be my first time at the helm.

As a newish Director with AMPI (a little over a year now), it's been enlightening to see how many issues Jo and her team are addressing behind the scenes. It's an extensive and never-ending list, let alone the day to day running of AMPI. AMPI works tirelessly for our profession, but it's OUR profession so please, the more involved members are the better AMPI can work for us all.

I'm sure we are following the situation in Ukraine - I was hoping to contact a Marine Pilot from Ukraine to hear their story but unfortunately contact has not been possible. I worked with a Ukrainian Captain recently who said he used to be an Odessa Pilot; he told me that it was not possible (to contact) due communications blackout. It is truly saddening to think that this is still going on - the important work that Marine Pilots do all around the world would be next level vital for Ukraine right now. Our thoughts are with them all.

So, this issue, on the back of a successful conference in Cairns, many important contemporary themes were covered from a great number of experts in the field. Captain Richard Hill (NZMPA) has kindly provided a rundown of the conference for us, while AMPI will provide a rundown for the next NZ conference. I'm sure this won't become another Kiwi v Aussie rivalry! The presentation papers are available on the AMPI website. Important topics from the conference include mental health, training and checking pilots, cruise ships and integrating into the bridge team, simulation and better incident management. Well worth a look.

I'd like to make a special mention to Doctor Keith McGregor and Dr Matthew Thomas. Dr Keith (Personnel Psychology NZ) will be joining AMPI as our professional counsellor for the PAN network. PAN is an incredibly important part of what AMPI offers and we're lucky to have Keith assisting us. Dr Matthew has been assisting Port Hedland Pilots for a long time (and I'm sure many other organisations) with fatigue management. He has kindly provided an article for us on tips to managing fatigue while on task (rather than just chugging down another 'strategic' coffee).

By chance at a recent course, I came across the term 'UPRT' - Upset Prevention Recovery Training. As usual Aviation leads the way in recognising and addressing an important fact about human response during emergencies and high stress. Looking further into this provided a real 'aha' moment for me into what the brain and body does to us during these intense moments and is entirely relevant to the Marine Pilot profession. I hope I've covered the basics on this correctly and thanks to Shane Tobin who looked over the article for me (as an expert). Hopefully, integration (or at least recognition) of this can lead to better 'human' management during times of high stress.

And, putting together an article (for publication) is a daunting process, so thanks to Kate, Ricky, John and Damian for their contribution in this edition. It is easy to tap into other journals for their content which of course we do, but it's important that we also contribute to the profession and our issues at hand.

Lastly, I just wanted to pass my gratitude to Marvie for keeping the directors in line (gold star award!) and to Emma for arranging a brilliant conference and for her assistance with this edition. :)

Kind regards,
Capt. Tom Hilton
Co-Editor

WELCOME NEW MEMBERS

First Name	Last Name	Post State	Post Country	Pilotage Organisation Service-Employer
Aden	Felstead	WA	Australia	Auriga
David	Ellis	VIC	Australia	PPSP
John	Stewart	WA	Australia	Pilbara Ports Authority
Lee	Weldon	WA	Australia	Pilbara Ports Authority
Haipeng (Nathan)	Zhou	WA	Australia	Pilbara Ports Authority
Glenn	Wetters	WA	Australia	Pilbara Ports Authority

PRESIDENT'S REPORT



On Sunday 13th April the Merchant Navy War Memorial Fund (MNWMF) held its annual commemoration at the MN Memorial, Rookwood Cemetery in Sydney. This occasion marks the sacrifice and service of Australia's merchant navy mariners.

AMPI Director and Woodside pilot, Glenn Attrill represented and laid a wreath on behalf of all members. As it remains today, the role of merchant shipping is often overlooked and undervalued, despite in WWII, the Merchant Navy suffering proportionately the highest casualties of any of the allied services. AMPI was honored to be a part of this important and poignant ceremony.

In Queensland, consultation with, and representation of affected members continues as the Qld Pilot Licensing Health Standard has been released in draft form. The next consultation committee meeting with MSQ will be held on 23 April. AMPI shares concerns with other stakeholders, including AMOU, as to frequency of physical assessments, inadequate fatigue provisions, lack of salary continuance or sick leave entitlements, amongst other issues.

Our Regional Ports & Pilotage Conference in Cairns has just disappeared in the rear-view mirror. The event was a sell-out with 163 registered delegates from 10 countries and very positive feedback on the quality of presentations and plenary & workshop content. AMPI now hold the largest regular operational maritime and port conferences in Australia. We run three conferences over each two-year period, allowing us to bring these events to as many members as possible, across the many states, territories and PNG.

Whilst I have heard some negative commentary in years past, (from people who have never attended), that our Conferences are primarily social/networking events – they are in fact vital to meeting AMPI's mission. They underpin CPD for members, they sustain vital ties with regulators, port operators and pilot service providers, aid influence with regulators and policy makers and promote best practice across all areas of pilotage operations. I encourage all members to attend, when possible, and guarantee that you will take home some learnings to apply across your own operation.

It was particularly pleasing to connect with the many Great Barrier Reef pilots representing both Torres Pilots and Auriga during the Cairns Conference. Session 1 covered coastal & reef pilotage and highlighted the similar challenges, issues and innovations that port pilots share.

The GBR was the first jurisdiction in Australia to be opened to direct, on-water competition and 30+ years on, it is pleasing to see mutual respect amongst individual pilots despite competing employers – albeit with a strong and active regulator (AMSA), enforcing common standards in the background.

Pilotage service providers in Australian ports have undergone a monumental shift in recent years – in many cases with appropriate regulation as an afterthought. The resultant uncertainty and stress to individuals is still playing out in parts of the country. It is AMPI's mission to ensure, where possible, that pilots as individuals are protected from the negative forces of business competition, receive appropriate training and best practice operational procedures, and do not become “scapegoats” for commercial or regulatory failings. This is no easy task given the recent seismic shifts, but AMPI will continue to lobby, influence and pressure for the best outcomes for marine pilots as individuals, not for pilot service providers or commercial interests.

Finally, and a segue to mention a personal takeaway from Cairns. For those affected by any of the work issues mentioned above, or just “life punching you in the face”, presenter Mark Busque offered timely and practical advice on Life Design, Perspective and Resilience. I highly recommend it. His presentation is available in the membership section of our website or there are podcasts, a book or online training resources at marklebusque.com.

Safe passage is published twice per year by our hard-working editors Tom Hilton and Patrick Walsh. eNews updates are emailed to members 3-4 times per year. For more regular news, AMPI events and activities, follow our social media accounts on LinkedIn or Facebook.

Safe Piloting,
Capt. Jo Clark
AMPI President



MERCHANT NAVY Remembrance Day

GLENN ATTRILL

With great honour AMPI was invited by Mr Paul Trangmar (Director) of the Australian Merchant Navy War Memorial Fund to represent and pay our respects at the 60th Annual Commemoration at Rookwood Garden Cemetery in Sydney on Sunday 13th April.

A deeply moving, informative service and ceremony was a timely tribute and reminder to all in attendance of how fortunate our current generations are to have lived

and sailed on the oceans in a period of unprecedented global peace and prosperity.

The marine pilot's institute was represented by myself and a wreath was laid on behalf of all AMPI members.

The next commemoration event for the Merchant Navy War Memorial will be held at the Australian War Memorial in Canberra on the 19th October.



And, a beautiful variation on The Ode:

***“They have no grave but the cruel sea;
No flowers lay at their head;
A rusting hulk is their tombstone, afast on the ocean bed.
Age shall not weary them, nor the years condemn.
At the going down of the sun and in the morning;
We will remember them.”***

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AMPI CAIRNS CONFERENCE

March 2025

I was fortunate to attend my first AMPI Regional Ports & Pilotage Conference in Cairns representing the NZMPA. The title of this conference was Beyond Routine: Excellence in High Stakes Marine Operations. The plenary sessions were held over 2 days with the 3rd day involving workshops covering check pilotage, CPD and advanced PPU.

Captain Josephine Clark, AMPI President, opened the meeting and welcomed the attendees, followed by an introduction from the Honourable Bree James – assistant Minister for Tourism, Early Learning, Creative Industries and FNQ

RICHARD STEVENSON (CEO PORTS NORTH)

- The Port Authority oversees 9 ports in North Queensland, managing 1900 pilotage operations with 14 pilots over a large geographical area.
- Succession planning is vital due to an ageing workforce; industry collaboration can maintain a pipeline of skilled pilots.
- Training costs for pilots, limited training opportunities at low volume ports, and rising pilotage costs are challenges.
- Risk management is critical for delivery of safe pilotage services.

CAPTAIN DAVID FERGUSON (CAIRNS REGIONAL HARBOURMASTER)

- David discussed the Cairns MSQ region, including its pilotage, towage providers, port authorities, and disaster management groups.
- Cairns MSQ oversees 10 ports under one VTS.
- Improved liaison between VTS and stakeholders are encouraged.
- Collaboration between Smartship and Cairns VTS includes live simulations with real-time communication for routine and emergency scenarios.
- This results in effective port resource management, enhancing safety and efficiency.



ANGUS MITCHELL (CHIEF COMMISSIONER ATSB)

- Angus delivered the opening keynote address, titled “The Importance of Data and Dynamic Risk Assessments.”
- Two incidents were discussed during his presentation.
 - The first involved the MV Rosco Poplar. One conclusion from the investigation was that the check pilot system was ineffective. The data indicated that the likelihood of identifying deficiencies during check voyages varied among check pilots, and the Check Pilot system did not provide the intended competency assurance.
 - The second incident involved the MT CSC Friendship, which broke away from its moorings on the Brisbane River in deteriorating conditions. The investigation revealed deficiencies in procedures and processes with the state regulator, pilot provider, and wharf operator.
 - The port implemented a new Incident Management System, established emergency response arrangements, introduced additional pilot training, provided new high current departure manoeuvring guidance and created a Maritime Emergency Management team within operations and VTS.

SESSION 1 – COASTAL AND REEF PILOTAGE

CONRAD ADAMS – AMSA AUS COASTAL PILOTAGE REGULATORY FRAMEWORK & REVIEW OF MO54

- The presentation covered coastal pilotage in Australia, highlighting the balance between environmental protection and trade, pilotage areas and the under-keel clearance management system (UKCM) for Torres Strait.
- Coastal pilotage deregulation since 1993, with AMSA regulating the safe provision of coastal pilotage through licensing pilotage providers and pilots, mandating pilot fatigue management and monitoring coastal pilotage operations amongst others.
- Amendments to the Navigation Act led to regulatory arrangements via Marine Order Part 54 (Coastal Pilotage), followed by multiple regulatory reviews aimed at enhancing safety culture, improving effectiveness of regulatory options and overall continuous improvement.
- The current review of MO54 includes an Industry Reference Group to evaluate practices, regulatory compliance, and safety enhancements.
- AMSA’s regulatory framework demonstrates a functional, commercially competitive model through continuous compliance improvement, enforcing safety standards, and effective communication between industry and regulator.

CAPTAIN VIKRAM HEDE - PILOTAGE THROUGH THE GREAT BARRIER REEF.

- Vikram gave a history of pilotage in the Torres Strat and Great Barrier Reef, the establishment of a pilot service, introduction of compulsory pilotage and environmental protection. Then the eventual establishment of the current 2 pilotage service providers (Auriga Pilots and Torres Pilots).
- Captain Hede then gave an interesting description of the five compulsory coastal pilotage areas indicating pilot boarding areas, passage plans and the routes' unique navigational characteristics. Coastal pilotage in this area can be up to 40 hrs, the longest in the world.

CAPTAIN WARWICK CONLIN – CRUISE PILOTAGE IN THE COASTAL AND REEF ENVIRONMENT.

- Warwick described the distinct phases of cruise ship pilotage from preparation to being onboard and his role whilst on the vessel for extended periods. He stated much of what they do is keeping the cruise ships within the regulations and out of trouble.
- There are 17 cruise trained pilots. Gaining qualifications is the easy part; understanding the complex regulatory regulations is the real challenge.
- Captain Conlan finished his presentation with the onboard edict: we are here to help not to get in the way.

SESSION 2 CRUISE SHIP PILOTAGE

CAPT. PETER LISTRUP – GETTING BIGGER CRUISE SHIPS INTO PORT.

- Peter outlined trends in the cruise industry, including cruise ships seeking new destinations, ports working to attract cruise ships, and the planning required for launching a new itinerary.
- Future port planning involves creating accurate simulations of the port that must be validated by pilots.
- He described the process of developing port and ship models. Additionally, he introduced a new course on the pilotage of cruise ships.

CAPTAIN TROND KILDAL – CRUISE SHIPS & DUAL PILOTS IN AN INTEGRATED BRIDGE.

- Trond, Manager and Senior Pilot at Cairns, outlined the history of cruise shipping in Cairns and navigational challenges for cruise ships in Cairns Channel.
- He explained dual pilot operations at Cairns, covering roles and responsibilities when two pilots are assigned, including conning and secondary pilot duties.
- Pilots on large cruise ships must complete training in simulators, emergency procedures with tugs/VTS, PPU training, BRM training, and the Mentor/Check Pilot course. On-water training components included observations, mentoring, and checks.

CAPTAIN CARL ROBBINS – CRUISE SHIP PILOTAGE IN SOUTHAMPTON, U.K

Carl has been a pilot in Southampton for 17 years and a marine consultant and simulator trainer for 14 years.

- Southampton sees about 9000 shipping acts per year and employs 40 pilots, expecting 1000 cruise ship acts in 2025. 95% of cruise ship calls are turnarounds.
- Carl noted challenges with cruise ship pilotage: increasing vessel size, external forces, BRM, and pilot ladder compliance issues.
- He discussed who has the con during pilotage and the need for pilots to adapt to evolving cruise ship practices while embracing BRM.

SESSION 3 - MENTAL HEALTH AND PEER SUPPORT

DOCTOR KEITH MCGREGOR

Keith commenced the session by presenting an alternative viewpoint on psychological safety. His presentation involved discussion about the peer support network and advice on how pilots can deal with their own mental health.

REVEREND CANNON GARRY DODD

Garry gave an insightful presentation into the excellent and valued work of the Mission to Seafarers, emphasising that pilots are the first line of support if there is a problem onboard. Pilots are the eyes and ears of seafarer welfare.

MARK LE BUSQUE,

Mark, as a leadership coach, talked about the work/life balance myth and his three pillars of life design to align with what is important in your life.

Day Two

SESSION 4 – CRITICAL INCIDENT RESPONSE AND SUPPORT

CAPTAIN JOHN BARKER – ANTICIPATE, ACT, ADAPT. A PROACTIVE APPROACH TO INCIDENT MANAGEMENT.

- Problem Identification: Current incident reviews are reactive, focusing on past events without asking “What if?” or effectively applying lessons learned.
- Initiative: designing a realistic scenario played out on an appropriately manned full mission bridge simulator involving a bulk carrier passing under the Auckland Harbour Bridge experiencing steering failure and grounding.
- Investigation: Capt. Tim Burfoot (ex TAIC) reviewed the simulation, examining pilotage, training, communication, and processes, resulting in 17 actionable recommendations.
- Outcomes: The simulation highlighted risks for stakeholders, prompting changes in SOPs, training, and processes. It reassured stakeholders after the Baltimore Bridge strike incident.

In conclusion it emphasised the importance of proactive risk management, realistic simulations, independent investigations, and structured follow-ups to prevent high-consequence incidents.

DOCTOR PHIL THOMPSON – BMT SHIP AND COASTAL SYSTEMS. EXPLORING ALTERNATIVE PILOTAGE AND EMERGENCY RESPONSE SCENARIOS IN THE DALI-BALTIMORE BRIDGE COLLISION.

- The presentation examined in depth the well documented causes of the accident incorporating ship hydrodynamics and S-100 port hydraulics such as the influence of the Ford McHenry Channel on the accident.
- The incident was recreated on a Rembrandt ship simulator, showing that active escort towage or deliberate grounding could have prevented the bridge collision. It also emphasized the necessity of conducting port risk assessments for bridges or other critical infrastructure.

WENDY SULLIVAN – MEDICAL SOLUTIONS AUSTRALIA.

- Wendy advocated for medical training that focuses on relevant first aid techniques tailored for maritime operations and relevant to the work undertaken. The course includes scenarios based on real-life situations, using case studies and established mechanisms for injury. The scenario sessions take place onboard the launch, using the first aid equipment available. The course issues AMSA recognised certificates upon successful completion.

SESSION 5 – SAFE PILOT TRANSFER

CAPTAIN DAMIAN LAUGHLIN PPSP PILOT/DIRECTOR. ORGANISATIONAL RESILIENCE TO AN INCIDENT.

The presentation used the grounding incident of PPSP's pilot launch Corsair to outline strategies and considerations for enhancing organisational resilience in response to critical incidents. Captain Laughlin focused on numerous factors such as human focused responses, environmental responses, community engagement, legal aspects and operational imperatives cumulating in his four aspects of operational resilience: people, assets, organisational culture and customer service(people).

CAPTAIN STEVE BANKS- NZMPA -PILOT TRANSFER FATALITIES: LOOKING BEYOND THE LADDER.

Rigging of compliant pilot ladders has traditionally been one of the main aims for pilot safety. But further investigation into pilotage accidents and fatalities led to a change of focus for Steve. He gave a sombre account of various pilot fatalities from 2015.

What needs to change:

- Improve transfer practices so the pilot will fall into the sea from height above the launch.
- Establish and regularly verify standards for pilot boats.
- Implement effective MOB systems operable by skipper or coxswain.
- Enhance crew training, including MOB procedures and advanced First Aid.
- Provide PLBs for pilots and deckhands.
- Equip pilot boats with AEDs.

CAPTAIN ALAN STROUD – UKMPA- TRAUMATIC PILOTAGE: HELPING YOUR FUTURE SELF.

Captain Stroud gave an account of the work undertaken by the UKMPA to develop a fit for purpose first aid course, this culminated in the Maritime Immediate Emergency Care Course (MIEC).

The course comprises:

- A check card-based system.
- A one-day course that is refresher approved for STCW elementary first aid.
- Training can be based at the location.
- Offers a dedicated equipment package to support training.
- Implemented across 31 UK ports.

CAPTAIN PASI PALADANIUS – HSEQ MANAGER FINNPILOT

This presentation examined the causes of and recommendations from a pilot launch capsized in Finland. The launch capsized due to a combination of swell height and stern wake waves emanating from a piloted cargo vessel. The cause was attributed to pilot launch stability design, a low reporting culture, increased capsizing risk from stern wake and the crew not being able to evacuate from the vessel once it's inverted. The incident led to a raft of modifications to existing launches. Safety training was enhanced, a new safety culture developed and data collection improvements from the launch.

SESSION 6 – COMPETENCY ASSURANCE AND CHECK PILOTAGE

CAPTAIN JOHN CLARKE – DIRECTOR/PILOT MSWA – EFFECTIVE COMPETENCY ASSURANCE THROUGH THE CHECK PILOT SYSTEM

John's background includes extensive experience in external pilotage reviews, both in NZ and Australia and he has conducted over sixty internal and external assessments over the past decade.

The presentation examined:

- Why check pilotage assessments are undertaken comparing aviation and maritime industry practices.
- The two formats: peer reviews and competency checks and what should be examined to see if the reviews are fit for purpose. John used two case studies where check pilotage practices were criticised. He then gave six examples on how to improve check pilotage and sources of good practice that should be consulted.

ASSOC. PROFESSOR BEN BROOKS – AMC SEARCH: USING BRIDGE SIMULATORS TO SUPPORT MARINE PILOT RECRUITMENT.

Recruitment and selection are an imprecise science. Ben described how they use bridge simulators tailored to specific port provider need and using additional technology, such as eye tracking and galvanic skin response during the exercises to monitor candidates' performance. Their programme can complement interviews and psychometric testing so a port company can have confidence they have selected the best candidate.

CAPTAIN MATT SHIRLEY – PILOT, TRAINING COORDINATOR AND DIRECTOR PORT HEADLAND PILOTS: CHECK PILOT INDEPENDENCE – WHY AND HOW DO WE ACHIEVE THIS?

Matt's presentation gave some interesting observations for the attendees regarding the effectiveness of check pilotage.

- Siloed work practices are inherently prone to drift - where pilots work alone and without oversight after final qualification. This drift leads to a gap between intended procedures and actual practices. Drift occurs in every workplace, it's well documented and is insidiously dangerous.
- Most check trip systems fall short of their intended effectiveness. They are not designed to consider drift. The system is a black and white assessment not designed to gather data or a creation for learning opportunities.
- Therefore, we need an independent auditing system able to evaluate pilots beyond a pass and fail. This isn't new and exists in the aviation industry. By implementing a workable system, as above, and integrated into an already strong safety culture the issues Matt outlined can be tackled; moving our industry towards the high reliability organisations we need to be.

SESSION 7 - INDUSTRY INSIGHTS AND FUTURE OUTLOOK

The final session involved talks from Kell Dillon, General Manager Maritime Safety Queensland. He outlined MSQ's role and responsibilities, pilotage regulatory improvement program and maritime emergency response. Thomas Hough, APAC Senior Meteorologist looking at the Autumn/Winter seasonal outlook and, finally Alison Cusack the Industry and Education Partnership Coordinator – AMC Search – Oceans of Opportunity Scheme.



MENTAL HEALTH AN ALTERNATIVE PERSPECTIVE

AMPI Cairns 2025 Conference Presentation

KEITH MCGREGOR

Director of Personnel Psychology NZ Ltd.

Following the retirement of Marcus Romanic, who has provided valuable psychological training and support for the peer assistance network volunteers, the AMPI Board invited me to take over the role of supporting the AMPI PAN volunteers. I am a registered psychologist based in Wellington, New Zealand. My background includes twelve years as an air force officer and psychologist followed by over thirty years in private practice. My enthusiasm for peer support dates back to 1983 when I liaised with the Los Angeles Police Department to learn about the program they had set up to support police officers and I am currently a support psychologist for the New Zealand aviation peer assistance network.

At the Cairns conference in March this year I presented a talk on a topic of great concern to me – the seeming epidemic of anxiety and depression. The theme of my talk was on an alternative way to view these conditions.

According to the Australian Institute of Health and Welfare: “In any year in Australia, an estimated 1 in 5 people aged 16–85 will experience a mental disorder”. And from the Australian Bureau of Statistics: more than 1 in 6 Australians had an anxiety disorder and 1 in 12 had some form of depression in the previous 12 months. Those of us who grew up in the 1950’s and 60’s are left wondering how have we come to this.

But what if anxiety and depression were not actually disorders? What if there was a different way to understand them? To illustrate this possibility I present two case studies of individuals I have been privileged to help.

The first was David, an elderly man who had been referred by his GP. He was suffering from debilitating anxiety and panic attacks. Anti-anxiety medications had not helped. His wife, Margaret, accompanied him to the appointment. A condensed version of the conversation went something like this:

Psychologist: So, David, what’s the problem?

David: I suffer from anxiety and panic attacks

Psychologist: Yes, your doctor told me that but what is the problem?

David: I just told you, I suffer from anxiety and panic attacks

Psychologist: Yes, you mentioned that but what is the problem?

David: I don’t like it!

Psychologist: I’m sorry, but why don’t you like it?

David: That’s stupid, why would I like it?

Psychologist: Because people pay good money for it. Sky diving, bungy jumping, sports competitions, horror movies. You are getting the same adrenalin rush for nothing. How good is that!

David: Wait, are you saying there is nothing wrong with me?

Psychologist: Well you are just triggering the fight-flight stress response unnecessarily but otherwise you are fine.

David: But why does it happen?

Psychologist: It is just a habit you have got into and now you are constantly waiting for it. The moment you feel tense you try to shut it down and then it just spirals out of control.

David: But what if I get a panic attack?

Psychologist: That’s where your wife comes in. Margaret, the next time you see David heading for a panic attack I want you tell him that he must keep the panic attack going for 30 minutes.

At this point David roared with laughter at the idea of having to try to keep his panic attack going for half an hour. A three year follow-up with David revealed no more panic attacks. When he did occasionally feel anxious he would sit back and enjoy the adrenalin although he did complain that it wasn’t as exciting as it used to be.

The second example was Mike, a university science lecturer. In late October he had set time aside to write the questions for the end of the year exams. Instead, he spent three days huddled up on the couch profoundly depressed unable to even put two thoughts together. Mike had experienced previous bouts of depression. All he could think was that he was a complete failure and was going to have to quit his job.

I asked Mike two questions: How trapped do you feel? How often do feel like curling up in a warm, dark place and only coming out when the sun comes out?

It turned out there had been a change of management and Mike was struggling to cope with the new dean. He felt totally trapped - he couldn’t fight or escape. And he was definitely having trouble crawling out of bed to go to work.

I shared with Mike the theory that depression is a form of hibernation that enables mammals to conserve energy when trapped or when resources are scarce. As a scientist, the idea that his body was just doing what it was programmed to do appealed to him. I suggested a two pronged solution. The first was to test the hibernation theory by spending the coming week curled up in bed forcing himself to remain depressed. The second was to learn techniques to manage the new dean.

The week in bed didn't work. By midday on the first day he was so bored he flagged it away, got up and sorted out the exam questions. He also switched from seeing the dean as "frustrating" to seeing him as "fascinating", which completely changed the way he felt and acted.

Anxiety and depression should never be taken lightly. For David and Mike the symptoms robbed them of enjoyment, adversely impacted their work, distressed their families and destroyed their self-esteem. Anxiety and depression can lead to alcohol and drug abuse, persistent health problems, relationship failures and self-harm. But are they illnesses or successful survival adaptations?



Fear has enabled us to survive as a species. It causes us to remain vigilant to protect us from danger. The opposite to vigilance is complacency. For people working in high risk environments, such as marine pilots, vigilance can help to avoid situations that have the potential to kill or maim.

But fear has to be managed. Under high levels of stress the hormone cortisol can damage parts of the brain that control its release. This can lead to emotional over-reaction to minor frustrations and to shutting down the logical, 'analyse and solve', parts of the brain.

Depression, on the other hand, helps to conserve resources and can provide insights into those aspects of our lives that are causing us to feel trapped. We don't go to a bear that is hibernating and tell it to get out of the cave and start foraging. And yet, as humans, this is what we try to do. Instead of slowing down, adjusting our workload and treating 'hibernation' as valuable mental 'time-out' we keep battling on, beating ourselves up, feeling stressed, anxious and miserable.

Anxiety and depression come to be seen as mental health problems due to two words: should and shouldn't. "I should be able to cope", "I shouldn't be depressed", "I shouldn't get so uptight", "I should be more motivated". Inevitably we begin to feel there is something wrong with us and we need help to fix it. The should and shouldn't mental conversations are important as they become the 'software' that our subconscious mind attempts to make happen. So, what do we do about it? Some of the strategies that David and Mike found helpful were:

1. Understanding that there was nothing wrong with them, their bodies were just trying to protect them from the perceived threats created by the way they talked to themselves
2. Understanding what was happening at a biological level and why it was happening
3. Experimenting with the feelings of anxiety or depression by trying to keep them going for a specified period of time. Not only did they find this difficult but they no longer feared the feelings and regained a sense of control in their lives. Trying to stop the feelings had just made them worse.
4. Developing clear mental pictures of where they wanted to get to – what they saw happening in their lives if they were feeling relaxed, focused and energised
5. Understanding that, just as athletes train in order to change the structure of their bodies, by changing the way they talked to themselves David and Mike could change the structure of their brain to eliminate negative thinking habits
6. Reframing anxiety as vigilance and depression as hibernation. Initially they struggled with this but it quickly became empowering and felt much better than viewing them as disorders.

The techniques outlined in this talk are not new, they date back to Greek times. They work by recognising that anxiety and depression are normal human behaviours rather than illnesses. With the right guidance and support anxiety and depression can be managed to relieve the symptoms, address the underlying causes and allow us to lead fulfilling work, family and personal lives.



CAPTAIN BERNARDO OBANDO, CAPTAIN JOJI TEPAKE, CAPTAIN KEKE GEOB AND CAPTAIN JOSEPHINE CLARK

CAPTAIN KEKE GEOB

PNG's Veteran Marine Pilot

Captain Keke Geob, the oldest known marine pilot in Papua New Guinea, embarked on his maritime journey in 1973 at the age of 20, right after completing high school. Within just three years, his dedication and skill allowed him to command small coastal ships. In 1979, he furthered his education at the PNG Maritime College, earning certification to command 100-metre ships.

After 34 years of diverse experience with various companies, Captain Geob joined PNG Ports Corporation Ltd in Lae on the 13th of December 2007. By 2011, he had achieved his Marine Pilot Class 1 certification, showcasing his extensive experience and competency.

Captain Geob expresses immense satisfaction in his role, emphasising the responsibility and pride he feels in being a key player in the maritime industry's supply chain. His chief marine pilot, Captain Joji Takape, highlights that Captain Geob has recorded the highest number of movements at the Port of Lae since 2024. At 75 years old, Captain Geob continues to love his job, attributing his longevity and success to his passion for the work.

Captain Geob is a proud member of the Australasian Marine Pilots Institute, further solidifying his standing in the maritime industry. His remarkable career and unwavering dedication serve as an inspiration to many in the maritime community.



ACROSS THE DITCH

MATT CONYERS

NZMPA Vice President



KIA ORA KOUTOU!

It's been another half year of significant change for the NZMPA. Following our change of status to an Incorporated Society in mid-2024, our AGM and elections were held in September 2024 at the Christchurch conference. At that AGM, Lew Henderson and Peter Willyams decided to step back from executive roles after many years of dedicated service.

The Executive team sheet now looks like this:

Position	First Name	Last Name	Location
President	Paul	James	Bluff
Vice president	Matt	Conyers	Lyttelton
Executive officer	Colin	Sellars	Tauranga
Executive officer	Matt	Birdsall	Tauranga
Executive officer	Andy	Baker	Whangarei
Executive officer	Richard	Hill	Whangarei
Treasurer	Matt	Dundas	Auckland
Magazine editor	Travis	Welsh	Lyttelton
Webmaster	Phil	Sweeman	Lyttelton

The AGM also gave the team a brief of work for 2025.

As ever, AMPI was well represented at our Christchurch conference, and we are very grateful for your active support and participation in the auditorium and at all the social events. We returned the favour in Cairns and we are currently planning our next away game for Adelaide in November 2025. All being well, the majority of the executive will attend.

The most notable outcome from our Christchurch conference was the publishing of the NZMPA position statement on the use of routine voyage data from pilotage operations. This followed a workshop on the final day of the conference where pilots, marine managers, voyage data analysis service providers, harbourmasters, and the national regulator contributed to the debate.

Our next piece of work is concerning the requirements in NZ for pilots to hold, or have held, a Master Unlimited Certificate of Competency to be eligible for issue of a Pilot's License.

In my experience, there are few topics that will draw such emotive reactions among pilots than this one. So, hold on to your hats – this could be a bumpy ride! There currently appears to be a movement to work around the requirement for a Master Unlimited license by some organisations in NZ. Therefore, the NZMPA has begun discussions with the national regulator to look into the requirements and the wording of the current regulation (NZ Maritime Rule Part 90), and any feasible equivalent qualifications that might apply under certain circumstances.

For the sake of transparency, it is our intent to publish a position statement on this subject in the coming weeks, once we have consulted with our membership and stakeholders. AMPI's position paper on Alternative Pathways will also be used as a reference.

We look forward to seeing you in Adelaide! All our publications including our Good Practice Guides, Position Statements, and our Constitutional Objectives are available to browse or download from our website at www.NZMPA.org

MARITIME COLLABORATION AT CSMART

Pilots and Captains Working Together

RICKY ROUSE

AMPI Director/Deputy President

On a cold and rainy November morning, I visited the Centre for Simulator Maritime Training (CSMART) in Almere, Netherlands. Nestled among modern housing developments, Almere is the Netherlands' newest city, built on reclaimed land that was once submerged under the IJsselmeer Lake. Today, it is home to approximately 250,000 residents and one of the world's most advanced maritime training centres.

I was invited by Antonio Di Lieto, CSMART manager of simulation studies and the author of *Diligent Pilotage: Lessons Learned from the Jolly Nero and Bridge Resource Management: From the Costa Concordia to Navigation in the Digital Age*. Antonio has played a key role in improving collaboration between marine pilots and cruise ship captains, bridging a gap that has caused some challenges in the past.

CSMART, the international training centre for the Carnival Corporation & plc Group, is widely recognised as one of the most progressive maritime training institutions of its kind. Established in 2009, it was expanded in 2016 to include state-of-the-art Wärtsilä simulators, research and development facilities, and a dedicated hotel for trainees. In 2018, it became the world's first Centre of Safety Excellence, designated by DNV-GL.

Each year, CSMART trains approximately 7,000 deck, engineering and environmental officers from across the Carnival Corp brands including Carnival Cruise Line, Princess Cruises, P&O Cruises, Cunard, AIDA, Costa, Seabourn, and Holland America Line. With six full-mission bridge simulators, six part-task bridge simulators, four full-mission engine room simulators, six part-task engine simulators, two electrical workshops and one LNG workshop, the facility operates nearly continuously, running from 07:30 to 23:00 daily.

PORT SIMULATION AND MARINE PILOT COLLABORATION

A significant focus at CSMART is its port simulation studies and familiarisations program, which brings together cruise ship captains, deck officers, and marine pilots to define safety margins, good practice and manoeuvring strategies for specific ports. These simulations provide a crucial bridge between theoretical knowledge and real-world application, allowing mariners to safely test manoeuvres in complex environments before executing them at sea.

The importance of such collaboration was demonstrated during my visit when a team of Aberdeen Marine Pilots, with over 50 years of combined experience, participated in a simulation alongside cruise ship captains, staff captains, and nautical directors from AIDA and Costa. These sessions enable pilots and captains to work side by side, sharing expertise and developing a mutual understanding of vessel behaviour, port conditions, and environmental factors such as tidal flows and wind effects.

Captain Andy Hall of the Queen Mary 2 recounted how the port simulation work for Cork, Ireland, gave him confidence ahead of the ship's maiden voyage there. When the local pilot boarded for the first time, they were already familiar with each other and the agreed-upon procedures, creating a seamless, cooperative approach to navigation.

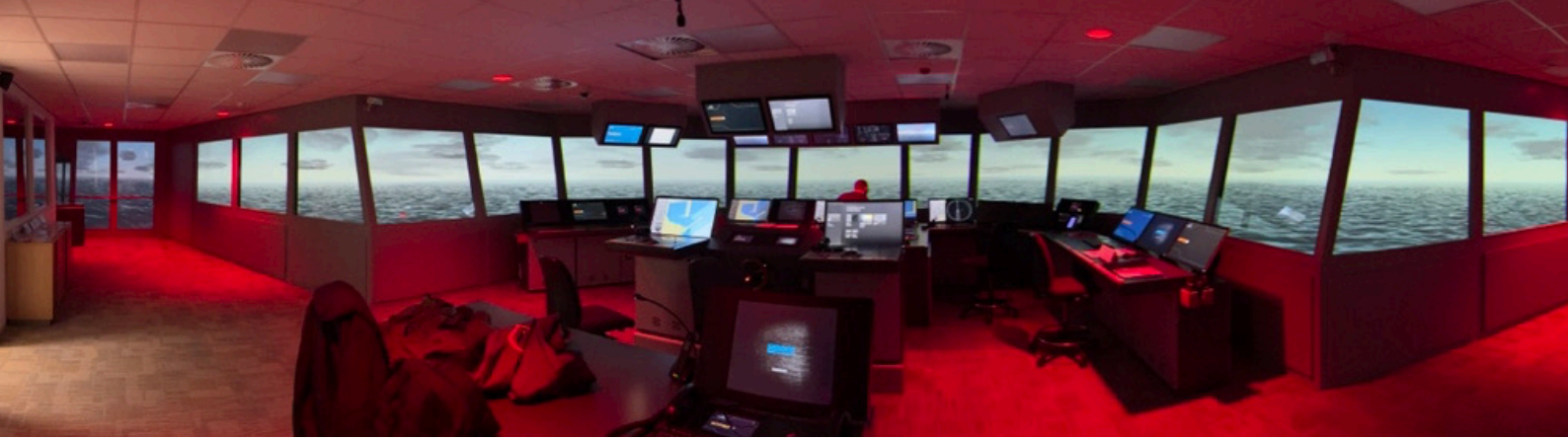
CSMART's commitment to data-driven decision-making is evident in its approach to port simulation. High-density Electronic Navigational Charts (ENCs) and high-resolution hydrographic survey data are imported into the system to create detailed models of ports. These models include hydrodynamic tidal flows and high resolution bathymetric data. The fidelity of these simulations ensures that pilots and captains are working with conditions that closely mirror real-world scenarios.

THE EVOLUTION OF BRIDGE RESOURCE MANAGEMENT (BRM)

CSMART has played a pivotal role in the evolution of Bridge Resource Management (BRM), a concept that has transformed maritime safety and efficiency over the past few decades. The development of modern BRM training in the cruise lines can be traced back to the efforts of industry visionaries such as Kari Larjo, Hans Hederström and Ravi Nijjer. Their work laid the foundation for a role-based approach to bridge team operations, emphasising shared situational awareness, clear communication, and safety leadership.



Several years ago, Carnival Corporation introduced a BRM model that initially caused friction with the marine pilot community. The primary point of contention was around the role of the pilot within the bridge organisation. Antonio Di Lieto and his colleagues have since worked to improve dialogue and collaboration, advocating for a flexible approach that respects the expertise of pilots and bridge teams, by focusing on a common pilotage plan with clear safety margins. As a result, BRM at CSMART now emphasises adaptability, recognising that the optimal organisational structure during pilotage varies depending on jurisdiction, port conditions, and operational context. This is particularly important in Australian jurisdictions where legislation mandates that the pilot has the conduct of the vessel inside compulsory pilotage waters.



REAL-WORLD APPLICATION OF SIMULATION STUDIES

Beyond individual training, CSMART plays a crucial role in itinerary planning and safety due diligence for Carnival Corporation fleet. Before cruise lines commit to new itineraries, simulation studies help determine the feasibility of bringing large vessels into specific ports. Once the study is carried out, the next step is to make sure a wider population of Captains and Pilots feel comfortable to make the port call. This is achieved by recurrent Port Familiarisation Training simulations based on the results of the study.

Captain Marcin Banach, Director of Nautical and Security Operations for Carnival Maritime, highlighted the importance of the Port Familiarisation Training program. For example, recent trials in Aberdeen using an AIDA Sphinx Class vessel provided an opportunity for Captains and local Pilots to build confidence around a common pilotage plan ahead of the forthcoming cruise season. These studies do not aim to establish metocean limits for the ports, but are instead used to establish agreed safe margins, good practice and reasonable precautions to manage navigational risks.

Hydrodynamic flow data, high resolution bathymetry, and accurate 3d modelling all contribute to the fidelity of these studies. The simulator ship models are built using data from tank tests, sea trials, and are fine-tuned using feedback and data provided by experienced masters to replicate real-world handling characteristics. In the case of newbuilds, simulator ship models based on tank testing allow captains and pilots to familiarise themselves with a vessel's behaviour long before it enters service.

THE FUTURE OF TRAINING

One of the key developments underway at CSMART is the shift from standardised training courses to training programs based on a corporate competency-based framework. The so-called Officer Career Pathway, being conceptualised under the leadership of CSMART Managing Director Mark Jackson, will generate training and assessment programs tailored to officers' specific career stages and skill levels, ensuring that learning is relevant and practical.

CSMART stands as a global leader in maritime training, bridging the gap between simulation and reality. By fostering a collaborative environment where cruise captains and marine pilots train together, it enhances safety, operational efficiency, and mutual understanding.

For the Australian marine pilot community, the lessons from CSMART reaffirm the importance of joint training initiatives. The ability to simulate port approaches, discuss good practices, and refine BRM methodologies in a controlled setting translates directly to safer, more efficient operations in pilotage waters. The continued evolution of maritime training—driven by institutions like CSMART—ensures that the next generation of mariners are better equipped than ever to work confidently with pilots in our complex pilotage waters.

As the industry continues to grow and evolve, the role of simulation in maritime training will only become more critical. CSMART's success serves as a model for how training centres worldwide can integrate cutting-edge technology, data-driven insights, and collaborative learning to enhance maritime safety and excellence.

For more information using simulators in training, please visit the AMPI website where you can download the AMPI Position Paper – PS-05 – Use of Simulators in Marine Pilot Training.

QUOTE FROM RAVI NIJJER

“Australian pilots have had an indirect but significant influence in the establishment of CSMART Almere. In 2007 following 4 high profile and expensive accidents Captain David Christie from Princess Cruises was assigned the task of improving safety in the fleet. Captain Christie having heard of practical developments in the implementation of BRM in Australia came to the country and witnessed pilotages in the ports of Brisbane, Sydney and Melbourne. (At that stage the BRM programme as it was referred to in Australia incorporated 11 years of development led by the pilots). The way that the pilotages witnessed by Captain Christie were conducted influenced his decision of recommending a break from the past and establishing CSMART Almere to provide fit for purpose and up to date training.

In 2009 CSMART Almere was inaugurated and training commenced. It proved to be so successful that in 2016 the much enlarged €75 million training facility Arison Center for Maritime Training also at Almere was inaugurated.”



SMARTSHIP UPDATE

ENHANCING OUR EMERGENCY TRAINING

In marine operations, understanding and managing human factors is crucial for improving safety, performance, and efficiency. In simulated emergency training, the technical aspects of an emergency can be faithfully represented. However, these crucial human factors can be harder to replicate.

Smartship Australia has been working with a number of Australian and New Zealand ports to enhance Emergency simulation training. These integrated emergency scenarios now include local VTS operators who create an additional layer of complexity and realism within the training environment.

During the simulation, VTS interacts with the Pilot to provide an engaged result. VTS can participate either through on site or through remote casting of information and communication.

This approach has been working well, providing both Pilots and VTS operators with broader insights into decision making, situational awareness and enhanced teamwork during an emerging event. It has also given Pilots and VTS operators opportunity to improve their understanding of each other's procedural operandi and how they can share the workload to best achieve the common goal of maintaining safe operation. It has also led to procedural updates to achieve better resilience against failures.

Smartship Australia is looking to extend this approach to other ports as part of its commitment to continuous improvement of services.

KEEPING ABREAST OF CUSTOMER EXPECTATIONS

As many of you will be aware, Smartship Australia regularly surveys its customers to better understand such attributes such as overall satisfaction, relevance, and customer preferences, with the ultimate goal of improving our

services and the customer experience. A cursory study of marketing literature or even your own experience indicates that such methods are often criticised when participants believe that the surveyor is not really listening or going through the motions to achieve a pre-determined outcome.

Director and Principal Instructor, Peter Listrup, noted that Smartship Australia strives to overcome these shortcomings by encouraging participation by keeping the surveys on point and short and always conducting the surveys after service fulfilment. Most importantly, don't be defensive about survey results and use them to actively engage in service improvement.

At Smartship Australia, we discuss survey results at the quarterly quality meeting and ideas canvassed to address any shortcomings in service.

Peter noted that even though Smartship Australia consistently scores highly for both its short courses and bespoke projects, there is always scope to improve. Achieving high service quality is a never-ending journey and everyone at Smartship Australia has a key role to play.

IMPROVEMENTS TO SIMULATION IMAGING

In early August 2024, the existing projector array for Smartship Australia's secondary full mission bridge (FMB2) was replaced with a state-of-the-art high-definition simulation-based projector array. Smartship Australia partnered with Barco and ProAV to design and implement new array which provides visuals across 25 metres of screen curving approximately 240 degrees. The new array significantly improves the visual aspects of the simulation experience.

Smartship Australia is now progressing with a similar project for the projector array in its primary full mission bridge (FMB1) and expect that this project will be completed by the end of June 2025.

AUGMENTED REALITY TAKES SHAPE

Smartship Australia's first augmented reality marine simulator is now operational and has been integrated into several training programs. The 360-degree "green room" arrangement is the first of its kind for marine simulators.

The deployment of SimFlex XR at Smartship Australia marked a significant advancement in how vessel masters refine their skills in a risk-free, fully immersive environment. SimFlex XR was designed to enhance realism and accessibility while reducing capital expenditure and operational costs, such as power consumption. It is an evolution of Force Technology's already established SimFlex4 platform.

The newly installed simulator features a full bridge setup, complete with interactive controls that mirror real vessel behaviour. The platform offers high-fidelity visuals, a 360° spherical field of view, and the capability to integrate real-time propulsion and hydrodynamic responses.



Department of Transport and Main Roads

Maritime Safety Queensland

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- Mentor Pilot training
- Tug Handling

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**Queensland
Government**

AMC SEARCH

Celebrating 40 Years at the Helm

AMC Search celebrates its 40th anniversary this year and in that time, we have built strong relations with AMPI, its members and the wider pilot community.

Our relationship with the pilot community is built around collaboration to find solutions and provide services that are focused on the safety and efficiency of maritime operations.

During the last forty years, we have developed a pilot training and consultancy program at the AMCs world class Centre for Maritime Simulations and built a team of industry leading expertise in key areas including pilot recruitment, whole of port emergency preparedness, AMPT, Check Pilotage, BRM training and port development studies.

In this article, we provide an update on our services that have been developed over the last forty years

PRE-EMPLOYMENT SCREENING SERVICES FOR NEW PILOTS

Recruiting the right pilots is crucial for the safety and efficiency of maritime operations.

AMC Search offers pre-employment screening services for new pilots, utilising world class techniques based on extensive recruitment and human factors research.

We are proud to have Associate Professor Ben Brooks leading this program.

Ben is a human factors specialist who has been perfecting his work with pilots for well over a decade and is highly regarded in the pilot sector.

Our comprehensive screening process, guided by Ben's expertise, helps ensure that you recruit the best candidates, equipped with the necessary skills and attributes, with a focus on non-technical skills, to excel in their roles at your port.

By leveraging our expertise in human factors and recruitment, we can help you build a team of highly competent and reliable pilots that meet the specific needs of your organisation and port conditions.

CHECK PILOT COURSE

This high demand course is delivered by Associate Professor Ben Brooks, and it has been designed for marine pilots working as Check Pilots and includes elements on designing or improving current checking systems.

Ben, along with our Simulation and Digital Services team facilitate course delivery in a hybrid style that includes online components and 2-days of structured simulations to build and evaluate practical skills.

In our AMSA and Transport Safety Victoria Approved course we aim to give you the knowledge and skills to create and apply extremely effective tools to use to make your checking process as good as it can be.

This will support your organisation's journey towards high reliability and an ultra-safe system of work.

EMERGENCY AND CONTINGENCY TRAINING IN THE SIMULATOR

In the ever-evolving maritime industry, preparedness is key.

AMC Search is proud to facilitate Emergency and Contingency Training at the state-of-the-art Centre for Maritime Simulations at AMC.

The simulations prepare maritime professionals for a wide range of emergency scenarios, based on port risk assessments and previous incidents, ensuring they are equipped to handle unexpected situations with confidence and competence.

Our advanced simulation technology provides a realistic and immersive training environment, allowing participants to practice and refine their skills in a controlled setting.

PORT DEVELOPMENT SIMULATION PROJECTS

As ports around the world continue to upgrade and expand, the need for precise and effective planning is more critical than ever.

AMC Search is at the forefront of this development with our Port Development simulation projects.

We work closely with customers who are upgrading or building new port infrastructure, providing detailed simulations that help in planning and decision-making processes.

Utilising our in-house area model making team of Kongsberg software specialists, our simulations offer critical insights into the potential impacts of new developments, anchorage points, mooring analysis, and more, ensuring that projects are completed efficiently and effectively.

Unlike any other port development service in Australia, AMC Search can combine this with our Naval Architecture capabilities, that can deliver additional insights to the use of and relevant design of new vessels operating in new port environments.

IN-HOUSE AREA AND SHIP MODELS MAKING CAPABILITY

To complement our Port Development work, AMC Search boasts an in-house Area and Ship Model making capability, allowing us to create highly accurate models for a variety of applications.

We can produce models for external clients who operate Kongsberg powered maritime simulators, including Polaris and K-Sim. One of our recent models is the TRAnSverse Tug, which is currently being used in Svitzer's Simulator in Newcastle, to train the vessel masters in its use before its arrival later in the year.

Our expertise in model making ensures that clients receive high-quality, precise models that enhance their simulation and training programs.

Whether you need models for training, research, or development, AMC Search has the capability to meet your maritime simulation needs.

NAUTICAL NEXTGEN

Finally, in this special anniversary year, we are also ramping up our investment in the next generation of maritime professionals.

For the last 3 years, we have been investing in a student recruitment campaign to help re-build student numbers at the AMC.

Through our industry partners, we have invested \$500K in a promotional campaign targeting Year 9-12 students around the nations promoting maritime careers and education opportunities at AMC.

This year we have ramped things up, seeking support from our Alumni and industry partners to help out directly in our campaign by volunteering to visit schools and represent our sector at career expos and to deliver school talks about our industry.

We would love to hear from you so if you have some spare time and wish to participate in the campaign, please reach out to our Industry and Education Partnership Coordinator Alison Cusack on alison.cusack@utas.edu.au and join the campaign!

JOIN US AT AMC SEARCH

At AMC Search, we provide Australia's premier training and consultancy services to the maritime industry.

Our team of experts are committed to helping you achieve your goals; whether it's through advanced simulation training, port development projects, or pilot recruitment services, we invite you to explore our offerings and reach out to see how we can support your maritime operations.

For more information about AMC Search Maritime Pilot training courses and consultancy services, please visit our website www.amcesarch.com.au/simulation or contact us directly at amcs.business@utas.edu.au

In our fortieth year, we look forward to helping you navigate the future of maritime operations.

40 Years

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ALERTNESS MANAGEMENT

What to do when we can't shake that sleepiness...

DR MATTHEW J W THOMAS

Director Westwood-Thomas Associates and
Deputy Director Appleton Institute CQUniversity

Given the 24/7 nature of maritime operations, fatigue is an inevitable risk. Even with the best intentions, and the kindest work schedule, there will be times when we find ourselves struggling to maintain alertness. From the extreme of fighting to keep our eyes open and our head upright, through to the more subtle impacts of just not bringing our "A game" to the bridge, we have all experienced issues with alertness. So, what can we do to pick ourselves up and ensure we still operate safely?

THE BASICS – WHAT MAKES US SLEEPY?

Sleepiness is driven primarily by two main factors. First, our circadian rhythms of alertness influence sleepiness, which are inherently linked to the light-dark cycles of the outside world. Very simply, we are designed to be awake and alert during the day and asleep during the night. Our lowest points are the "Window of Circadian Low (WOCL)" during the early hours of the morning, as well as a smaller dip in alertness in the early afternoon. These are natural periods of low alertness, where we are designed to feel sleepy. Second, there is a homeostatic process, which drives sleepiness as a function of being awake. Simply, we get sleepier with more wake we accumulate, either by being awake for long, or through not getting enough sleep and carrying a "sleep debt". Our bodies seek equilibrium, and when the ratio of wake and sleep (nominally 2:1) gets out of whack – alertness suffers – and we struggle with sleepiness. The circadian rhythms and homeostatic processes usually work together, but when we work odd hours, things get all over the shop, and we can experience sleepiness when we might least expect it.

WHAT CAN WE DO ABOUT IT?

Obviously, working at reduced levels of alertness is not ideal, and comes with the potential for impacts on productivity and safety. So obviously, better not to work fatigued... However, on occasion we have all be caught off guard with little option other than to complete a job. The good news is that there are indeed effectively strategies for managing our alertness.

SAFE USE OF STIMULANTS

While we might not have access to all the "good stuff" that historically has been used in certain military environments, caffeine remains the most widespread stimulant used, and these days is available in a variety of tasty formats. There is a large body of scientific evidence to support the use of caffeine as an alertness management strategy. And as an added bonus, it is unlikely to be implicated in you getting "trigger happy" and inadvertently shooting your colleagues on the bridge, as has been the case with amphetamine use in the military. Our response to caffeine is individual, so find a "dose" that works for you. Also, caffeine has a relatively long half-life, so be careful of its impacts on your sleep after the job. It might actually make fatigue worse in the long run if it stops you getting good sleep. But at the end of the day, a single dose of caffeine can result in improved alertness.

DON'T FORGET TO EAT AND DRINK

Maintaining adequate sustenance is an often overlooked component of the alertness equation. While a quick sugar hit might seem to perk us up, it is actually foods with a low glycaemic index (long slow release of energy –

think nuts, dairy, whole grains, fruits and vegetables) that can assist in sustained energy and improved focus and concentration. Just as important is hydration. Even an hour or so on a warm bridge after the energy expended during boarding can lead to moderate dehydration. As a rule of thumb, for every percent of dehydration you knock off a couple of percent of cognitive performance. The impacts quickly add up. Simply topping up your hydration can improve alertness and performance.

SHINING A LIGHT ON ALERTNESS

There is good scientific evidence that highlights the role of light in alertness. Although this will impact your eyes' adaptation to the dark, and external visibility, spending some time under a burst of bright light can certainly pep you up. For a short term effect, any bright light will help – with the blue light spectrum having influence on our circadian rhythms being a different topic altogether.

PHYSICAL ACTIVITY

A brief bout of moderate exercise (think walking a few of flights of stairs) has significant benefits in both alertness and performance, although the effects can be short lived. Various studies have explored exercise from 30 seconds to 10 minutes, and most studies demonstrate positive effects. No harm in coupling this with some fresh air and cold wind on the wings. Even just getting up and walking around, or a few stretches, can be beneficial. The bridge crew might look at you strangely if you crack a few star-jumps – and suggesting to the Master who is nodding off in the corner that they give you 20 burpies might not be great for BRM – but you never know.

TEAMWORK IS DREAMWORK

Good BRM is not just a feel good exercise, it is actually an excellent fatigue management strategy. In our research looking at fatigue countermeasures, we often came across teamwork behaviours that stopped fatigue-related errors leading to impacts on safety. We invented the term “fatigue proofing” to describe all the small but really important things that good teams do to manage their fatigue. No harm in flagging fatigue during the MPX as something to keep an eye on if the pilotage occurs during “zero-dark-thirty” – ask how the bridge team are travelling and open the door to keeping an eye out for each other.

FINDING WHAT WORKS FOR YOU

Alertness management strategies often work best in combination – and what works for someone else might not work for you. Some reasonable advice would be to experiment and find what works best for you. The fatigue management system in your operation should already be using validated a sleepiness or alertness scale (if not – we need to talk). A useful trick is to print this scale on a card and score yourself every 30 minutes across every job. Build a bit of a profile of your own alertness/sleepiness across the day and across your weeks of work. When you start to dip, try a strategy and make a note of how well you are travelling 30 minutes

later. Caffeine might give you a boost during day jobs, but exercise might work better for you at night. Data-driven fatigue management at the personal level!

SOME FINAL WORDS...

In this article we haven't got into the strategies you can use to maximise sleep between work tasks – exploring this in detail is for another time. However, we can't ignore the fact that the primary alertness management strategy is ensuring you are regularly getting enough sleep. As we often say – at the end of the day, the best fatigue management strategy is to get into bed and close your eyes!

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SCAN TO FIND OUT MORE

WING ASSISTED PROPULSION

Sailing for Efficiency

KATE DELISKY

On October 9th, AMPI Directors Kate Delisky and Thomas Hilton attended an information session on Wing Assisted Propulsion (WAP) technology, an emerging solution aimed at reducing emissions in the maritime industry.

As part of Union Maritime's decarbonisation goals, 14 new tankers are being constructed, each equipped with WAP technology. This initiative involves collaboration between Union Maritime, Bar Technologies, and ship management groups Synergy Maritime and Anglo Eastern.

KEY POINTS:

1. DECARBONISATION AND EMISSIONS REDUCTION

- Wind Assisted Propulsion is one of several technologies being explored to reduce fuel consumption and lower emissions. This approach is becoming increasingly significant, with limited alternatives available, as LNG may only sustain ships until around 2040 with a modest 15% emissions reduction.
- Other potential alternatives, such as biofuels, are more likely to be allocated to aviation, and ammonia and methanol fuels are still not market-ready.

2. SYNERGY MARITIME'S BROADER EFFORTS

- Synergy Maritime is actively working on emission-reduction strategies, including low-friction paint, ducted propellers, and the installation of energy-efficient LED lighting across its fleet.

3. TYPES OF WIND ASSIST TECHNOLOGIES

There are four primary types of wind assist systems:

- Ventilated Foil Systems
- Kite Sails
- Wing Sails (as developed by Bar Technologies)
- Rotor Sails

SPECIFICS ON WING SAILS:

DESIGN

The high lift rigid wings will be 37.5m tall, the core structure 10m wide with two 5m flaps on either side. Either two or three wings will be installed on each vessel. The sails have 3 modes. Active, active feathered and passive feathered. Active position is the wings deployed and working to provide lift. Active feathered position is with power and will follow the wind to keep the sail completely neutral. If there is no power, the sails will be in passive feathered mode and the sails will move to a neutral position and then weather vane (free rotate).

DEPLOYMENT & OPERATION

Deployment and folding takes about 20 minutes per wing. Wing sails are fully automated and integrated with the ship's controls. During large rudder movements or crash stop requests the sails will position to "active feathered" neutral effect mode. The sails have 100% redundancy and can also be manually operated in case of sensor failure or total blackout. Sails can be folded in winds up to 50 knots with a combined sea state of 6 (or more wind in less sea state). The sails can withstand winds up to 100 knots in a neutral position. Bar technology WAP's are already installed on two bulk carriers. The Berge Olympus (210k DWT) and Pyxis Ocean (81k DWT). Bar Technologies report the wings have minimal operational or maintenance requirements. Simple greasing and hydraulic maintenance requirements will form part of the ships planned maintenance regime. Planned service intervals will be every 5 years.

CARGO & BERTHING

Wing sails have minimal impact on cargo operations. The folded sails sit 5m above deck in the stowed position and do not impede mooring operations. Hatch covers on bulk carriers open below the sail. However, certain berths may present challenges due to space constraints with ship loaders limiting berthing to just one side of the ship. In terms of berthing, sails do not obstruct views along the ship's side.

IMPACT ON NAVIGATION

Generally, wings are lowered in high traffic areas and for all pilotage movements. Some companies will likely have a policy that wings are only deployed during sea passages.

When the wings are deployed, they will obstruct visibility, which does not meet SOLAS requirements for safe navigation. To address this, high-quality day/night infrared (IR) CCTV systems are required, offering better visibility than the human eye. These systems are already approved by some classification authorities already (for example DNV and Lloyds) and integrate with AIS and radar, though there is still the challenge of ensuring comprehensive coverage, particularly in complex environments. A PTZ camera will also be installed on the foremast for operation by the OOW.

Traditional radar coverage may also be impacted by the steel mast section of the sails blocking radar signals. While some authorities have approved the use of an additional X band radar on the foremast along with AIS technology to mitigate visibility issues, ensuring full integration of WAP systems with navigational aids is key for compliance. There is still work to be done to ensure regulatory approval of these systems in all jurisdictions.

Wing sails may also obscure certain navigation lights, particularly the forward mast light, which is crucial for signalling a ship's position and movement to other vessels. Although the IMO has deemed this acceptable in some instances, ongoing discussions about the best way to ensure that these systems fully comply with global standards are important for industry-wide adoption.

FUEL & CO2 SAVINGS

Each wing can save at least 1.5 tons of CO2 per day, with payback periods ranging from 5 to 9 years, depending on the ship's route. This timeline, although reasonable for some, may deter companies looking for faster returns on investment, especially with fuel costs fluctuating and other emission-reduction technologies competing for attention.

MANOEUVRABILITY & WINDAGE

Wing sails have a negligible effect on the vessel's manoeuvrability, with minimal differences when comparing old and new manoeuvring diagrams. When lowered, they increase windage by about 15%. This can affect ship stability and performance in high winds or challenging sea conditions, making it essential to factor in the additional wind resistance during voyage planning.

POWER AND AUTOMATION DEPENDENCY

Although the system is designed to be fully automated, with manual overrides available, it still depends heavily on sensors and electronic controls. A sensor failure can disable the automatic mode, requiring crew intervention. The system's redundancy mitigates risks, but reliance on technology always poses potential operational challenges.

INSURANCE AND CLASSIFICATION SOCIETY APPROVALS

WAP systems may face additional scrutiny from classification societies and marine insurers, who could impose requirements related to system redundancy, automation, and safety. Full certification and approval from these bodies are essential for the widespread deployment of WAP technology, as any incidents or accidents related to system failures could lead to regulatory reviews or changes in operational standards.

For more information on Bar Technologies and wind propulsion systems, please visit:

- Bar Technologies
- Nautilus Shipping - Wind Propulsion Systems



IMPA SAFETY MONTH

Thank You for Participating

May 2025

A sincere thank you to all the pilots who participated in the 2025 IMPA Safety Survey. Your contributions continue to drive meaningful change in our industry and help protect the lives of those working at sea.

Since 2007, the anonymised data collected through the survey has informed critical safety initiatives, supporting concentrated inspection campaigns (CICs), revisions to SOLAS Regulation V/23, and the development of new mandatory performance standards for pilot transfer arrangements.

The IMPA Safety Survey remains one of the most important tools we have to capture the lived experience of marine pilots. Thank you for taking the time to be part of it, and for helping to keep safety at the forefront of our profession.



RELAX – OBSERVE – CONFIRM

BY TOM HILTON

Many thanks to Shane Tobin, CEO UPRT
(www.uprt.com.au)

Startle and Surprise --> at first glance these two words appear similar. Shock, scare frighten, astonish, amaze, disbelief – all sort of similar right? The dramatic feel of these words extends to causing aviation accidents over the years. Each effect can start a sequence of reactions within the pilot (physiological, cognitive and emotional) that can lead to decreased performance at times when performance is needed most. Aviation doing what aviation does, they investigated startle and surprise, broke it down and have put measures in place to train aviators against it. Once again, there are lessons for us that are powerfully relevant to Marine Pilots in high stress situations. Note: research so far has been done for the aviation context, but we'll do our best to extract some lessons for Marine Pilots.

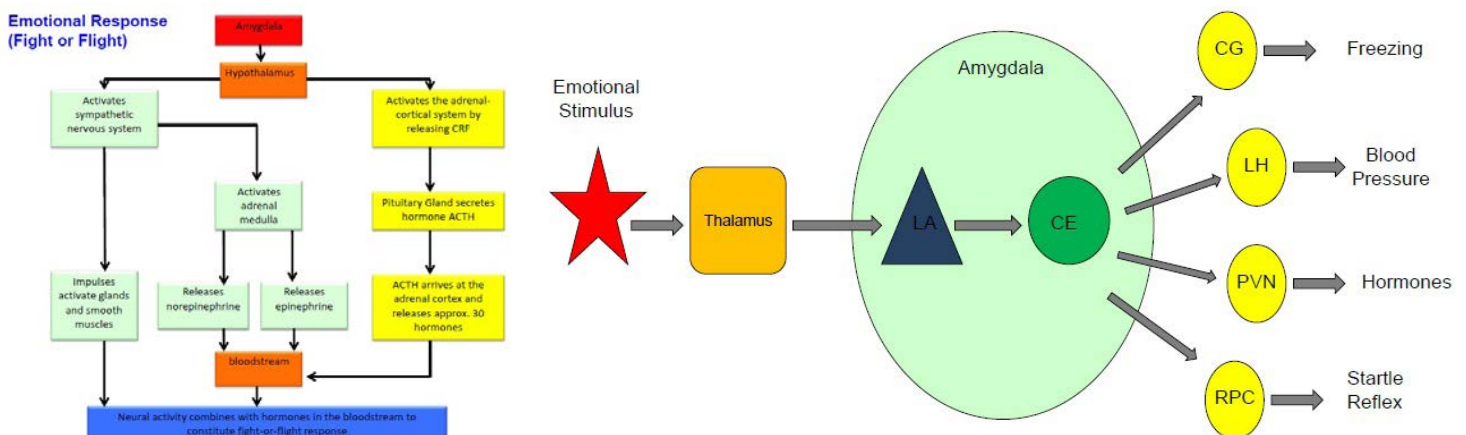
So, in a stress context, what is startle and surprise?

Startle – the Civil Aviation Safety Authority (CASA) defines 'startle' as "An uncontrollable, automatic muscle reflex, raised heart rate, blood pressure, etc., elicited by exposure to a sudden, intense event that violates a pilot's expectations." A strong 'startle' sends a signal straight to the brain which then elicits several responses to the body which can impair performance for up to 30 seconds. Essentially, it is information overload that can trigger a 'fight or flight' response.

Surprise – CASA defines 'surprise' as "An unexpected event that violates a pilot's expectations and can affect the mental processes used to respond to the event." Or in another way, surprise is a mismatch between expectation and observation, forcing the pilot to change his/her understanding of the situation. The pilot now 'doubts' what they are experiencing, they need information, context and confirmation to reconcile what is happening.

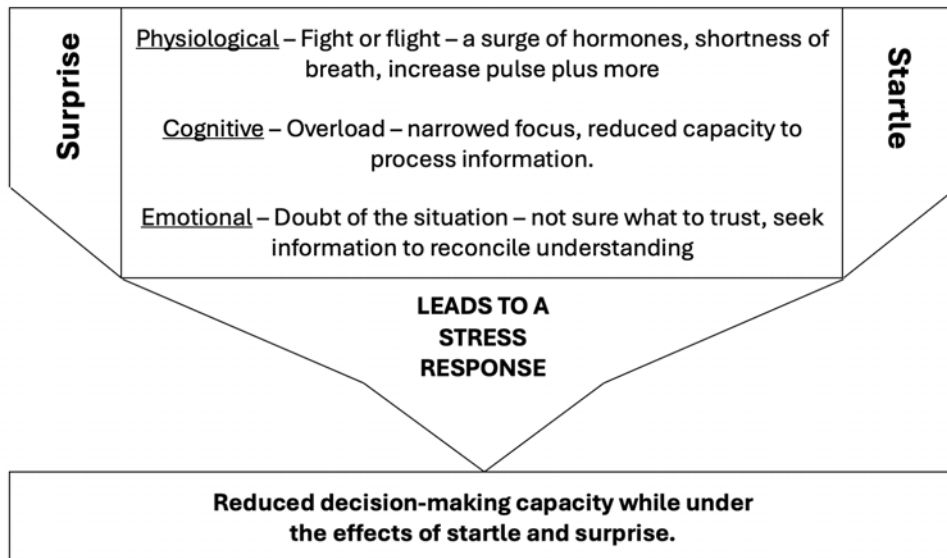
So, 'startle' evokes a strong physiological effect and 'surprise' makes us doubt what we perceive. The magnitude of the effect on the pilot will vary depending on many factors. Fatigue and sleepiness, overall health or illness, pilot experience and training, the current demands on the pilot (piloting workload or 'residual attention'), plus anything that may reduce the performance of the pilot at the time. This leaves less free mental capacity to process the situation and if fear is created, this can invoke a full stress response.

Reading those definitions and the effects, it is clear that startle and surprise may occur at any time during a marine piloting, reducing the decision-making ability and possibly increasing errors. Quite likely the pilot will be hit with a combination of both effects, an overload of information (startle) and uncertainty with what is happening (surprise).



The Effects of Startle on Pilots During Critical Events: A Case Study Analysis
Martin, Murray, Bates
Griffith University Aerospace Strategic Study Centre
Brisbane, Australia 2012

Source: The Effects of Startle on Pilots during critical events: A case study Analysis
Author: Martin, Wayne, Murray, Patrick, Bates, Paul. 2012
Griffith University



Looking at the above diagram, the effects are a cascade leading to reduced performance. This is human factors issue, and it must be possible to short circuit the process to keep the pilot operating at a more efficient level. Aviation has introduced 'Upset Prevention Recovery Training' for airline pilots (UPRT) to try to achieve just that.

CASA's guidance on UPRT breaks training down to 3 objectives. Please note the training is aimed to return an aircraft to stable flight from an 'upset' condition/event whether induced by equipment, environment, or the pilot. While there is some divergence here to Marine Pilotage, the sequence to recovery is still useful.

Very briefly, the Aviation response to an Upset looks like:

<p>1. Upset awareness – being able to identify when the aircraft is 'upset', Recognise the warning signs.</p>	<p>2. Upset Prevention – theoretical knowledge of aircraft dynamics, manage human factors (limitations), practiced upset recovery techniques.</p>	<p>3. Upset Recovery – recognise the type of upset and apply correct response, reduce load on aircraft, manage power / pitch and bank, monitor airspeed etc.</p>
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In studies with aviation pilots, (NASA) has tried to differentiate between the automatic performance of highly practiced skills (which are less susceptible to stress impairment) and dealing with "effortful performance of less familiar tasks that draws heavily on attention and working memory". NASA goes on to say,

"... emergencies almost always require interweaving highly practiced tasks with less familiar tasks, novel situational aspects, and uncertainty. Thus, in an emergency situation, overall demands on attention and working memory are very high at a time when these limited cognitive resources may be disrupted by anxiety; consequently, tasks such as decision-making, team performance, and communication that depend heavily on attention and working memory are likely to be impaired."

The time when you need your full acumen to overcome a modern stress event, your brain has sent you into state of high alert and reduced your ability to best deal with the situation at the complex level required. Unfortunately, marine pilots do not have their hands directly on the controls where automatic performance can assist (like aviation pilots) and any response will rely on 'decision-making, team performance, and team communication'. High level stuff!

This is where the aviation pilot response and the marine pilot response can differ. The aircraft pilot will 'reset' the plane – wings level, stick neutral, maybe increase thrust. For an event in a narrow bend, the marine pilot must communicate their 'solution' to the bridge team and/or tugs, while affected by startle and surprise. But ultimately, dealing with the human factors / physiological response is the same. Recognise and deal with the stress > assess the information as calmly as possible > respond appropriately.

In a study titled "As easy as ABC" the acronym ABC – Aviate, Breathe, Check, was trialed and found to be more useful to aviation pilots than previously tested mnemonics. This study echoes the 3 CASA training requirements for UPRT.

- **Awareness** (Aviate) – prioritise current safety / don't make things worse. Being aware that there is a physiological response in play allows the pilot to step back from the moment and return to a better decision-making state.
- **Prevention** (Breathe) – manage the mental stress and the physiological response. This also incorporates fatigue management, competency, planning and adherence to procedures. Avoid getting caught up in the stress response when decision making may be impaired.
- **Recovery** (Check) – troubleshooting, confirm and decide on the best course of action when in a better frame of mind.

Another method developed by NLR, developed the 'Reset Method' which entails the following,

1. Announce: "Reset";
2. Take physical distance: pushing one's back into the back of the seat;
3. Perform a simple breathing technique: taking one or more deep abdominal breaths, and exhaling slowly;
4. Relax any tension in muscles;
5. Check the wellbeing of one's colleague and
6. Systematically build situational awareness by calling out observed indications of the problem.

The crucial element here is that addressing the mental stress may be helpful before taking action. In the book 'The Resilience Shield' written by 3 ex-SAS personnel (Pronk, Pronk and Curtis, 2021), they detail techniques to return to a better state of mind

(for making decisions). Even after extensive combat experience, box breathing (breath out first -- inhale 4 seconds, hold 4 seconds, exhale 4 seconds, hold 4 seconds, repeat) is one technique they still use for stress situations today. It is quick and effective and may reset the startle response. It is an excellent book and well worth the read.

Note, the aim is to defuse the human factor response to return the pilot to a productive decision-making state. This is not advising new 'emergency response procedures', more that there should be an understanding of the human factors' response during a high stress situation that may hinder proper decision making at the time.

So, continuing with the 3 stages to recover, the marine pilot response might look a little different (we have no stick to control), but the general process is the same.

Unfortunately, this article cannot detail precisely how to respond to a Marine Pilot startle or surprise event as there is no specific or mandated training at this time. Some Australian Maritime Training facilities are adding human factor layers to their emergency response training which is very encouraging. To date, recognising the physiological response to a stress event has been hard to 'train' for.

Simulators are great to a point, but from experience, there is no 'real' stress to overcome. While on the water training, the entire goal is to avoid stress at all times!! Being in an emergency situation is confronting, where moments ago everything was cool and calm, and then in a heartbeat the complete opposite. Having knowledge of what you're up against, not just the on-water situation but also what the mind-body response will be, might give you the space to find the best outcome.

<p>1. Upset awareness – be able to identify when the vessel is 'upset' or heading for an upset condition.</p> <ul style="list-style-type: none"> • Awareness of startle and surprise • Training / licensing • SMS Procedures • Parameters • Fatigue management • Correct allocation of resources • Situational awareness 	<p>2. Upset Prevention – knowledge of human factors and limitations of the pilot during a stress response.</p> <ul style="list-style-type: none"> • Understanding that decisions may be impaired while startled / surprised. • Techniques to deal with these effects. Use a reset method. • Develop situational awareness. • SMS Procedures. 	<p>3. Upset Recovery – techniques for recovery in a timely manner.</p> <ul style="list-style-type: none"> • Develop situational awareness. • Take best action when human factors response is processed. • Follow appropriate procedures.
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References:

Startle Effect Management (Final Report) – EASA (NLR) – 2018
<https://www.sciencedirect.com/topics/neuroscience/startle-response>
 Startle and surprise https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=1030&context=isap_2023
 NASA/TM–2015–218930 - Effects of Acute Stress on Aircrew Performance: - Literature Review and Analysis of Operational Aspects – NASA 2015
 Easy as ABC: A Mnemonic Procedure for Managing Startle and Surprise - Piras, Landman, Paassen, Stroosma, Groen - 22nd International Symposium on Aviation Psychology, 39
 ADVISORY CIRCULAR, AC 121-03 v1.1, Upset prevention and recovery training. CASA 2025NLR - Royal Netherlands Aerospace Centre



NEWS FROM PORT ASH

CLIFF, ANDREW AND TEAM

From the very concept of a manned-model centre in about 1990, my better half Cath was very much half of planning and starting to build Port Ash on our 2000 retirement. So it is sad to write that she passed away in hospital on the 11th March. Earlier visitors here will remember her well as from our first course for Darwin in 2001, she did all the catering until her hospitalisation in 2010 for heart trouble. However, we continued to live here happily as it was our new and very interesting home, and I continued to lecture for a while after Andrew joined us in 2014.

Looking back over the last twelve months I can see little comment about bad weather. Without quoting statistics, we've had quite a few windy years here, but not recently. Perhaps this bodes ill for the future somewhere. I recall one early course – a winter week - where it blew westerly all week except for the Wednesday afternoon. Two Melbourne pilots were on course so perhaps that had something to do with it.

Retirement is very much in the air for my generation and except for Andy Traill

who has been here since 2013, most have retired to cruising - or higher...

However, Andrew has been busy recruiting the next generation of facilitators and we welcome Doug Dow ex-Adelaide, Martin White ex-Sydney, also Matt Best, Mark Webb and Nick Leonard all current Newcastle pilots. Most recently John Jenkin newly retired from Woodside has joined us. There are many names there, but some are still working pilots who will be here for part of a week only when on roster. We discovered early that sharing a week works quite well as the ship-model itself is the principal teacher.

Numbers of people training on manned ship-models continues to rise and I presume the overseas centres are experiencing that too. I do recall the early and powerful sales pitch of simulation salesmen telling the world that all our future pilot training would be on-screen with the implication that visual was no longer relevant/necessary or even worse 'old fashioned' - no greater put-down than that!

Full navigation automation is already with us on ocean-going ships and might indeed happen one day with AI, but not yet. However, PPU's have been a fact of life for many years now but not on manned-model ships where the screen shows ship information only. The power of the addictive screen is huge, and we sometimes see people plough into the wharf looking desperately at the ship-model's screen for inspiration! Wishing you all the best with stout ladders, good weather and a safe lee.



THE HEIGHTENED RISKS of Pilot Transfers

The image of a pilot climbing a rope ladder alongside a ship remains emblematic of the maritime industry. It embodies resilience, precision, and the quiet courage required to navigate this essential yet potentially perilous task. However, as ships grow larger and global daily pilotage operations continue seamlessly, the inherent hazards of pilot transfers often fade into the background.

Despite relatively low incident rates compared to the sheer number of transfers completed, the consequences of accidents during these operations are on occasions fatal. Alarming, statistics reveal that, on average, a pilot loses their life every six months worldwide during transfers. While some degree of risk is intrinsic to the process, we must take every possible measure to reduce it to as low as reasonably practicable.

A CASE STUDY: THE VAN STAR INCIDENT

In April 2021, a French pilot sustained severe injuries after falling four metres from the combination ladder of the bulk carrier Van Star while navigating the River Seine. The pilot's fall onto the pilot boat deck resulted in multiple fractures and months of recovery. Upon investigation, the French Marine Accident Investigation Bureau (BEAmer) identified numerous non-compliances in the transfer arrangements:

- The ladder exhibited a poorly repaired step with missing chocks.
- The accommodation ladder overlapped a side rope.
- The setup lacked an inboard stanchion and was not secured to the hull.

Alarming, two other pilots had accepted these substandard conditions on this passage before the incident occurred.

BEAmer's findings also highlighted a broader systemic issue:

- A poor reporting culture regarding non-compliant transfer arrangements.
- A lack of specific training for pilots on transfer safety.
- Inconsistent approaches to pilot boat manoeuvres across varying transfer heights.

LEARNING FROM ACCIDENTS: A CALL FOR PROACTIVE MEASURES

In response, the French Pilots' Association (FFPM) produced "20 Years of Accidentology," a compelling film underscoring the dangers of falling onto solid surfaces. The research revealed that:

- A three-metre fall can cause severe injuries.
- A five-metre fall often results in permanent disability.
- An eight-metre fall can lead to fatality.

Over the study period, twenty falls onto solid decks caused serious injuries, while ten falls into water led to significantly less severe outcomes, demonstrating the importance of appropriate personal protective equipment (PPE) and adequate transfer safety measures.

PARALLELS AND CHALLENGES IN THE UK

In the UK, the UKMPA already offers a reporting structure through its app. However, participation remains limited to a small core of pilots, despite the critical safety implications. The facts speak for themselves: climbing only safe and compliant ladders should be a non-negotiable standard.

The Boarding & Landing Code emphasises the importance of preparing for longer climbs by positioning pilot launches away from the ship's side. In fostering a "climb zone" mindset, and collaborating with the coxswain to plan and mitigate risks in advance of the transfer will assist in formalising the process.

REDUCING RISKS THROUGH REGULATORY AND PRACTICAL MEASURES

"Red Zone Transfers" (those approaching nine metres) present the greatest severity. Recent reports indicate that ultra-large container ships (ULCS) in ballast conditions have presented ladders exceeding this height due to the trim.

"Orange Zone Transfers" remain extremely hazardous and with high severity that is often overlooked given the reduced height transfer but the risks associated with these arrangements can often be further mitigated by reducing climb heights even further whenever possible.

IMO Resolution A.1045(27) recommends a global standard: a minimum of five metres from the waterline for lower platforms in combination rigs. While some ports adhere to this guideline, local practices vary. For instance, some ports increase the combination rig transfer heights based on swell conditions, while in calmer waters, such as some areas of Eastern Canada, often allow for lower transfer heights reducing the climb exposure.

During the recent NCSR 11 sub-committee session of the IMO Maritime Safety Committee (MSC), proposals from certain flag states to reduce the maximum permissible climb height from nine metres to five metres failed to achieve consensus. This outcome was likely influenced by concerns related to swell conditions coverage and the significant operational changes required to implement such a reduction. Nonetheless, the critical issue of fall height exposure remains a pressing concern. It is essential that shipping, harbour authorities, and pilot bodies work collaboratively with the aim of reducing transfer heights to the minimum safely achievable wherever possible.

A SHARED RESPONSIBILITY

Ultimately, the responsibility for ensuring safe pilot transfers rests with all stakeholders. Pilots must assess risk exposure for each climb, reduce climb heights when safe rigging possible, and formalise transfer plans with their coxswains. The Maritime and Coastguard Agency (MCA) strongly supports pilots who report non-compliant arrangements, reinforcing the need for accountability across the industry.

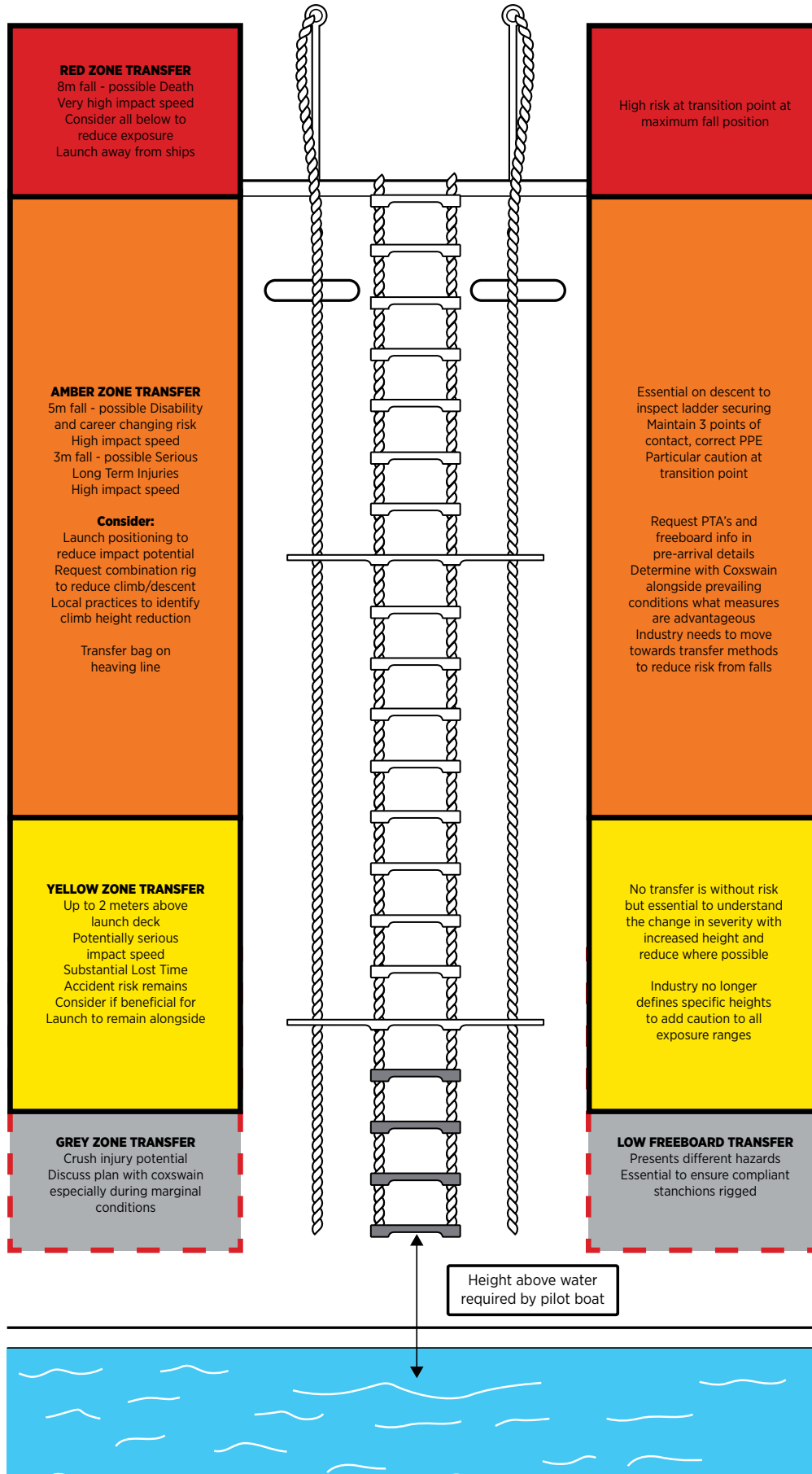
Safety in pilot transfers is not just a regulatory matter—it is a moral imperative. With continued vigilance, robust reporting, and adherence to best practices, the industry can work toward a future where no pilot risks their life climbing a ladder that fails to meet safety standards.



20 years of
Accidentology link:

CLIMB ZONES

Exposure and Risk from falling from height for Freeboards of 9m or less above the water





HULL 096

The World's Largest Battery - Electric Ferry

TOM COOPER

Incat Media and Communications Manager

The maritime industry is undergoing a transformative shift towards sustainable propulsion, and at the forefront of this movement is Hull 096—the world's largest fully battery-electric ferry, currently under construction at Incat Tasmania for South American customer Buquebus. This pioneering vessel represents a significant step forward in sustainable maritime transport, offering low-emission operation while maintaining the high performance and reliability expected of Incat ferries.

Hull 096 is an all-electric, lightweight aluminium catamaran designed to service the route between Buenos Aires, Argentina, and Colonia del Sacramento, Uruguay. Measuring 130 meters in length and capable of carrying over 2,100 passengers and 225 vehicles, this vessel is powered entirely by a cutting-edge battery system that eliminates the need for fossil fuels. The transition to battery-electric power is not only environmentally responsible but also aligns with growing regulatory and industry demands for decarbonisation.

With an installed energy capacity exceeding 40 megawatt-hours – supplied by more than 250 tonnes of batteries – this is a game-changing vessel in maritime history. The ship's energy storage system (ESS) is four times larger than any other marine battery installation in the world, setting a new global benchmark for sustainable maritime transport.

A CASE STUDY: THE VAN STAR INCIDENT

Recognising the importance of operational reliability, Hull 096 has been engineered with multiple layers of redundancy to ensure continued functionality under all conditions.

- **Battery Redundancy:** The battery system is divided into four individual systems, significantly reducing the risk of total power loss. Even in the unlikely event of a partial failure, the remaining energy reserves will always be sufficient to return the vessel safely to port.
- **Propulsion Redundancy:** The ferry features eight independent drive lines, with four in each hull, providing superior propulsion redundancy compared to conventional vessels.
- **No Single Point of Failure:** Unlike traditional propulsion systems, Hull 096 has been designed so that no single

component failure - whether in the power system or propulsion - can render the ship inoperable. This ensures continued manoeuvrability and safety in all operating conditions.

- **Shore Side Charging:** The vessel's power system is supported by high-speed shore-side charging infrastructure at its home ports. The charging process and turnaround time have been strategically planned to ensure the battery state of charge remains sufficient for each voyage segment, eliminating the risk of depletion mid-transit.

Hull 096 represents a significant advancement not only in sustainable shipping but also in the practical reliability and safety of battery-electric vessels. By incorporating robust redundancies and state-of-the-art engineering, Incat has created a ferry that meets the high expectations of Marine Pilots and operational crews, ensuring safe and efficient ship handling in all conditions.

As the industry evolves, Hull 096 stands as a testament to what is possible when innovation meets sustainability in maritime engineering.





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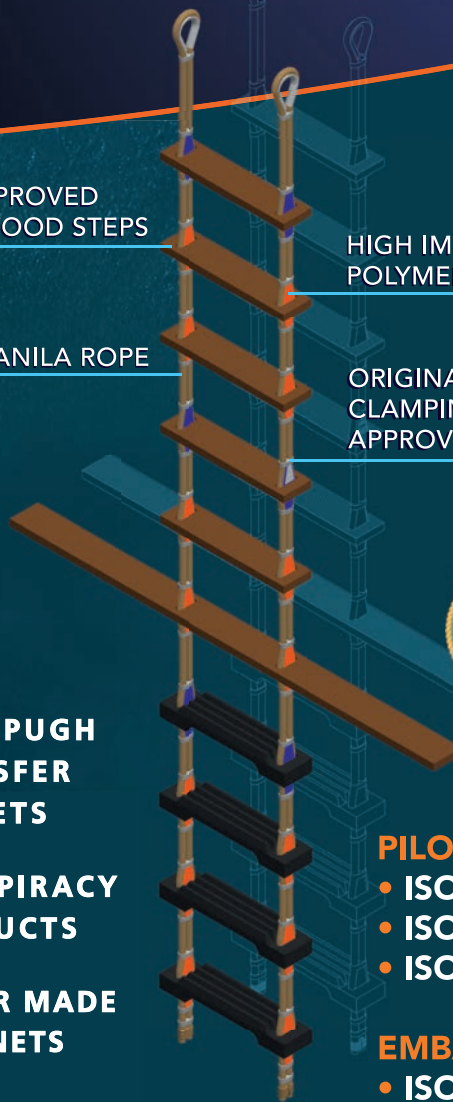


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LEARNING BY TURNING

CAPTAIN HENK HENSEN

This article focuses on a very specific issue, which has had not much attention up till now but may play a role during the use of a turning circle or similar situations. It may not appear very urgent outside certain specific situations, but it is interesting, and bears further investigation.

During a simulator training course for pilots, attendees noticed that although the turning circle or turning space on the river appeared to be large enough, the pilots often had to give astern on the engine because they ran out of space. How was that possible? The pilots and the instructor did not understand why this was happening. The reasons why this could happen will be addressed below so that other pilots either can learn from it or can confirm it from their own experience. The more basic requirements for turning a ship in a turning circle will be addressed first.

TURNING WITH NO CURRENT

When entering a turning circle, it is best to have the ship stopped in the centre of the circle. If the ship still has some ahead or astern speed when it starts turning, the turning space may be too small and engine power and/or tug power is then needed to take speed off the ship.

TURNING ON A RIVER WITH CURRENT

When turning on a river with current, it is important that the ship is stopped in the water, which means speed through the water is zero, before the ship starts the turn. If the ship still has some headway or sternway, the available turning space might be too small, unless engine and/or tugs are used to halt the forward or astern movement

of the ship. Starting the turn when the ship is stopped in the water is always safest.

SHIP GETTING AHEAD SPEED WHEN TURNING

Now we turn to the specific issue mentioned in the introduction. The graphic above right, taken from Tug Use in Port (4th edition, page 133),

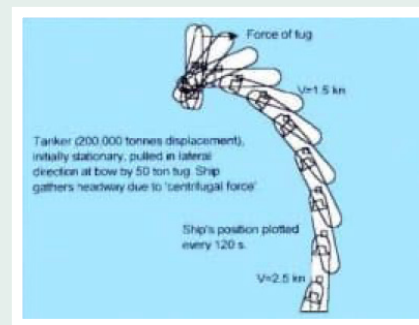


Figure 1

shows a ship gathering speed while turning (Figure 1). The figure shows a tug fastened to the bow of a tanker of 200,000 tons displacement dead in the water, pulling constantly with 50 tons perpendicular to the bow. There is no wind and no current and the ship is in deep water. This simulation shows that while turning, the ship gets a speed of up to as much as 2.5 knots. How is it possible for a ship to gather speed while there seems to be no forward directed force?

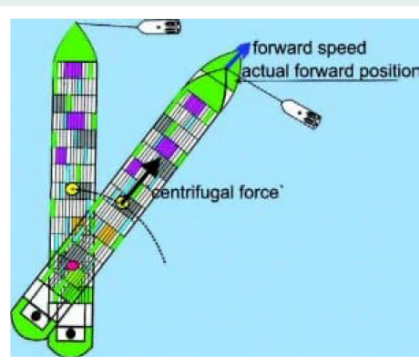


Figure 2

In figure 2 a container ship is pulled around by a tug, in the same way as the tanker in figure 1. The red dot is the pivot point of the ship and the yellow dot the centre of gravity. What you see is that the centre of gravity is trying to follow an arc.

It is like a car driving through a bend in the road. Because of the friction between tyres and road, which is the centripetal force, the car can take the bend with speed. On a slippery day that friction is gone and the car flies out of control by the centrifugal force. This is the same force that is driving the ship forward. The centrifugal force is equal to the centripetal force and can be calculated with the formula: $F_c = mv^2/r$

Where m is the mass of the vessel, v the speed in m/sec along the arc and r the radius of the arc in metres; the distance between the yellow and red dot. This force drives the ship forward. Both the actual position and the forward speed are shown in figure 2.

The larger the mass or the higher the rotation speed, the larger the forward driving force. On the other hand, the larger the mass the more force is needed to drive the ship forward. As the ship gathers forward speed, the centre of hydrodynamic forces will move forward, resulting in the pivot point moving forward too. The tug has then to overcome a higher force. As the power of the tug is limited to 50 tons, the rate of turn will decrease, and consequently so will the forward driving force. The decreasing rate of turn and forward moving pivot point can be seen when studying figure 1. However, for some reason the speed increases there instead of decreasing.

This is admittedly a situation which seldom occurs; it is rare for just one tug to pull a large ship around. It could happen, for instance, if the aft tug has a break down and just one tug is then left.

Nevertheless, we will have a look at the consequences for the required turning area. Two aspects play a role: The pivot point and the forward movement of the ship. In a more usual situation with one tug forward and one aft, both of equal force, the ship will pivot round a point in the middle of the ship. The minimum turning space needed is then equal to one ship length, not counting the room needed for the tugs (see circle 1, below). With just one tug forward, the situation is different. The ship will then pivot around a point further aft (see the red dot in figure 2). This has the consequence that more room is needed for turning the ship, in this case up to turning circle 2 (see figure 3).

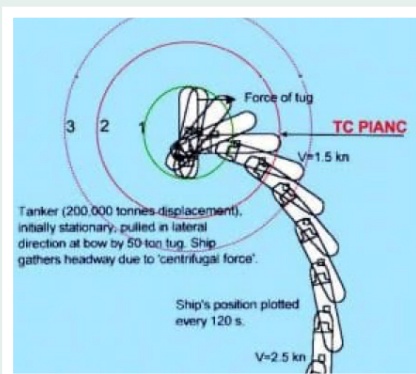


Figure 3

As the ship also moves forward, yet more additional room is needed, even beyond circle 3 in figure 3, unless engine or tug actions are taken to stop the forward movement of the ship. Circle 2 is the turning circle recommended by PIANC (Permanent International Association of Navigation Congresses), being two times the ship length. As we have shown here, for a ship with just one tug forward, even that rather large turning circle is still too small. The ship needs at least the space given in turning circle 3, if no engine actions are taken when turning.

THREE TUGS

Now we will look at a scenario very similar to that observed by the pilots mentioned in the introduction. Here, a containership is being turned by three tugs of 50 tons power; two forward and one aft (figure 4). The tug is pulling constantly perpendicular to the ship. The red dot is the pivot point and the yellow dot is the centre of gravity of the ship. Figure 4 Containership, length 300 m, displacement 142,000 tons, pulled around by three tugs. Plots each two minutes.

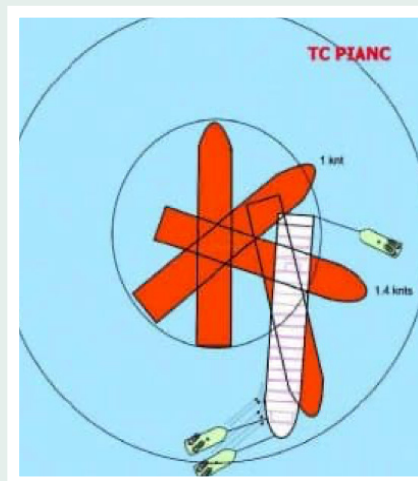


Figure 4

Note: Tugs are added afterwards. It can be seen that once the ship has been turned about 120 degrees, less space is required for turning than with just one tug forward. Note, however, that it will still require more space than if we were using two tugs with the same power of 50 tons forward and aft, because the ship still has ahead speed (again, not counting manoeuvring room for the tugs). This is because the addition of the two tugs, one forward and one aft, does not create a forward moving force on the ship. They just turn the ship around the pivot point. The forward moving force is still only created by the original 50 tons tug forward, although the forward moving force decreases, as explained previously. What the two added tugs do is increase the turning speed.

Consequently, the ship has less time to move forward than with one tug at the bow, but it is still moving forward. Note, for instance, the position of the ship when it has turned about 170 degrees. This forward movement can become a problem if the pilot has not noticed that it is happening in time to counter it.

PRACTICAL TESTING

Some simulator institutes were generous enough to carry out some simulations to verify whether the turning effect on ship speed described above, and as set out in Tug Use in Port, is correct. One result corresponded rather well with that described in Figure 1. All outcomes showed a difference in speed and ship track after the ship had turned 90-120 degrees. Most attention has therefore been paid to the turning phase up to about 120 degrees. One simulator manager remarked: 'I don't know how realistic it [the simulation]

is.' It is indeed questionable to what extent the software used in simulators can present realistic ship behaviour with respect to the centrifugal force generated while turning and how the tugs operate in practice.

The change of the centre of hydrodynamic force towards a more forward lying position on the ship due to the gradual increase in ship's speed, causing a delay in the rate of turn, also requires careful attention. So, too, does the effect of a small under keel clearance. This notwithstanding, the simulations had one thing in common. All of them showed a ship gathering speed while being turned by a force at the bow, in particular during the first part of the turn. Now the tugs. In practice, the forces at the bow and stern will be generated both by the tug(s) and by the vessel's own bow and stern thruster, if one or both side thrusters are available. It can be a problem for the tugs to remain at an angle of exactly 90 degrees to the moving ship at all times. As the ship gathers speed, the tugs will try to stay in a good safe position to pull. This means the tugs will try to keep pace with the ship by staying in a somewhat more forward lying position, as shown in figure 4. This has the consequence that the tugs can easily increase ship's speed due to the tug force vector created in the ship's longitudinal direction. The speed shown in figure 4, when the ship has turned about 45-120 degrees, might therefore easily be higher than expected. This results in the ship crossing the PIANC turning circle line and so running out of space. This might explain what happened during the pilot simulation training mentioned in the introduction, if it has all been well simulated. The tugs could also stop the forward movement. However, they should then be told to do so by the pilot. If the pilots had the opportunity to check the ship's speed regularly, they could have ordered astern on the engine to stop the forward movement.

There is another effect of the tugs which hardly can be represented by a simulator. In the situation shown in figure 4, the propeller wash of the tugs may hit the ship's hull. Depending on the angle of inflow, this may either help or counteract the turning process. An effect to be aware of!

It has been observed that tankers dead in the water will start moving forward due to the propeller wash of pulling tugs directed at the bow. It is doubtful whether this effect will be experienced with more slender ships such as container vessels.

CONCLUSION AND RECOMMENDATION

During a simulator training course pilots experienced a problem when turning a ship on the river. They ran out of space, even though the available turning room appeared to be large enough according to expectations. There is a possibility that this is caused by the following reasons:

If a ship dead in the water is turned by tug(s) and/or bow thruster forward and tug(s) aft, all pulling perpendicular to the ship, and total power forward is significantly larger than total power aft, the ship will start to move forward due to a centrifugal force. When the ship

is gathering forward speed, the tugs will try to keep pace with the ship by pulling from a somewhat more forward lying position, with the consequence that they are imposing a further speed-increasing force on the ship. The aft lying pivot point on the ship, the centrifugal force and the speed-increasing force created by the forward tugs may all lead to a situation where the turning ship runs out of turning space.

The propeller wash of tugs hitting the ship's hull may also affect the turning of the ship or ship's speed. More research is needed to obtain a better insight into ship's behaviour when turned by more (tug) power forward than aft, or when the vessel is being turned by just one tug forward or bow thruster only. This should also include the effect of tug propeller wash hitting ship's hull, under keel clearance and ship size. Simulation of all the factors that play a role during the turning is a real

challenge. However, the 'hidden force' has been clarified. It is now clear that in order to neutralize that hidden force, as far as possible equal power forward and aft should be used for turning a ship. If pilots are able to note the data of a turn in the situation described above, such as sideways speed aft and forward, rate of turn and forward speed, it would certainly give better insight into the process.

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CAPTAINS HAODA VIROBO AND BONNY AISA DURING A SIMULATION EXERCISE, PART OF PNG PORTS' LNG TANKER TRAINING PROGRAMME, AT SMARTSHIP AUSTRALIA IN BRISBANE.

PNG PORTS 'RAISE THE BAR' in Pilotage Training

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

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

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

The six pilots who've recently received training, constitute both a 'pool' and a 'pipeline' of LNG tanker pilotage talent. Two of the pilots are already experienced LNG tanker pilots and

another two have received all necessary training and assessment and are just waiting to be signed off. The remaining two pilots, who have undertaken the first stage of the LNG training programme, are continuing to progress and are expected to achieve competency in the near future.

The LNG training programme was developed and overseen by McGuire Maritime. Chief Operating Officer of PNG Ports, Felix Bauri, described the simulator training component, conducted at the Smartship Australia simulator centre in Brisbane, as "especially critical for LNG pilotage and particularly so for a country like PNG which is so dependent on LNG exports." He added that "simulator training is also the only way a pilot can be consistently trained in a range of contingencies and emergencies such as steering failure or tug error, as well as in adverse weather conditions."

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

However, it's not just an increase in LNG tankers that PNG Ports pilots will need to service but an increase in all manner of vessels. The construction phases of the P'nyang and Papua LNG projects will be associated with a steep increase

in large cargo vessels in particular, given that nearly all equipment and materials required for construction needs to be imported by sea.

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

CEO Neil Papenfus is adamant that he doesn't only want to raise the bar when it comes to the training PNG Ports' pilots receive but all of the country's pilots. The PNG and Australian governments signed off on a A\$621.4 million 'PNG Ports Infrastructure Programme in 2022, to repair and upgrade seven key ports. Papenfus believes that "one way to protect this investment is to prevent future damage from ship collision, and that this can in part be achieved by having better trained pilots, with improvements in training to be mandated by the NMSA and tied to licensing." Another mechanism by which Papenfus says vital port infrastructure can be protected is to increase the number of pilotage mandated ports. Only six of PNG's 23 declared ports are mandated.



NEW TRANSVERSE 3200 Tugs in Newcastle

CAPTAIN SCOTT CLINTON

Approximately three years ago, Svitzer extended an invitation to pilots and port stakeholders from across Australia to attend a demonstration at the HR Wallingford simulator facility in Western Australia. The purpose was to showcase a revolutionary new class of tug – the TRAnverse tug.

Unlike conventional designs, the TRAnverse tug features an inline propulsion system, equipped with two azimuthing thrusters positioned at the bow and stern. This innovative configuration delivers exceptional manoeuvrability and control.

Drawing inspiration from concepts like the Eddy Tug and Carrousel RAVE Tug, and incorporating hull characteristics reminiscent of Voith Schneider designs, the TRAnverse tug represents a hybrid evolution. Its standout features include high-speed rotating azimuth thrusters—capable of slewing at nearly twice the rate of standard azimuth drives—and a patented towing staple and winch

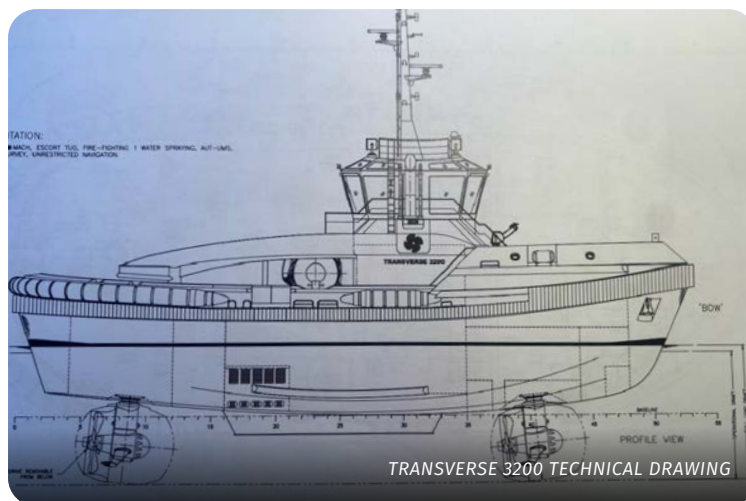
arrangement, maximising both direct and indirect towing forces.

Designed by naval architects Robert Allan Ltd exclusively for Svitzer, the TRAnverse tug was developed to address the growing challenges faced by modern ports—larger vessels, constrained berths, tidal limitations, and increasing demands for efficiency and sustainability.

At the time of the initial simulation trials, two sizes were proposed: 25m x 12m and 32m x 13.5m. Recognising Newcastle's operational demands—particularly its mix of cape-size bulk carriers, Aframax tankers, cruise ships, and container vessels—as well as the port's offshore and harbour transit active escort procedures requiring high-performing towage solutions—Newcastle Pilots requested the larger variant. As a result, two 32-metre TRAnverse tugs were ordered specifically for deployment in Newcastle, fitted with Karmøy offshore render-recovery winches.

Now, both tugs—Svitzer Barrington and her sister vessel Svitzer Nobbys—have been constructed, with Svitzer Barrington currently en-route sailing to Australia and Svitzer Nobbys nearing completion at Uzmar Shipyard in Turkey. These will be the first TRAnverse tugs in the Southern Hemisphere, and only the second and third globally, following the successful deployment of the 25m Svitzer Taurus in the Port of Amsterdam.

The Newcastle-based TRAnverse tugs are designed to deliver bollard pulls of up to 80 tonnes, paired with impressive side-pushing capabilities. Critically, they offer a top speed of 13 knots and can side-step at speeds up to 8 knots, providing pilots with an unprecedented level of control and responsiveness during dynamic towage operations. This agility will prove invaluable in Newcastle's tidal environment, narrow channels, and during active escort operations.



To support the introduction of this advanced towage capability, Svitzer Australia has invested in a state-of-the-art Kongsberg tug and half-mission bridge simulator, located at its Newcastle Tug Base in Carrington. The facility includes a 360-degree tug bridge simulator and a 180-degree ship bridge simulator, providing an immersive environment where tug masters and marine pilots can refine coordination and response techniques specific to the TRAnverse design.

Currently, Newcastle Pilots and Svitzer Tug Masters are undertaking structured training programmes to ensure seamless integration of these tugs into live operations. The pilot training course comprises a focused two-hour theoretical session, followed by three hours of simulator-based exercises. These sessions familiarise pilots with the enhanced manoeuvring characteristics of the TRAnverse tug and new pilot-tug communication

protocols to fully leverage the tugs capabilities—particularly its ability to deliver immediate lateral forces and maintain position with precision under varying conditions.

The port specific simulation exercises focus on outcomes the tugs can achieve when compared to our currently operational tugs. Newcastle in their offshore escort work use outcome-based orders. We will also be using outcome-based orders for the TRAnverse tug. Due to its propulsion layout this tug can achieve outcomes using various methods. An example might be where the Pilot Orders “Barrington; square up and push quarter power”, with a transverse tug the tug Master can determine whether to square up and push or to side thrust and will advise the pilot in his closed loop response: “Tug side thrusting quarter power”.

The arrival of Svitzer Barrington, expected at the end of June, marks a significant milestone for Newcastle.

For Newcastle Pilots, the TRAnverse tug challenges traditional towage practices and ushers in a new approach to managing complex manoeuvres in confined waters. Understanding and harnessing these capabilities will be key to delivering safer and more efficient port operations into the future.

In the next edition of Safe Passage we’ll be including a comprehensive report on this tug from Training Tug Master Captain Ben Holder.

About the Author

Captain Scott Clinton is a Check Pilot in the Port of Newcastle and one of the port’s most senior marine pilots. With a bluewater background and 10 years’ experience as a tug master, he brings extensive expertise in towage operations and port development.



LEFT TO RIGHT: CAPT. SCOTT CLINTON, CAPT. BEN HOLDER (FLEET TRAINING SUPERINTENDANT), CAPT. MARK WEBB, CAPT JOHN LYNCH, CAPT. IAN SNEDDON, CAPT BYRON HITCHENSON (SVITZER MASTER)

DUAL PILOT OPERATIONS

DAMIAN LAUGHLIN AND JOHN CLARKE

Most ports will have some occasions when they allocate two pilots to a ship movement. This may arise from a regulator’s direction, a terminal requirement or a pilot provider’s own choice. The second pilot is usually seen as a risk control measure in cases where safety margins are reduced, such as:

- Larger or heavier ships than typical, relative to the available space in the channel and manoeuvring areas.
- Poor visibility or extreme weather conditions.
- Hazardous cargoes.
- Vessels encumbered by damage or design issues.

When pilots and managers are asked why they think a second pilot might be necessary, they usually simply answer that it is “safer” to have two pilots. If pressed further, they might mention improved monitoring, reduced workload, fatigue and the redundancy provided by a second pilot.

HOW IT IS USUALLY DONE

The requirement for the second pilot is sometimes stated in the pilotage SMS. However, while the SMS might direct when two pilots are required, very few specify how the two pilots should cooperate. Sometimes the SMS will include a generic statement to the effect that the two pilots are to “agree on their respective roles and how they will work together.”

That lack of direction often leads to inconsistent performance by different pilot pairs. Sometimes they co-operate well, but in many cases the lead pilot does the job the same way he or she always does, and the second pilot takes a passive role, adding little in the way of risk mitigation to the pilotage.

In some cases, the addition of the second pilot can even reduce the effectiveness of the bridge team by focussing internally on their own issues and unintentionally excluding the master and officers. Two pilots sometimes become distracted from the

job by catching up on social matters or discussions unrelated to the task at hand. There is even the possibility of conflict between the pilots when there is no clear division of roles and responsibility.¹

Many high profile accidents over the past few decades have occurred on ships with two pilots on the bridge. In each of these cases the second pilot did little or nothing useful to assist the lead pilot during the pilotage and the unfolding incident. Some examples are listed in table 1.

¹The Peerless case (Privy Council 1860) Dr Lushington, when referring to disagreements over control of a ship under pilotage, described *divisum imperium* (divided command) as “the parent of all confusion” or as we might say today the mother of all screw-ups.

WHAT CAN WE LEARN FROM DUAL-PILOT COCKPIT OPERATIONS?

As long ago as the 1970s, the aviation industry decided that pilots must not be left to decide how they will work together. Airline procedures describe two primary roles in the cockpit: Pilot Flying (PF) and Pilot Monitoring

TABLE 1: INCIDENTS INVOLVING DUAL-PILOT BRIDGE TEAMS

SHIP	EVENT
<i>Ever Given</i>	Suez Canal 2021. Grounding. Total cost to global trade unknown but low-end estimates at greater than USD 1B
<i>CMA CGM Vasco da Gama</i>	Southampton 2016. Ultra large container ship grounded.
<i>Yao Hai</i>	Hong Kong 2008. Panamax bulk carrier collided with supply boat killing 18 of the crew.
<i>Eagle Otome</i>	Sabine Canal Texas 2010. Aframax tanker collided with two vessels and spilled est. 1,500 tonnes of crude oil. While lead pilot was negotiating a difficult turn and carrying out a VHF conversation to arrange a safe meeting with oncoming traffic, the second pilot was reading the newspaper.

TABLE 2: PROPOSED DUAL-PILOT MODEL

PILOT CONNING (PC)	PILOT MONITORING (PM)
Plans the pilotage and briefs PM	Suez Canal 2021. Grounding. Total cost to global trade unknown but low-end estimates at greater than USD 1B
Briefs the bridge team	Southampton 2016. Ultra large container ship grounded.
Continuously assess traffic, environmental and other threats, and generate solutions.	
Monitor the health of critical ship's and port systems.	
Cons the ship and “thinks aloud.”	Monitors PC's orders against the plan providing feedback and timely PACE interventions to ensure ships stays within planned ranges.
	Handles all external communications.
	Initial response to bridge team questions or interventions.
	Monitors bridge team performance and cross checks PC's orders are being carried out.
Gives orders to tugs and line handlers.	Makes contact with tugs, pilot boat and line handlers and discusses securing/mooring and planned manoeuvre.
During emergencies, cons the ship and consults with PM when requested.	Manages pilot response to any emergencies. Runs checklists, communications, advises, generates and proposes contingency plans.

(PM). These roles are unrelated to the rank of the pilots and the roles are often exchanged multiple times within a flight. The role of the Pilot Flying is to fly the aircraft regardless of what else is happening. The Pilot Monitoring's role, unsurprisingly, is to monitor the flight. The PM does so by navigating, crosschecking for PF errors and handling all checklists and communications. The aim of the PM is to reduce the PF's workload and minimise any distraction from the PF's primary task of flying the aircraft.

The PM is tasked with making timely interventions when required, and the PM initially responds to any emergency situations and involves the PF depending on the nature of the emergency.

Two critical takeaways from the aviation industry that we must remember are:

1. Responsibility for performing the tasks associated with each of the roles is described in detail in the company's SMS.
2. Aviators are trained

ADAPTING THE PILOT FLYING/PILOT MONITORING MODEL TO MARINE PILOTAGE

There are a number of important differences between a cockpit operation and a ship under pilotage. We have a few extra issues to consider that don't occur in the aviation environment. A major factor is that the bridge team and pilots are usually strangers to each other. And while the ship with its bridge equipment, propulsion and steering systems are at our disposal, the first time we see it, we are expected to operate it. Any idiosyncrasies or faults are often unknown until we try to operate the equipment.

Additionally, we usually have a greater number of people on the bridge, and we need to take all reasonable steps to utilise them as part of the available resources. However bridge teams vary in their knowledge and skill levels. We don't know how much support we are going to get until we are on

board. Equally, the bridge team are often unfamiliar with the harbour and port facilities including buoyage, tugs, and mooring equipment. They will rarely have deep knowledge of our local operational pilotage practices. Taking that into account, the need for effective MPX and engagement with the bridge team remains as important as it is during any other pilotage. We need to ensure that despite a second pilot's presence on the bridge, the bridge team is engaged with the pilotage and continues to monitor and cross-check for errors.

A PROPOSED MODEL FOR DUAL-PILOT MARINE OPERATIONS

Taking into account the differences between marine pilotage and cockpit operations, a model adapting the aviation roles to a marine context can be proposed. The need to monitor, cross check, plan, communicate, make good decisions and show leadership are common to both settings. The additional tasks of briefing a group of strangers, delegating tasks, adapting to an unfamiliar bridge, along with monitoring and cross-checking the actions of a larger group, also need to be allocated to one of the two marine pilots.

The adoption of PACE intervention techniques has become accepted regionally as pilotage good practice and is taught at most Australasian AMPT and BRM courses. Stepping through Probe/Alert/Challenge/Emergency levels, PACE encourages timely, appropriate and constructive intervention. The pilotage SMS and training plan should include PACE techniques. Procedures should clearly describe when and how to speak up so that probing and alerting becomes commonplace, and when the Pilot Monitoring escalates to a challenge or emergency, the Pilot Conning will be in no doubt of the need to listen.

One task that must remain common to both pilots is the requirement to continuously assess the internal and external environment for developing threats. The roles of PM and PC should

be defined in the SMS and associated tasks listed. Accountability for both the PM and PC should be clearly stated.

EXISTING EXAMPLES

While most ports lack detailed procedures for the use of two pilots, there are some good examples in our region. In Australia, Port of Townsville and Port Phillip Sea Pilots are standouts with both having very good dual-pilot procedures. In New Zealand, Port of Napier routinely uses two pilots on maximum sized ships and has done a lot of work on their procedures to clarify roles and expectations. Drafting the procedure needn't be a daunting prospect. Reference to these regional examples shows that the procedure can be comprehensively captured on two A4 pages.

TRAINING AND ASSESSMENT

Lastly, the proposed role of Pilot Monitoring is arguably more difficult to do well than that of the Pilot Conning. To perform the role consistently well, people must be trained. The pilot training plan should specify how training for the PM role will be delivered, and how it will be assessed. Simulators could provide a useful resource for this purpose. The use of PACE interventions by the PM will be ineffective if the PC is not also trained in this technique and receptive to the interventions.

GOING FORWARD

The use of a dual-pilot team can be a very effective risk control on low error-margin pilotages. If your port has any intention to use two pilots from time to time, the pilotage SMS should specify when two pilots will be required, what the roles of the two pilots are, and what their respective tasks and accountability will be. Training plans should include direction on who is qualified to act as PM, what their dual-pilot ops training will be, and how they will be assessed as competent.

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