THE INTERNATIONAL PILOT

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A MESSAGE FROM THE PRESIDENT

Fellow Pilots,

"First of all, I wish to convey my deep appreciation for the work done by all the members of IMPA during this pandemic. Like all seafarers, as essential workers involved in port operations, you are contributing greatly to ensure the delivery of essential goods, in particular, medical equipment and pharmaceuticals which are desperately needed at present."

This message from IMO Secretary-General Kitack Lim in a May, 2020, letter he sent us, is possibly the most gratifying mark of appreciation for the work done by maritime pilots throughout the world during Covid 19. Pilots have truly risen to the occasion, we have adapted our practices as appropriate, and we have helped keep vital supply chains open during one of the darkest time the global community has seen in decades. All pilots in the world can take great pride in this.

They say every crisis presents an opportunity. What is ours? In a world engulfed by change and uncertainty, perhaps it is to provide continuity, and certainty. The certainty that pilots everywhere are steadily doing their job, keeping traffic and trade going, thereby making a very real contribution to the collective good.

We are not heroes. We are as concerned for our health and our loved ones as anyone else. But, by continuing to do our jobs in the most professional manner possible and staying the course, we end up making a difference.

At the same time, a rapidly-changing world is sometimes a bit like a stampede – with fragmented interests trying to take advantage by questioning practices and approaches that have stood the test of time. So, while it is always important to keep an open mind, it is also important to remain cautious.

With some borders still closed, it might also be easy to think that we are now a bit like tidal pools, abandoned by a retreating sea, and therefore a little more separated from one another. Having to take the extraordinary step of postponing our biennial Congress to next year might also add to such a feeling. But, for my part and, I know, for the other members of the Association's executive as well, if anything, the crisis we have gone through together has reinforced the formidable cohesion and comradeship of pilots worldwide.

I have been in touch with many of you over the last months and I see firsthand how pilots are resilient. Undoubtedly, there are still significant challenges ahead but, by staying well-coordinated and continuing to demonstrate flair in the conduct of our affairs, I believe pilots will remain well-positioned, not only to face future challenges but to make a signification contribution to the world's relaunch.

I very much look forward to soon seeing you again!

Simon Pelletier

Message from the Secretary General

Dear Colleagues,

Writing this message during the COVID-19 pandemic has a surreal air about it, for most of you have continued to work as normal, as key workers to keep world trade moving. From the IMPA perspective the main impact has been our work at IMO and other regulatory fora.

Traffic has continued to move safety and efficiently. I have long held a theory that IMO could be closed anyhow for 1-2 years and its costs directed at enforcement and compliance with existing instruments, rather than keep over writing new regulations on top of ones that Flags/Port States/Class seem to largely ignore. (I am close to retirement; I can write such heresies!)

During the lockdown here in the UK the IMPA office has obviously been closed and we have worked from home using tools like Teams, Zoom and WebEx to continue our work. The IMPA Exec met via Zoom and it seemed to work quite well.
We have also been part of an industry stakeholders exchange group on Teams, hosted by the ship owners. This has been a useful validation of your work and its critical contribution to the essential maintenance of trade.

There were also the almost inevitable negatives that came up too. There is seemingly no tragedy that cannot be "milked" for financial gain and this was no exception. You will have seen these profiteering from the sale of anything connected to hygiene. Very quickly a national shipowner group crawled out of the woodwork to suggest now was the time to dispense with Pilotage "to protect crews". One could weep with the opportunistic hypocrisy of these people when you see hundreds of thousands of crew trapped on their ships, unable to return home, and some owners seeming to do little to assist.

Elsewhere in this edition you will find information on the deferment of our 2020 Cancun conference. This has been a difficult time for our Mexican hosts, and we appreciate their continued efforts to secure a fresh date. The Executive initially delayed the conference until September, but it became clear that this was too soon.

The Executive will need to also consider the Constitutional issue which arises from delaying the Conference and the knock-on effect for our Election process. Further information will follow in an IMPA circular.

I hope you and your families stay safe and healthy, and we can all return to our normal lives in the future.

Best Wishes

Nick Cutmore

25th IMPA CONGRESS
CANCÚN 2021

Pilot ladder accident

On March 1st, 2020, one of our pilots felt while climbing a pilot ladder. The accident is still under investigation, but there are certain details that I would like to share with you. A full report will be shared when all investigations are concluded.

The accident happened while climbing a low freeboard vessel (loaded bulker) inside of the Atlantic side breakwater of the Panama Canal. The vessel was about to anchor but still making about 3 - 4 knots. The distance between the deck of the pilot boat and the deck of the vessel was about 2 meters. Somehow, he felt in the water while transferring from the pilot boat to the ladder.

He was recovered from the water using a Jason's Cradle, received first aid right there on the deck of the pilot boat and was immediately taken to the closest hospital, where he was intervened. He remained in the IC unit for a couple of weeks, but recovering from the injuries and responding well to treatment. According to the doctors it might take about a year for him to fully recover. As a result of the accident he suffered a shattered helmet, cuts in his face that required plastic surgery, a cut in his chest (not very deep), a deep cut in his lower back, and a punctured lung, among other injuries.

We will have to wait for the report of the investigation to know more details of exactly what happened here.

I am happy to report that the pilot was released from the hospital and is recovering back home.

Kind regards,
Capt. Alvaro Moreno, IMPA Executive

American Association writes to all State Pilot Authorities. Executive Director, Paul Kirchner explains why...

On February 12, 2020, the American Pilots' Association sent a formal letter to all state pilot commissions and other pilotage authorities in the United States. The letter was part of a multi-pronged strategy developed following the death of Captain William Sherwood with the goal of achieving, as quickly as possible, real improvements in the safety of the transfer arrangements that pilots have to deal with every day. His death heightened the growing sense of frustration among pilots in the US and around the world at the continuing provision of unsafe transfer arrangements and the apparent indifference of ship operators and many port and flag state regulators to pilot safety. Although the letter is directed specifically at the well-known, and dangerous, trapdoor system involved in the Captain Sherwood incident, it was hoped that success in eliminating that problem could carry over to other pilot transfer problems.

Consistent with the statement that IMPA President, Simon Pelletier made to IMO, the approach taken in the letter is to urge a cooperative, constructive effort among pilots, ship operators, and regulators. At the same time, however, the letter recognizes that change is more likely to occur when it's perceived by all parties to be in their own interests. By reminding ship operators that unsafe pilot transfer arrangements can result in costly delays, the letter encourages ship operators to consider the benefits to them of doing the right thing and working with, not against, pilots on this.

The APA is encouraged by the response of many regulatory authorities, including some outside the U.S., and of some ship operating companies that have attempted to correct the trapdoor situation. We recognize, however, that eliminating dangerous trapdoor arrangements will take time and continuing efforts. We are committed to working with IMPA and pilots around the world on this, as well as on all other unsafe pilot transfer arrangements.

The full letter follows below.

This past December 30th, Captain Dennis Sherwood, a New York licensed pilot, was killed from a fall while embarking an inbound container ship. The embarkation in this instance was via a combination arrangement of an accommodation ladder and a pilot ladder. Such a combination is required whenever the distance from the surface of the water to the point of access to the ship is more than nine meters.

This particular combination arrangement, however, involved a trapdoor in the platform of the accommodation ladder with the pilot

ladder hanging from a cross beam near the bottom of the platform, and with the top step of the ladder significantly below the level of the platform. This requires a pilot to pull himself or herself up through the trapdoor while twisting to get a secure footing on the platform. Captain Sherwood fell while attempting to make that difficult maneuver to transfer from the pilot ladder to the platform above.

This trapdoor arrangement is currently found on a number of ships with accommodation ladder-pilot ladder combinations, despite the facts that it has long been considered by pilots to be unsafe and that the IMO has recognized that it is unsafe by taking steps to eliminate it. Since at least 1979, IMO guidelines have recommended that pilot ladders used with a trapdoor extend to the height of the platform's handrail. The purpose of that recommended practice is to bring the ladder steps up to a level from which the pilot can step across to the platform rather than pull himself or herself up to it.

Nine years ago, the IMO revised the SOLAS pilot transfer regulation (SOLAS V/23) and its implementing guidelines (Res. A.1045) in response to continuing complaints about unsafe pilot transfer arrangements. The effective date for the new standards was July 1, 2012. Several of the revisions addressed the use of trapdoors in combination arrangements and were intended to eliminate pilot ladders that hang from the bottom or near-bottom of the platform, as well as other problems with such arrangements.

Example of trapdoor arrangement with ladder hanging from bottom of platform

To address the pilot ladder-platform transition issue, Regulation 23 specifies that a pilot ladder "shall be rigged through the trapdoor and extend to the height of the handrail" (V/23.3.3.2.1) and, in addition, "means shall be provided to secure the lower platform of the accommodation ladder to the ship's side, so as to ensure that the lower end of the accommodation ladder and the lower platform are held firmly against the ship's side." (V/23.3.3.2). Similarly, Resolution A.1045 provides that when a trapdoor is used in a combination arrangement, "the pilot ladder should extend above the lower platform to the height of the handrail and remain in alignment with and against the ship's side." (A.1045, paragraph 3.8).

Against this background, it is frustrating, and now tragic, that pilots continue to encounter, and have to deal with, trapdoor arrangements like the one found on the ship from which Captain Sherwood fell. BUT, it doesn't have to be this way. Complying with Regulation 23 and Resolution A.1045 is not an expensive proposition. Replacing or retrofitting equipment to meet the standards would not be a significant project.

On behalf of the 1,200 pilots in the U.S. state pilotage system, we are asking for your help in bringing about a swift end to this dangerous situation by taking responsible measures, including, but not limited to, the ones proposed below, to protect the safety of the pilots under your jurisdiction.

1. Message to Pilots.
By whatever means you normally use to communicate with your pilots and pilot association(s), remind them that a pilot may refuse to use a transfer arrangement that he or she reasonably believes is unsafe. In particular, you should note the problems with a trapdoor arrangement similar to the one from which Captain Sherwood fell, and provide a brief description of the current IMO standards for combination arrangements using a trapdoor. You should also confirm that you will support, and defer to the judgement of, a pilot who refuses to use a transfer arrangement that he or she believes is unsafe, unless that refusal is later shown to be clearly unreasonable or insincere.

2. Message to the Maritime Community
By whatever means you consider appropriate, issue a notice to pilot users and others in your local maritime community that you are aware that some ships may offer a pilot transfer arrangement consisting of an accommodation ladder/pilot ladder combination with a trapdoor that does not meet IMO standards in effect since at least 2012. Further, advise that, in response, you have reminded the pilots that they may refuse to use a pilot transfer arrangement that they reasonably believe is unsafe, particularly the offending trapdoor arrangement. Urge ships with a trapdoor arrangement to bring their arrangements into compliance with the current IMO standards as soon as possible in order to avoid potential disruptions to ship schedules and port operations. Ships can either (1) switch to the more traditional system of a pilot ladder hung from the ship's deck, positioned adjacent to the accommodation ladder platform, and secured to the ship's hull at a point nominally 1.5m above the platform; or (2) ensure that the trapdoor arrangement meets the following IMO standards:

a pilot ladder rigged through the trapdoor extending above the platform to the height of the handrail;
b. lower platform of accommodation ladder secured to the ship's side, so as to ensure that the lower end of the accommodation and the lower platform are held firmly against the ship's side; and
c. pilot ladder remains against the ship's side.

If you have any questions, please don't hesitate to contact us. Also, we would welcome any suggestions that you might have for alternative methods or strategies for improving this or any other situation jeopardizing pilot safety. We look forward to working with you on this important matter.

ABP | SOUTHAMPTON

NOTICE TO MARINERS

No 07 (T) of 2020

Port of Southampton – Pilot Boarding and Disembarking Vessels – Non-compliant 'Trap Door' Arrangements

NOTICE IS HEREBY GIVEN that some ships have a pilot transfer arrangement consisting of an accommodation ladder / pilot ladder combination with a trapdoor that does not meet IMO standards in effect since at least 2012. Southampton Pilots have been reminded that they may refuse to use a pilot transfer arrangement that they reasonably believe is unsafe, particularly the offending trapdoor arrangement. All vessels with a trapdoor arrangement are urged to bring their arrangements into compliance with the current IMO standards as soon as possible in order to avoid potential disruptions to ship schedules and port operations.

The relevant documents are SOLAS V Regulation 23, IMO Resolution A. 1045 (27) and guidance from Embarkation & Disembarkation of Pilots Code of Safe Practice.

Fig 1: Non-compliant Arrangement

The arrangement at figure 1 is non-compliant because:

- The pilot ladder is not rigged to extend through the trapdoor and secured 1½ metres above the bottom platform (SOLAS 3.3.2.1). The method of securing the ladder to the underside of the platform shown in the figure is dangerous because the transition from the pilot ladder is done via an uneven step height.
- The horizontal cross member to which the pilot ladder is secured is a distraction from using the side ropes when transitioning onto the pilot ladder when disembarking.

- The pilot ladder steps cannot rest firmly against the ship's side, due to the nylon wheels attached on the inboard side of the bottom platform.
- The 'sloping ladder' is not securely attached to the hull.

Fig 2: Compliant Arrangement

Guidance is available in "Shipping Industry Guidance on Pilot Transfer Arrangements, Ensuring Compliance with SOLAS" to be found at www.ics-shipping.org.

This Notice remains in force until cancelled.

Vessel Traffic Services Centre
Ocean Gate, Atlantic Way
Southampton

Captain P J A Buckley
Harbour Master

21st February 2020

Owners, Agents, Charterers, Marinas, Yacht Clubs and Recreational Sailing Organisations should ensure that the contents of this Notice are made known to the masters or persons in charge of their vessels or craft.

www.southamptonvts.co.uk

2020 No.7 (T) Port of Southampton - Pilot Boarding and Disembarkation from Vessels

Publication of the report of the WMO/IMO International Symposium on "Extreme Maritime Weather Towards Safety of Life at Sea and a Sustainable Blue Economy"

Over 200 participants from over 40 different countries attended, representing both private and public sector, among them Captain Don Cockrill, UKMPA who presented on a Pilots perspective and Nick Cutmore, Secretary General of IMPA who chaired the final conclusions session.

Summary

Under the Safety of Life at Sea (SOLAS) Convention, the WMO and IMO have collectively worked to reduce the risk and vulnerability of the maritime community in the event of hazardous or extreme maritime weather. Despite this longstanding partnership, there exist areas in which the WMO and IMO can close the gap in understanding between the maritime industry and the metocean1 community. Topical sessions highlighted the need for educational trainings for both mariners and metocean forecasters that would increase awareness between mariners and forecasters of each community's needs and operational constraints. Specifically, to build a broader understanding among various stakeholders will require forecasters to have a clearer understanding of forecast-dependent maritime operations and decision making and likewise will require mariners to understand the forecasting process. This Symposium also highlighted the need to tighten connections in the value chain between the collection of metocean data, metocean data assimilation, marine weather forecasting, and the dissemination of marine forecasts and services to users and stakeholders. It also demonstrated the value in looking to the research community to inform operational and policy and decision making, from which the results can in turn inform subsequent research priorities. Participants identified opportunities for increased metocean data collection through the extant WMO Voluntary Observing Ship (VOS) programme as well as private industry (e.g. oil and gas). Participants observed that there is a need for more explicit encouragement for ships to actively participate in programmes as well as an improved understanding of how to better facilitate the onboard collection of metocean data. Moreover, this Symposium demonstrated the need for authoritative data sources officially endorsed to increase confidence in product users and a closer look at data management and dissemination is required to promote the exchange of relevant data. Finally, the Symposium highlighted a growing demand for marine services that communicate impact-based weather forecasts as well as ancillary support in decision making. Future efforts could include developing vessel class-specific impacts that correspond with varying marine weather conditions. Presenters also highlighted the need for improved forecast portrayal and visualization of weather impacts that would include forecast confidence and uncertainties, thereby shifting the focus of communications from what the 'weather will be' to instead: 'what it will do'. The definition of impact is dependent on risk, exposure, and vulnerability; therefore, coordination with the maritime industry is necessary to determine individualized impacts resulting from hazardous marine conditions. This Symposium demonstrated that public-private partnerships could most efficiently address this need. The Symposium concluded that better communication between metocean forecasters and the maritime industry is urgently needed to ensure the safety of life and property at sea while increasing the efficiency of maritime operations. Increased data collection could improve forecasts, which allows marine service providers to tailor and communicate the impacts of hazardous marine conditions on vessels and ports. The implications of a more efficiently and effectively operated value chain would provide wide ranging societal benefits. Examples of such benefits include a reduction in the loss of life and property at sea and along coastlines from the utilization of impact-based marine weather forecasting and real-time conditions in ports and harbours, improved operational efficiency and reduced emissions resulting from optimal voyage routing, environmental monitoring and forecasting to aid coastal management, and more effective search and rescue and environmental emergency response efforts. Participants observed that a formalized collaboration between WMO and IMO regarding extreme maritime weather issues would help attain the aforementioned needs and goals. Ad hoc thematic entities might be needed to solve specific issues. A WMO-IMO collaboration should endeavour to provide education and training, for improved messaging of metocean conditions for mariners. The next International Symposium on "Extreme Maritime Weather" could be organized jointly with IMO and WMO in two years' time. The date and the place of the next Symposium should be advertised as soon as possible. Between the symposiums, topics addressed in the first International Symposium on "Extreme Maritime Weather: Towards Safety of Life at Sea and a Sustainable Blue Economy" should be discussed in the appropriate IMO, WMO and other relevant bodies.

Speakers, Moderators and the Organizing Committee at the first WMO-IMO Symposium on Extreme Maritime weather, October 2019.

Car Carrier kerfuffle

As edited from official MAIB (UK) report 6-2016.

A pure car-truck carrier (PCTC) was in port loading vehicles. The chief officer (CO) was in the ship's control centre using the ship's ballast system to ensure that the vessel remained stable throughout loading and maintained a favourable trim. Previous calculations indicated that the ship would have a metacentric height (GM) on departure of 1.46 metres. This was acceptable, but smaller than was usual.

The CO went to the ship's control centre and transferred ballast water from the starboard heeling tank to the port heeling tank, bringing the ship upright. He then proceeded on deck to supervise the unmooring operation. The Master, pilot, third officer and helmsman were on the bridge.

About 20 minutes after departure, the CO and the deck cadet went to the ship's control centre to commence departure stability calculations. Due to a large number of changes between the planned load and the actual load, the CO decided to re-enter all of the cargo figures rather than amend the departure stability condition that he had used for his calculation earlier in the day.

As the vessel proceeded outbound from the port, the Master telephoned the CO and told him that he thought the ship 'did not feel right'. The CO replied, 'I'm working on it'. Within minutes, the pilot gave the first helm order, which was to starboard, with the ship making good a speed of 10 knots.

The first turn was completed without incident, the ship heeling to port and returning upright as expected. Shortly afterwards, the vessel entered a channel and the pilot requested that the ship's speed be increased. Meanwhile, the CO became concerned that the newly calculated GM was less than his earlier departure stability calculation had predicted. Since the automatic sounding gauges were out of order, he sent the cadet to take soundings of the three aft peak tanks in preparation for loading additional ballast water. The CO then began setting up the ballast system using the mimic panel in the ship's control centre. He anticipated that he would require an additional 300 tonnes of ballast in the aft peak tanks.

The vessel was now making good a speed of 12 kt. The pilot gave a sequence of orders to the helmsman to execute a port turn: 'Port 10', then about a minute later, 'Port 5', followed by 'Midships'. He observed that the vessel was behaving uncharacteristically during the turn and noted, 'She's very tender, Captain'. The ship then progressively heeled to starboard and the rate of turn increased rapidly.

The pilot ordered 'hard a starboard' and 'stop engines'. He inquired about the vessel's GM but it was already too late. The vessel blacked out and the starboard list continued to increase as the ship swung to port and grounded, (top left) its rudder and propeller now clear of the water (bottom left). Rescue and salvage operations were subsequently undertaken. *Some of the findings of the official report were;*

- The vessel had inadequate residual stability to survive the port turn at 12 knots and did not comply with IMO stability requirements.
- The vessel's actual cargo weight and stowage were significantly different from the final cargo tally supplied to the ship.
- Several unsafe practices or pre-existing conditions contributed to the vessel's inadequate sailing stability, *including;*
  - Cargo unit vertical centres of gravity (VCGs) were not considered when calculating the stability condition;
  - Ballast tank quantities were estimated and differed significantly from actual tank levels;
  - Most of the cargo weights supplied by the shipper were estimated rather than actual values. In reality, there were significant differences between the two for several cargo units;
  - The vessel's stability was not determined until after departure, which was routine practice on this vessel;
  - The company's port captain saw little value in involving the chief officer or the Master in any decision-making processes;
  - The company's operations manual provided no guidance on the role of the port captain, nor how the chief officer and port captain should cooperate to best effect;
  - The process of applying estimated figures to previously estimated figures, and to adjust those figures to compensate for draught readings compounded to allow a ballast condition for departure that bore no resemblance to reality;
  - The chief officer's familiarisation on joining the vessel had not included instruction on the use of the loading computer;
  - The need to accurately calculate a ship's stability condition for departure and voyage did not feature in the company's two-day training course for newly assigned senior officers to its PCC/PCTC fleet.

Lessons learned

- The investigation uncovered evidence that suggests sailing without a finalised and accurately calculated GM is a practice that extends to the car carrier sector in general.
- Without proper training it is likely that unsafe practices will become the norm.
- When unsafe practices become the norm, it is only a matter of time before an accident occurs.

There has subsequently been a near identical incident in the US...

In the early morning hours of September 8, 2019, the M/V GOLDEN RAY, a 71,178 GT car carrier, was outbound from the port of Brunswick, Georgia with a local state licensed pilot onboard. The vessel was loaded with over 4,000 vehicles, bound for Baltimore.

The Brunswick Bar pilot made the last significant turn to clear St. Simon's Island and prepare to meet another inbound car carrier. Without any prior indication of stability issues, the vessel started to list excessively to port as the vessel was turning to starboard. In a matter of seconds, the vessel was laid over at 70 degrees and rotated out of the channel away from the inbound vessel.

The pilot initiated calls to the inbound vessel and the USCG. He then hailed local tugboats to assist the capsized vessel. Two tugs arrived, and under the direction of the pilot, stabilized the vessel against the shoal outside the channel.

The pilot continued to communicate with the USCG, assisting in the accounting for and rescue of the crew members. Four engineers were missing and unaccounted for. Rescue efforts continued to try to locate the missing crewmembers. They were eventually located by tapping on the hull proximate to the engine room. More than twenty-four hours after the accident the four crewmen were extracted through access holes cut in the bottom of the vessel.

Currently, salvage operations are underway which will require sectional removal of the ship in eight segments. The USCG is investigating the incident.

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Fall of the pilot on the deck of the pusher, Nosorozèc G-01 due to breaking of a pilot ladder fixed to the m/v San Diego vessel in the Gdansk Bay on 19.01.2019 r.

1. Facts
On 19 January 2019, the pusher, Nosorożec G-01 with the pilot on board arrived to the San Diego vessel standing in a drift on the Gdańsk Bay near the estuary of the Wisła Śmiała. After the pusher approached at 10:051 to the port side of the vessel and the pilot entering the vessel made his first step on the ladder, the ladder broke down. The pilot fell down on the deck of the pusher from a small height, and the broken pilot ladder dropped down onto him. The pilot did not suffer any serious injuries, apart from the reported soreness of the ankle of one of the legs.

3. Circumstances of the Accident
On 19 January 2019, the Pilot Station in Gdańsk received the order to lead to the Gdańsk Bay a vessel, m/v Kopersand moored at the repair base belonging to the Żegluga Gdańska Sp. z o. o. in the Gdańskie Stogi and then to introduce in its place the m/v San Diego vessel waiting at the roadstead. Both ships belonged to the same owner.

The Zegluga Gdańska repair base is located near the Major Henryk Sucharski Bridge on Martwa Wisła. The Siennicki Bridge, which is also located on the Martwa Wisła closer to the estuary, prevents the movement of this size of vessels to reach the estuary of the Wisła Martwa and the main exit from the port of Gdańsk. For this reason, vessels can enter the Gdańsk Bay only through the estuary of the Wisła Śmiała.

The Pilot Station in Gdańsk has two fast pilot boat and one slower one. On that day, one of the fast pilot boat was damaged and the other was not fully functional. Due to the considerable distance from the pilot base in Gdańsk to the approach to the Wisła Śmiała, where the pilot was supposed to pass from one vessel to another, at the request of the Pilot Station, the Harbor Master of Gdańsk agreed to use the Nosorożec G-01 pusher to transport the pilot between the vessels. On a daily basis, the pusher, Nosorożec G-01 is stationed at the repair base of the Żegluga Gdańska Sp. z o.o.

Due to such a solution, the pilot came by car to the repair base of the Żegluga Gdańska Sp. z o.o. situated at Gdańsk Stogi. After the m/v Kopersand had been led out to the Gdańsk Bay, the pilot went down to the pusher, Nosorożec G-01. The pusher with the pilot on board turned to m/v San Diego standing in drift. It passed the bow of the vessel and approached the port side of the vessel. The pilot ladder had been prepared in advance and was ready for the pilot to enter it. At the pilot's request, the ladder was lowered so that its entire length was available. After the starboard of the pusher had leaned against the port side of the vessel, the pilot intended to enter the previously prepared pilot ladder. As soon as he set his foot on the lowest step, the pilot ladder broke down and fell on the pilot. This caused the pilot to fall down onto the deck of the pusher.

4.1. Mechanical Factors
The side plates of the vessel protrude for about 4 cm above the contact point with the deck plates. Such solution is caused by the need to meet technological requirements during the construction of a vessel.2 The ropes fixing the pilot ladder were passing above that bare tab of the metal sheet so they had been gradually cut during use.

Slight swing of the pusher when approaching the port side of the vessel caused the pusher's fender beam to hook to the lowest step of the pilot ladder and to break it in the weakest point when the pilot stepped onto the ladder.

The height of the pusher's rubber fender beam was at the same level as the last rubber step of the hanging pilot ladder. A big load caused by stepping on the pilot ladder caused the ropes (cut by the metal sheet) to break.

4.2. Human Factors (faults and negligence)
Each time before hanging out a pilot ladder, it should be carefully inspected. Load-bearing ropes should pass through an embossed protection at the point of contact with the sharp edge of the sheet. These activities had not been carried out before and during the fastening of the pilot ladder to the place designated for it

4.3. Organizational Factors
Pursuant to the current order of the Director of the Maritime Office3, pilots may be transported only on vessels intended (pilot boat) or adapted for this purpose. The harbour master may agree to the use of a tug boat, but only in the event of icing of port waters and the roadstead.

5. Description of Examination Findings Including the Identification of Safety Issues
The load-bearing (side) ropes of the pilot ladder were made of manila rope. Light and strong fiber obtained from sheaths of banana (abaca) leaves is used to produce these ropes. It is characterized by low extensibility, resistance to microorganisms and sea water. In addition, the fact that the fiber is biodegradable means that for many years it has been used, among others, for the production of ship ropes.

The damaged pilot ladder No 48/2016, symbol PL 10 (length 3 m) was produced in February 2016 at Drewil Sp. z o. o. company from Pomieczyno. In the same plant, a damaged pilot ladder was inspected and tested, applying a vertical load of 945 N to a step below the upper step. The test showed adequate strength of ropes and the braid without deforming the fastening of the step. Lifting ropes, in accordance with ISO 799-2004, require durability tests of pilot ladders equal to 800 N.

During the inspection of the lifting ropes, it was found that at the points of break, the fibers on both ropes were chaffed and torn, which facilitated the breaking of the pilot ladder at that very place, after the rubber step5 got stuck on the rubber fender of the pusher.

Durability test of the damaged pilot ladder at the premises of the producer.

During the investigation of the accident, the Commission noticed a certain discrepancy in the regulations governing the assessment of pilot ladders before entering into service.
In accordance with Regulation V/23 p. 2.3 of the 1974 SOLAS Convention, new pilot ladders should meet the requirements of the international standard accepted by the recommendations of the International Organization for Standardization ISO 799: 2004, Ships and marine technologies - Pilot ladders.

Pursuant to the provisions of the above-mentioned standard, newly manufactured pilot ladders must be subjected to the durability test of 800 N. The standard provides for the storm loads to be subjected to the durability test again after 30 months of use.

Because the ISO 799 - 2004 standard is not recognized by the Polish Committee for Standardization, the inspections carried out by the Polish Register of Shipping are based on the requirements contained in the SOLAS Convention 1974, but in subsequent regulations.7 Pursuant to these provisions, pilot ladders are inspected for the renewal of the Cargo Vessel Safety Equipment Certificate after 5 years of operation. After this period, it is required to replace lifting ropes of the pilot ladder, which, in practice, is the reason for its decommissioning and the need to buy a new one.

Considering the way and conditions in which most pilot ladders are used on vessels, the Commission believes that the lack of testing of their strength in accordance with ISO 799: 2014 standard after 30 months in operation causes excessive risk for pilots providing pilot services.

6. Safety Recommendations
Despite the provisions contained in the SOLAS Convention, the ISO 799:2004 standard specifying the conditions to be met by pilot ladders and the manner of their use, accidents involving pilots during pilot service constitute a significant position in the marine casualties statistics. They are very dangerous for the lives of pilots, because they often end in severe injuries, as well as death.

Therefore, the State Marine Accident Investigation Commission has made recommendations to:

6.1. Żegluga Gdańska Sp. z o. o.
The Commission has recommended to check the state of wear and tear of all pilot ladders used on vessels of the Żegluga Gdańska Sp. z o. o. and the way they are attached to appropriate places on board of their vessels. Such inspections should be carried out periodically with a frequency specified by the Żegluga Gdańska Sp. z o. o.
The Commission has recommended to carry out on board of Żegluga Gdańska Sp. z o. o. vessels, safety meetings for familiarization with this report and the requirements contained in the Regulation V/23 of the SOLAS Convention and related IMO resolutions.

6.2. Pilot Station in Gdańsk
A pilot boarding a vessel, especially from a vessel other than a pilot boat, should pay special attention to the possibilities of safe boarding, including the correct setting of the height of the prepared pilot ladder. Any rush in assessing the safe positioning of the pilot ladder poses a threat to the pilot entering that ladder.

The Commission has recommended that the content of the prepared report be made available to pilots performing pilot services at the Pilot Station in Gdańsk in order to indicate the risk that may result from improper installation of the pilot ladder.

6.3. Minister Competent for Maritime Economy
the State Marine Accident Investigation Commission has proposed to apply to the Polish Committee for Standardization for recognition by Poland of the ISO 799-1:2019 standard.
Its recognition will harmonize the requirements that must be met by:
- producers of pilot ladders during their production,
- classification societies and maritime administration when inspecting vessels,
- shipowners and crews during operation and maintenance of pilot ladders.

6.4. Director of the Maritime Office in Gdynia
The State Marine Accident Investigation Commission has noted the lack of identification of the entity responsible for ensuring safe transport of pilots during the provision of pilot services. Port regulations9 in chapter III specify the requirements for safe transport of pilots (§39) but they do not indicate the entity responsible for this transport. It is presumed that this obligation is imposed on pilot stations but it does not result from the regulations of the pilot station operation10 or the provisions of the Act of 18 September 2001 – the Maritime Code. The Commission has recommended that the question of determining the entity responsible for the safe transport of pilots should be regulated by proposing appropriate additions to the regulations of pilot stations.

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How do Pilots and Ship - Handlers learn their skills?

(adapted from a paper presented at the 2020 RINA International Conference on Human Factors by Richard Wild and Margareta Lützhöft)

Introduction

If pilots and ship-handlers reflect on how they were trained and learnt their skills, they may identify a number of methods and elements. For example, a pilot may have specific memories of individuals they perceived to be 'good ship-handlers' and had natural teaching skills. The opposite may also be true. And they may recall images or text from books or other articles. Simulators may have played a role, and these can provide a range of experience and success, dependent upon the realism and accuracy of the simulator and ship models.

A survey was conducted to illuminate how ship-handlers and pilots learn their skills in more detail. The purpose of the survey was to describe the scope of collaboration within the pilot and ship-handling community (PSHC), with a focus on training, what good practice looks like and the role of the community in the future.

Learning within communities

The phrase 'Community of Practice'[1] (CoP) describes how practitioners in a wide range of occupations learn elements of their trade and how to do the job. There is a recognisable process of knowing-how, knowing-what and knowing-why [2]. These steps may be familiar to mariners as the building blocks of learning for many skills including navigation and cargo work. Looking at these from the perspective of pilots and ship-handlers, knowing-how is a process of learning by doing and it is the sum of knowledge and experience manifesting itself in successful tasks, time after time. To get to that point, basic principles such as propulsion, rudders, propellers and some elementary physics must be understood. This is knowing-what and it is the study of the processes involved. Knowing-why is the acquisition and learning of the processes, including external forces such as tide, wind and current, by using them afloat. Putting knowing-why and knowing-what together is useable 'know-how' or simply put, the skill of the pilot, ship-handler or seaman, in the context of the district, port and task. It is the locus of individual experience, organisational documentation and theory.

This is the basis of what practitioners do, but experience is also gained within a group and there is normally a mutual sharing of insights and experiences; that is when the bank of collective knowledge increases and becomes valuable currency to an organisation. Drawing on the knowledge bank also provides a distinction between good practice and best practice; the former allows scope for advance and change, the latter is a closed and definitive position that practice knowledge is complete.

CoPs have been investigated in professions such as teaching and medicine in order to understand their strengths, weaknesses and to improve practice. This has been done with good effect. As an illustration of such collaboration in a maritime setting, ship-handlers were interested to share insights together to reduce fuel consumption whilst manoeuvring. The installation of live fuel monitoring equipment on the bridge of a ship by the company, and instructions to monitor it, did not achieve the same result until there was group buy-in. Non-participant individuals did not want to feel left out so they adapted and shared alternative techniques which reduced fuel consumption .

Survey of pilots and ship-handlers

In order to investigate the maritime CoP, a survey was conducted to investigate how pilots and ship-handlers learn both as novices and more seasoned practitioners. Participants were asked about training methods and tools, what good practice meant to them, how they viewed the role of managed training and their opinion on the role of pilots and ship-handlers in the future. Participants were also asked about the scope and extent of any continuation training they had received, and this was linked to sub-optimal manoeuvres.

The survey questions:

21 questions were asked on a range of themes. Some of the questions were connected and collated as part of the analysis and 15 questions are reported for the purposes of this article.

Q1 to Q3 were about how respondents said they learnt to be a pilot' and ship-handler. Twenty-three options were provided plus the option 'other'. The options were derived from the first author's experience as a seafarer and pilot. A trial survey amongst a group of 26 UK pilots was used to test the validity of the options and consider any others that emerged (see Section 5 Procedure). Respondents were informed that Q3 would ask for their choices to be ranked.

Q4 concerned the effectiveness of traditional and new methods of training. The context was left open for respondents to consider.

Q5 and Q6 related to acts of ship-handling or pilotage that did not go quite as planned or were sub-optimal (but not due to a mechanical failure), and ranking was required. Six options were available, and participants could choose as many as they liked and then rank their choices in significance.

Q7 and Q8 concerned ongoing training and continuous development as a ship-handler/pilot undertaken. This is generally called Continuous Professional Development (CPD) and improvements were asked for that could be made to prevent sub-optimal ship-handling manoeuvres. The purpose of this was to compare CPD and what participants believe is required to improve standards, following a sub-optimal event.

Q9 and Q10 concerned the extent that ship-handling and pilot training is an 'establishment function' or primarily a collaboration between practitioners and learners and introduced the idea of the community of pilots and ship-handlers by asking about repetition within the community.

Q11. Asked what the phrase good practice means.

Q12 and Q13 concerned the threat of autonomy and automation.

Q14 and Q15 asked for some basic demographic information regarding and vessel type familiarity by selecting one of four options of various degrees of manoeuvrability.

Results and analysis

The survey yielded 113 responses with over 61% fully completed. The first 3 questions were answered by every participant, but all responses were analysed. A wide range of experience and ship type was represented (Q14 and 15), and this is recorded in Table 1. The results of some questions are presented together because they were designed to investigate specific topics and themes.

Table 1: Participant experience and vessel familiarity

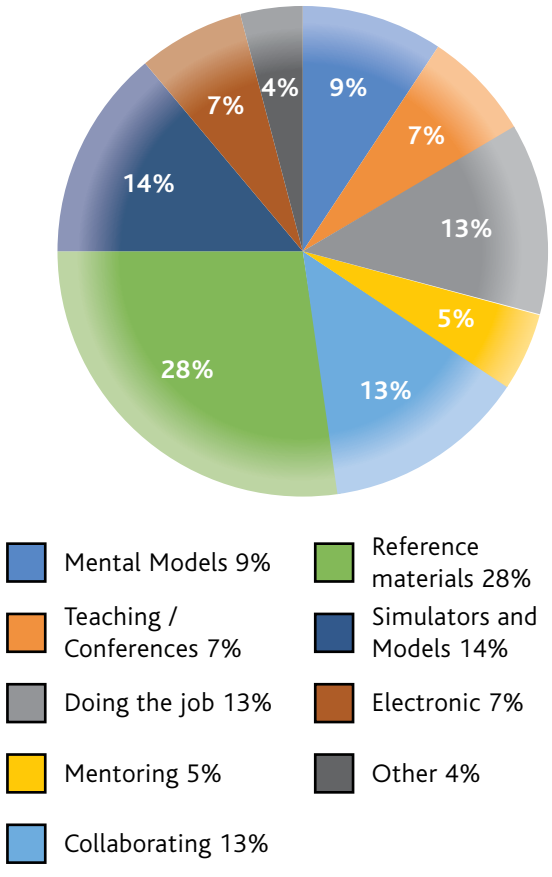
Experience	% of participants
Less than 5 years	12%
Between 5 and 10 years	35%
More than 15 years	12%
More than 20 years	41%
Vessel type familiarity	**% of participants**
Conventional with no aids (no thrusters and standard rudder)	25%
Some aids (bow thruster, possibly non-standard rudder)	31%
Higher degree of manoeuvrability (multiple props, thrusters, possibly non-standard rudders)	23%
Extra manoeuvrability (azimuth thrusters, bow thrusters)	21%

Training methods and tools – Q1, 2, 3, 4 and 7

The first question asked participants to select applicable training methods and tools from a list of 23 options, including an open option of 'other'. The large number of methods was offered to ensure that the widest possible range of methods was available to participants. The second question asked participants to rank in order of effectiveness, all the options they had selected at question 1. The intention was to categorise the methods into a reduced number of themes, but it is recognised that ranking a large number of choices was problematic. The average number of selections made was 8. The results were also categorised into methods of learning undertaken afloat or ashore, and categorised into collaborative methods or self-managed and organised.

The 23 options were categorised into 8 themes plus 'other' and the results are in Figure 1.

Figure 1: **Ranked effectiveness of ship-handling training methods**



It will not be a surprise for pilots and ship-handlers to read that participants indicated that 56% of all training is conducted afloat. What might be surprising is the single most effective method is reference materials which includes books, published materials and training films. Participants reported that 77% of all training is of a collaborative nature which includes mentoring, understudying whilst afloat with a commentary, and conversations both at work and in a social setting away from work. Practitioners are unlikely to be surprised by this finding. Other learning can be categorised as (i) self-managed (e.g. studying reference materials), (ii) formally organised/ managed (simulators) or (iii) blended learning (e.g. maritime colleges which includes both).

Sub-optimal manoeuvres (SOM) and room for improvement – Q5 and 6

For the purposes of the survey, sub-optimal manoeuvres were defined as manoeuvres that did not go quite as planned but did not necessarily result in an incident. Perhaps more time was required than expected to berth a ship for example, but it can be argued that any berthing or unberthing that does not result in additional paperwork, is successful. The causes identified by participants are in Table 2.

Table 2: Causes of sub-optimal manoeuvres

Option	Selected by %
Environmental conditions not as expected	72%
Planning	42%
Loss of awareness	33%
Incorrect information	32%
Other	23%
Unfamiliarity with task or manoeuvre	23%
Collaborative learning or mentoring has room for improvement	13%

The choice 'other' was chosen by 20 participants and the results were analysed to look for themes. 35% of the 'other' causes are attributable to poor communications and 29% to competence. These are core elements of a community of practice and are closely aligned. 18% are due to port infrastructure and this includes the quality of resources, quality of dynamic information, plant (tugs) and design factors (lock and berth fendering). These are outside of the control of the community itself, but familiarity with external shortcomings is to be expected. The three causes of fatigue, judgment and awareness (this was offered in Q4) all received one return.

Understanding the scope of continuation training (CPD) and reflective learning – Q7 and 8

The purpose of these questions was to assess the effectiveness and relevance of ongoing training whilst considering sub-optimal

Continued over on page 20

Figure 2: **Ranked effectiveness of ongoing training and CPD**

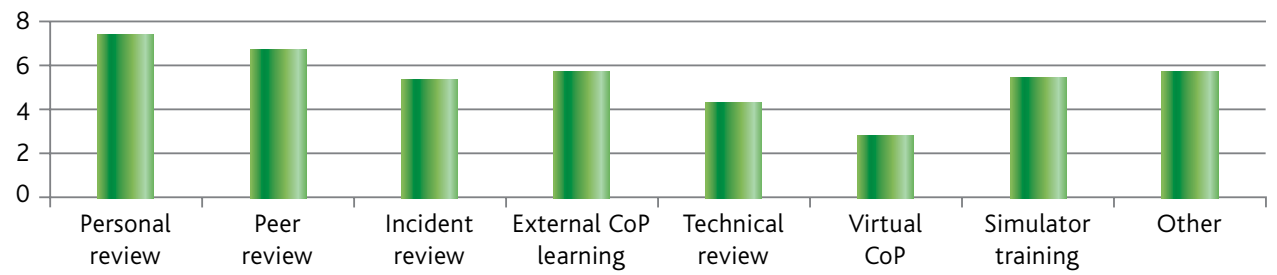
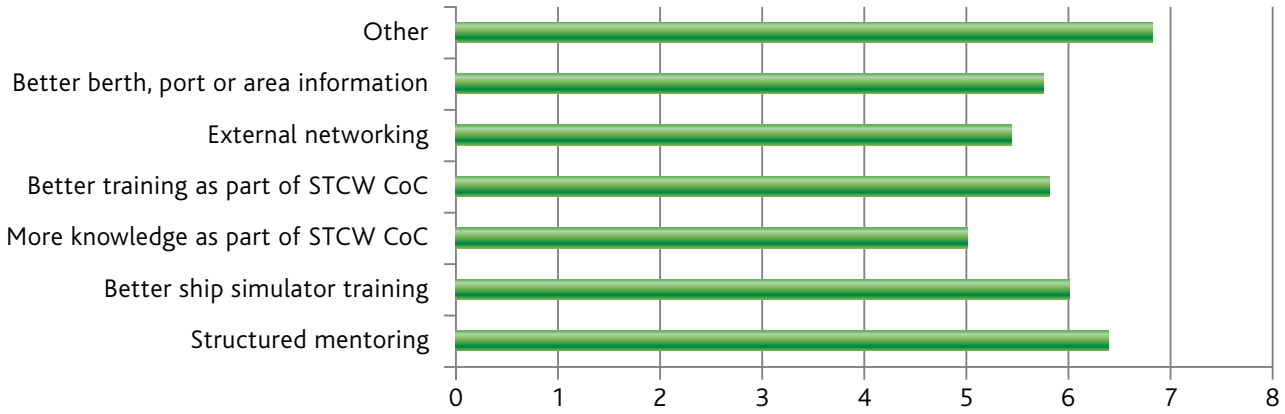


Figure 3: **Ranked suggested improvements post sub-optimal manoeuvres**



manoeuvres. The results are at Figure 2. Participants were asked for improvements that could be made following a sub-optimal incident they had either been involved in or witnessed. The results are at Figure 3.

The 'other' option was chosen by 16 participants and yielded the following themes after the narratives were analysed:

- Technology (access to live weather & environmental data)
- Resources (towage)
- Infrastructure (fendering)
- Competence (ship and shore)
- Over reliance on checklists
- Increase experience in unfamiliar manoeuvres and berths

The role of management in pilot and ship-handler training and good practice – Q9, 10 and 11

62% of participants indicated that training is primarily a role for practitioners and learners, augmented by collaboration within the community. When participants were asked what good practice looks like, a range of artefacts emerged after analysis of the narrative and these are in Figure 4. The highest-ranking score was for compliance with regulations. Competence was also quoted frequently (21% of responses) and further analysis of that yielded additional detail. The results are in Figure 5.

The role of pilots and ship-handlers in the future – Q12 and 13

57% of the PSHC do not consider autonomous ships to be a threat. Inadequate technology (51% of comments) dealing with the local area (21%), and the cost (6%) were the most common reasons given. It is not possible to speculate on how familiar participants are with the latest developments in Maritime Autonomous Surface

Figure 4: **The nature of 'good practise'**

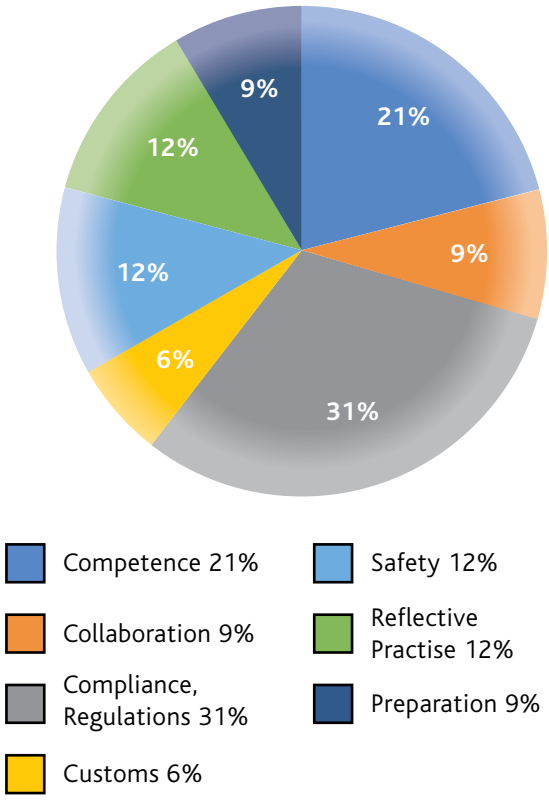
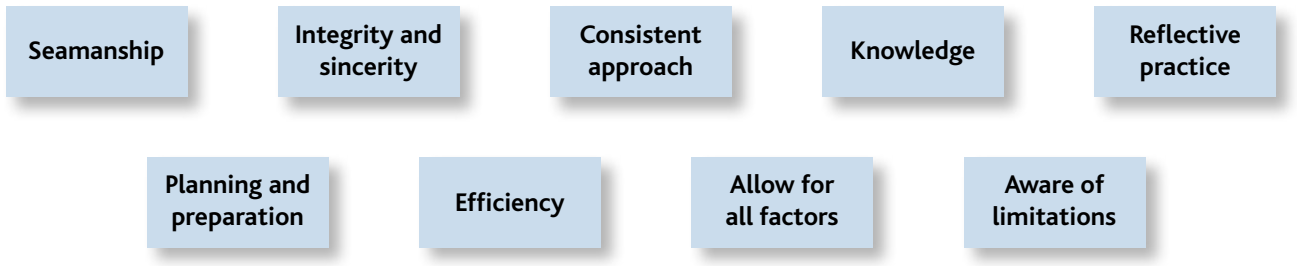


Figure 5: **The Nature of 'competency'**



Ships (MASS) technology due to access to the latest information and commercially sensitive projects. Nevertheless, 72% of comments are related to technology and how MASS would operate locally within ports and rivers. Other comments made included 'pushed by people with no knowledge', 'attempts by those without maritime knowledge to reduce pilotage', 'politics' and 'the human element has to be part of ship-handling; this will never change'. Other comments were made regarding vessel type (e.g. passenger ships or those carrying dangerous cargoes) and the location itself (some districts too complex or the risks are too high). Paradoxically, taking the potential of MASS to eliminate human error afloat (at the expense of moving it ashore), it could be argued that MASS would make such vessels safer.

Those who believed autonomy to be a threat said autonomy would reduce manning costs (38% of comments), technology could reduce human error (21%) and politics and lack of knowledge regarding the profession were drivers (10%).

Analysis and discussion

The scope and extent of collaborative learning demonstrates the existence of a maritime pilot and ship-handling community of practice. The most important component of pilot and ship-handling training is that which is undertaken afloat (which might be as expected) and led by practitioners. A degree of cooperation between practitioners and over-seeing authorities is required in a safety critical environment. This can be in the form of Standard Operating Procedures (SOPs), Codes of Practice, training regimes or legislation.

Training and sub-optimal manoeuvres

56% of effective training takes place afloat and this would be delivered within the CoP by practitioners and dedicated mentors. However, the single most effective training method is reference materials which could generally take place afloat or ashore. Leaving aside unexpected environmental conditions as a cause of SOMs for a moment, significant causes were identified as planning, loss of awareness and unfamiliarity with the task. These causes could reflect a shortcoming in training undertaken afloat. A deficiency within the CoP was the lowest scoring cause of a SOM and this reflects two disadvantages of a CoP. There are in-built defensive mechanisms that 'push back' against external direction and control, and there can be resistance to change within the CoP [4,5,6].

The role of management in pilot and ship-handler training and good practice

Pilots and ship-handlers indicated strongly in this survey that their training is largely a matter for the community. The survey reinforces previous findings with 62% of respondents saying that training is best managed by practitioners and not by management or the organisation. However, when defining 'good practice', complying with regulations or Standard Operating Procedures (SOPs) featured higher than any other attribute. This indicates a tension between competent practitioners and external controlling factors, and this is in keeping with other findings from this study. 'Competency' also featured in several responses and the analysis of what that means yielded 9 abstract attributes that merit further examination. The relationship between practitioners and those charged with managing them and producing SOPs is complex because both sides have 'positions' they might seek to defend. An illustration of mutual understanding of this, is a comment by a Harbour Master and Director of Pilotage at a leading UK port who said, "my pilots are a group of professional, spirited and independently minded individuals; I wouldn't have it any other way". This suggests that a level-playing field was established at the time, but there must be mutual respect and an understanding that holders of office have duties to discharge and they must account for their actions.

Conclusions and recommendations

Collaboration within a community and practitioner led training greatly extends the effectiveness of an organisation and this applies to pilots and ship-handlers. The management of CoPs is problematic, and this is a weakness because both good and bad habits can become embedded. Mutual respect and understanding of how CoPs work are to the benefit of all stakeholders and greater flexibility is required from both sides to achieve good practice. The notion of good practice encapsulates an ever-changing environment where improvements are encouraged and shared. Complacency within the CoP must be considered, and oversight required by regulatory bodies introduced sympathetically where there is a knowledge gap in the CoP. The role of pilots and ship-handlers is uncertain in the future, but they can increase their value today be embracing the ethos of community practice and exploiting virtual COPs.

This was a comparatively small-scale study. Further work in this area is recommended so that the understanding of training requirements and the effectiveness of training delivery is improved. This will in turn increase the usefulness of collaborative mechanisms but moreover raise awareness of their fundamental importance today and in the future.

Acknowledgements

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