Fellow Pilots,

F. Scott Fitzgerald wrote: “the test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function”.

There is at least one characteristic of pilotage that illustrates Fitzgerald’s maxim: the typical organization of pilotage as a government mandated and regulated monopoly – where a single group of licensed pilots operates in any given pilotage district – coexists with a general expectation that, in some key aspects, pilotage should not exhibit the downsides sometimes associated with monopolies.

A recent KPMG study, commissioned by Transport Canada as part of a Review of the Canadian Pilotage Act, highlights how universal the exclusive service provider model is: “most jurisdictions have concluded that the public interest and marine safety are best served through pilotage services being provided, on an exclusive basis, by a single group of pilots in any given compulsory area” (Pilotage Service Delivery Models Benchmarking Review, KPMG, February 2018, p.1).

The model presents clear advantages. First and foremost, it ensures pilots can discharge their duties free from undue commercial pressure, allowing them to exercise their professional judgment from a position of independence, in the interests of safety first. This is, by far, the best and most efficient way to ensure the highest levels of safe navigation in compulsory pilotage waters. With this comes great benefits, including environmental protection and efficient trade.

At the same time, pilotage is expected not to display the downsides of monopolies, such as a lack of innovation or an inability to rapidly adapt to changing circumstances. Since my election as IMPA President, I have been around the globe many times, visiting dozens of pilot groups in their home districts. I am happy to say that – as much as ever – the global pilotage profession is consistently demonstrating a flair for innovation and continuous improvement. Pilots are at the forefront of modern navigational technologies and, coupled with their expert knowledge of local waters, they are constantly finding new ways to maximize the efficiency of waterways, safely conducting operations that, not long ago, were not realistic.

I have said in the past that, in their own way, pilots help make the world a better place. For one thing, pilots support the world’s trade, and trade fosters better standards of living for everyone. At the same time, as species disappear at an alarming rate, pilots find innovative ways to help protect some, for example by efficiently re-routing traffic in sensitive areas so as to avoid marine mammals. As long as pilotage continues serving the public good in such positive ways, its future shines bright!

Simon Pelletier
PORTABLE PILOT UNITS
FOR ALL APPLICATIONS

- Coastal Pilotage
- Confined Navigation
- Docking
- Berthing
- Offshore Oil and Gas Manoeuvres
Dear Colleagues,

If ever there was any doubt about the influence and standing of IMPA we have recently been polled for our opinion by four different entities in one port, which is undergoing convulsion due to an outbreak of the cancer that is competition in Pilotage. As ever disaffected individuals are attempting to insert themselves into a successful and safe port’s regime.

The Port Authority, the State Safety regulator, the Pilots and the Consultants have all sought IMPA’s view on best practice and competition with regulations. This has involved conference calls in radically different time zones, legal research and some swift work including some lobbying to the Federal Government via IMO.

The absence of understanding of the prime purpose of Pilotage is sometimes breath-taking (like the OECD understanding of “small ships guiding big ships”!) and more importantly for the world, its plain worrying.

In July IMPA took the unusual step submitting a paper to IMO promoting a debate about very large vessels under Pilotage. The prompt for this was an Accident investigator pre-occupation with BRM and not systemic port problems or financial pressure on Pilots, inadequate infrastructure including tugs, or the decreasing manoeuvrability of these vessels as their machinery is tweaked to reduce emissions.

We enjoyed good support from a number of friendly flag states such as Brazil, France, UK and Italy.

The consequential Working Group debate was spirited and resulted in IMPA being tasked with preparing a detailed paper of examples of accidents and near misses of ULCS using data supplied by a number of Nations. IMPA’s point was accepted by IMO and the meeting report re-stated the need for adherence to the provisions of Resolutions A960. Financial pressure on Pilots, via KPIs were mentioned. We hope the message about the effect of competition in Pilotage will similarly be taken on board during this process. More about this effort is contained on page 14.

Nick Cutmore
THE ORC PILOT BOAT

As used by:
- Port Phillip Sea Pilots
- Mid West Ports
- Flinders Ports
- Svitzer
- Rio Tinto
- Esperance Port Authority
- The Port Authority of NSW - Port Kembla
- Port of Townsville
- Gladstone Ports Authority
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10/ Izurdia, Bayonne, France
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Vessel goes adrift as forward bollard fails

Crew were berthing a container vessel that had just arrived in port, and linesmen ashore were placing the mooring lines on bollards. Strong winds were forecast, so the Master and pilot agreed to use 14 lines in total, including five headlines. Some of the bollards could not be used because they were forward of a construction fence, so all five headlines were placed on the same bollard just forward of the bow.

Later, as the vessel was discharging cargo, winds increased as expected with peak gusts near 40 knots. The bollard forward with the five headlines was torn from its base. The forward spring lines parted followed in quick succession by the seven remaining lines. The vessel drifted off the wharf and the bow struck a nearby pier. An anchor was walked out, bow thruster and main engine were brought on line and the uncontrolled drift of the vessel was stopped some 30 minutes after the bollard failure. Shortly afterwards, tugs arrived and assisted the container vessel to anchorage.

Lesson learned

1. Mariners can never be sure of the holding power of a particular shore bollard. In this case, all forward headlines were on one bollard. Best practice is to spread the load to several bollards.

2. Once one part of a mooring arrangement fails, there is a high probability of the remaining parts failing in relatively quick succession. Loads can be distributed in a way that is beyond the design capacity of the system.

3. If high winds are forecast it may be necessary to take extra precautions, such as an anchor outboard, having engines and bow thruster ready, or having tugs on standby.

Berthing master to ask for any information. The successful completion of any berthing operation requires good communications and for all the participants to be aware of their roles. In this case, both were missing.

IMP Maritime Pilot Association (IMPA)

Dear Colleagues,

IMPA continues in its tireless efforts to increase pilot ladder safety. The Annual Pilot Ladder Safety Campaign is a very positive means of educating the industry about the hazards of pilot boarding and it is time once again to remind you that the Safety Campaign will run from October 2019. We cannot over emphasise that the veracity and force of the statistics relies on the number of responses received. The message is now hitting home in the Shipping Industry with the survey results being eagerly awaited by the likes of the International Chamber of Shipping (ICS), and many other stakeholders at IMO. Therefore, may I urge all members to support the campaign by reporting on all transfers they make during the campaign period.

01 APR 2019
Edited from NTSB report DCA18FM006

IMPA Safety Campaign 2019

By John Pearn – IMPA Vice President and Chairman of the Safety Sub-Committee.
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IMO Service Medal

During the IMO Assembly 101 Pilot Marcelo Cajaty received a medal from the Brazilian Navy for his service at IMO. In the pic Marcelo is accompanied by Luisa Burgess, Technical Advisor to Ecuador Defence Attache and Representative to IMO.
IMO 2020
Taking bold action to clean up shipping emissions by reducing the sulphur content in ships’ fuel oil

HOW?
- 0.50% reduced from 3.50%
- significantly less sulphur permitted in ships’ fuel oil
- 77% drop in overall SOx emissions from ships (2020-2025)

WHEN?
- From 1 January 2020

AIR POLLUTION & HEALTH
- Premature deaths avoided
- Significant reduction in shipping’s negative effect on human health through air pollution

Reductions in:
- stroke
- asthma
- cardiovascular disease
- lung cancer
- pulmonary disease

Cutting sulphur emissions helps prevent acid rain, which means:
- less harm to crops, forests and aquatic species
- tackling ocean acidification

WHERE?
- Health benefits felt globally
- Strongest in coastal communities
- Major impact in vulnerable areas

#IMOSulphurLimit #BreatheLife #BeatAirPollution
What is the sulphur 2020 limit?

From 1 January 2020, the limit for sulphur in fuel oil used on board ships operating outside designated emission control areas will be reduced to 0.50% m/m (mass by mass), from 3.50% m/m.

This limit is set in Annex VI of the International Maritime Organization (IMO) International convention for the Prevention of Pollution from Ships (MARPOL).

How can ships comply?

i) Use a compliant fuel oil with a sulphur content that does not exceed 0.50%
ii) If exceeding 0.50%, use an equivalent e.g. an Exhaust Gas Cleaning System (“scrubber”)
iii) Use an alternative fuel e.g. LNG, methanol
iv) Use onshore power supply when at berth

What must ships do before 1 January 2020?

Ship operators and owners must plan ahead. IMO has issued guidance, including ship implementation and planning guidance.

Who is responsible for enforcement?

Monitoring and enforcement of the new limit falls to Governments and national authorities of Member States that are Parties to MARPOL Annex VI.

Flag States (the State of registry of a ship) and port States have rights and responsibilities to enforce compliance.

What is IMO doing to help implementation?

IMO has been working with Member States as well as the shipping industry, bunker suppliers and refiners to identify and mitigate transitional issues so that ships may meet the new requirement.

A range of guidance has been developed, including specific port State control guidelines and guidelines on consistent implementation.

Are there any exemptions?

If a ship simply cannot obtain compliant fuel oil, they can complete a Fuel Oil Non-Availability Report (FONAR). This can be taken into account by port State control, but is not an exemption.

Where can I find out more?

A list of IMO measures to support implementation of the 0.50% limit can be found opposite. Please visit www.imo.org for further information.
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☑ Easy software updates
Unsafe pilot boarding and disembarking arrangements.

A report outlining an appalling disregard for safety, where a pilot’s life was placed in danger due to an entirely unnecessary risk.

The What the reporter told us:
On the evening of 17th April, the vessel in question asked for a pilot for an outbound manoeuvre. The weather conditions were good. The vessel was requested to rig a pilot ladder on the offshore side along with other requirements relating to the tug and unmooring procedures. The master confirmed that the ship was in all respects ready to sail. The pilot arranged to board the vessel from a boat shortly afterwards. As the pilot was boarding, he placed his weight on the ladder and the ladder slipped down about a rung’s length. He then tested the ladder once more and it held, and so he continued to board. When the pilot got to deck level, he saw that an officer (of approximately two metres in height and 140 kilograms in weight) was holding the ladder against the edge of the deck to prevent the ladder from falling down. Essentially, the officer was securing the ladder by using his body weight because the ladder had not been secured to any point AT ALL! Upon arrival on the bridge, the pilot immediately reported the situation to the master and received an apology. Upon completion of the pilotage, the pilot prepared to disembark. However, once again, the ladder had not been made fast and there was just one rung “hooked” into a piece of angle-iron welded on the deck. The pilot again complained that the ladder was not made fast but one of the crew members jumped on the ladder to show him that it was safe enough! As the vessel was outbound and there was other traffic waiting for pilot service, the pilot chose to disembark and there was no further incident.

The What the company told us:
CHIRP wrote to the relevant company who responded and thanked CHIRP Maritime for bringing this to their attention. The following points are a précis of the company response;

- Unforgiveable negligence of the crew who checked the securing of the ladder.
- It was reported that the ladder was fastened at one point to the deck, but this cannot be followed up with any degree of certainty.
- It is the first time that a case such as this has happened within our fleet.
- In view of the report we will take all necessary steps to prevent a recurrence.

CHIRP Comment:
The Maritime Advisory Board thanked the company for responding to this incident report and agreed with the company that this practice is simply unacceptable. Irrespective of whether the ladder was fastened at one point to the deck or not at all, it was not correctly rigged nor checked to ensure that it was safe for boarding / disembarkation. CHIRP has plenty of reports where ladders have not been correctly rigged at deck level, and some of these have been highlighted on our Facebook (https://en-gb.facebook.com/Chirpmaritime/) page. The use of shackles, spreaders, and angle-iron bars or similar are all illegal methods of securing a ladder. The ladder should have the loose ends of the side ropes secured (lashed) to eye bolts or deck pads and this should be at a distance from the ship side railings – not less than 915mm – so as not to obstruct the deck at the pilot embarkation position.

CHIRP once again reinforces the point that no pilot should ever feel that he is being forced into embarkation or disembarkation via a ladder that is believed to be unsafe. We make no apology for repeating this and encourage all pilots to report any unsatisfactory arrangements to port authorities and Port State Control regimes who should actively support their pilots in this respect.

Some interesting offerings to Sydney Pilots.

Photos: Michael Kelly
Grounding of ABFC Roebuck Bay

The newly-released Australian Transport Safety Bureau (ATSB) investigation of the grounding of the Australian Border Force Cutter (ABFC) Roebuck Bay on Henry Reef has revealed underlying safety issues with the effectiveness of ECDIS type-specific training, ECDIS software updates and the use of a single point feature to represent relatively large physical features on electronic navigational charts.

On September 30, 2017, shortly after midnight, the ABFC Roebuck Bay grounded on Henry Reef in the Great Barrier Reef, Queensland. The cutter was on a passage from Saibai Island in the Torres Strait Islands archipelago bound for Lizard Island, located about 71 nautical miles south-east of Cape Melville. The cutter sustained substantial damage to the keel, stabilizer fins and propellers, with hull breaches near the storage void and tank compartment spaces. There were no reported injuries or oil pollution.

While planning the passage from Saibai Island to Lizard Island, ABFC Roebuck Bay’s previously used passage plan was amended, with its route inadvertently plotted over Henry Reef. The ship’s ECDIS identified the reef as a danger to the planned route, however, the crew did not identify the danger either visually or by using ECDIS. The vessel continued on the amended route and grounded on Henry Reef just after midnight.

The ATSB found the crew’s ability to check the amended route was limited as their training was not effective in preparing them for the operational use of their on board ECDIS.

The ATSB says the investigation highlights that the safe and effective use of ECDIS as the primary means of navigation depends on operators being thoroughly familiar with the operation, functionality, capabilities and limitations of the specific equipment in use on board their vessel.

“ECDIS type-specific training needs to be designed, delivered and undertaken so operators have the required knowledge to confidently operate ECDIS as intended by the manufacturer,” ATSB Chief Commissioner, Greg Hood said.

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IMPA’s policy for engagement at IMO might be best described as measured and cautious.

We never comment ‘off-the-cuff’ at Plenary, and sponsorship of papers is similarly carefully managed. We believe this policy enhances our interventions when they are made. Some delegations’ constant interventions numb delegates and lead to people “switching off”.

Therefore, it was something of a departure for IMPA to submit a paper to the recent III6 meeting at IMO (Implementation of International Instruments) in respect of Accident investigations involving ULCS. IMPA have participated in the accident investigation working groups for many years for obvious reasons. Most of the participants are National Accident investigators.

IMPA was recently invited to a meeting with the UK’s MAIB (Marine Accident Investigation Branch) to consider a draft report into the collision of the CMA CGM “Centaurus” with the Berth and Straddle crane in Jebel-Ali in the UAE.

The MAIB recommended that the ICS (International Chamber of Shipping), IHMA (International Harbour Masters Association) and IMPA undertake a joint initiative to improve BRM on ship bridges. For a number of reasons all three bodies declined to follow up on this recommendation.

For IMPA one of the reasons that we declined was that the MAIB report had largely missed a fundamental issue in this (and an earlier ship/ship collision in the same Port) incident which was the Pilot was working to a KPI (Key Performance Indicator) which arbitrarily fixed a time to be taken for the Pilots assignments. The “Pilot” had also received no recognisable training. His pay was affected by his KPIs.

The IMPA paper for IMO also looked at commercial pressure from inter-port rivalry, the declining ability of VLCVs to manoeuvre and the patchy provision of tugs.

We prepared the ground by using contacts in France, Italy, Brazil, I.T.F., ICS & INTERTANKO to support the paper. Ahead of the opening of the meeting Bahamas sought out IMPA to express negativity, so this augured well some thought! In the event the paper (which you can view on the IMPA website) was forwarded to the Working Group on Accident Investigations after 12 delegations supported, against 5 who had doubts or were in opposition. Some preliminary work was done and IMPA will return with more information on incidents and near misses. We will seek information from IMPA members on these areas.

The report of the meeting (also on the website) recommended Member States bring A960 to the attention of Authorities responsible for Pilotage.

**Former U.S. Coast Guard Officer and INTERTANKO Delegate to Receive International Maritime Prize**

The prestigious International Maritime Prize for 2018 is to be awarded to Joseph J. Angelo, a former United States Coast Guard and International Association of Independent Tanker Owners (INTERTANKO) senior executive who participated in IMO meetings for many years, providing leadership on a number of key regulatory developments.

The IMO Council, meeting for its 122nd session in London last week decided to award the Prize to Angelo. In their nominations, the Government of the U.S. and INTERTANKO highlighted Angelo’s constructive and collaborative work with all stakeholders to achieve outcomes. Angelo was active in a number of IMO bodies, from 1980 until very recently and was always noted for providing answers rather than simply raising problems.

At INTERTANKO his long standing friendship with APA & IMPA President Mike Waston led to a “rapprochement” between the bodies after 20 years of hostility, and led to the signing of an MoU which he strove hard to keep foremost in the Pilot/Tanker owners relationship.

Joseph J. Angelo.
The advanced ADQ-2 provides AIS pilot plug functionality along with independent and accurate Rate of Turn measurements at an attractive price point. In combination with a suitable ECS package of your choice, the ADQ-2 is the ideal tool for applications like coastal pilotage and basic maneuvering.
The Future of Tugs in a Changing World

By Captain Henk Hensen.

Currently several means of transport and workboats are undergoing accelerated development towards automation and automated movement. Almost daily publications appear about automation in shipping. Names of large maritime industrial companies are often found in these publications, giving the idea that they are a major driving force behind these developments.

The question can and should be asked, how realistic are these developments? Are they generally applicable, applicable for certain sectors or trades, or perhaps not applicable at all?

In the recently published book Tug Use in Port. A practical Guide, attention has been paid to future autonomous or remote controlled tugs. As a sequel to this specific item, a recently published report has addressed the question: How will tugs and tug assistance evolve in the coming 30 years? What are the factors of influence? Is it just the important issue of automation, or are there also other factors that will play a role and have to be taken into account? The answer is "Yes." See, therefore, the full report http://www.swzonline.nl/news/10184/road-towards-autonomous-ship-handling-tugs. It is also these factors that are addressed in this article. They should be regarded in combination with the continuing automation processes on board ships and tugs.

Some basic situations to keep in mind:

• At present and also in the coming decades, there is hardly any uniformity in ships and this applies to a great extent to tugs as well.

• Worldwide, future developments will differ greatly by country, port, shipping and towing company. This particularly applies to the way automation progresses on board ships and tugs.

• The major components - ships, ports, tugs, pilots - of the maritime transport chain interfere. This means for instance that an increase in ship size or in its maneuvering capabilities has its effect on ports, pilots and tugs, just as a change in port layout or infrastructure has its effect on ships, pilots and tugs.

• Finally, the developments that will be discussed below can all be disturbed by trade wars, political conflicts, climate changes, etc.

Now the important factors that are expected to play a role in the coming 30 years and will have its effect on ports, port services like tugs and tug assistance:

Seaborne trade will increase. UNCTAD expects that seaborne trade will triple by 2050 compared to 2016. DNV GL estimates a lower growth of approximately the half. Even then it will have a large effect on ports and port services, like tugs.

Proportional changes in type of cargoes. According to DNV GL’s Energy Transition Outlook 2018 the world needs less energy from the 2030s onwards owing to rapid gains in energy efficiency. DNV GL forecasts that the primary energy supply peaks in 2032 while oil demand peaks in the 2020s and then decreases. Natural gas takes over as the biggest energy source in 2026. This includes a decrease of crude oil and other oil products to be transported after 2020 and an increase of natural gas. This will affect the infrastructure of ports and increase the number of offshore terminals and will consequently affect tugs and tug assistance.

Means of sea transport changes. The size of certain type of ships may further increase, e.g. container ships and gas carriers. In addition, new methods of sea transport may be developed and certainly all the activities at sea will introduce new design features for new ship types. Also other transport systems may take over. For instance, underwater transport may become reality or transport by pipelines, having its effect on conventional sea trade and ports. Tugs should keep pace with these developments.

The maneuvering capabilities of large ships, e.g. container vessel, ferries and cruise vessels, are expected to increase, reducing the need for tug assistance. It should however be said that even the most automated ships, such as remote controlled or autonomous ships, will still experience engine or steering failures as is the case with present ships, although possibly in a lower degree. If this happens at sea along the coast and such problems cannot be resolved in time, specific assistance of emergency towing vessels or suitable harbor tugs will be needed for such ships.
Tug assistance in adverse weather situations. There is another aspect which concerns in particular future ships with increased maneuvering capabilities in restricted waters. The situation may arise that when environmental conditions become such, for instance very strong winds, even these ships which normally would not use any tugs, have to use tugs to keep the ship under control. Consequently, there will always be a need for a sufficient number and power of tugs to be available.

Some more factors of importance:

- On a wider level, it is envisaged that the exploitation of the seas and oceans will increase which will bring more vessel movements and changes in the activities in and near ports.

- The growing size of ships and high safety requirements may further result in a need for tugs to make fast outside the breakwaters in wave conditions, and also because of the risks involved future developments may include more gas terminals located offshore and away from residential areas.

- Ports and transshipment areas moving into more exposed conditions could be a long term development, further supported by increasing offshore activities, offshore terminals and perhaps offshore (floating) ports with less possibilities of building long protective breakwaters.

It can therefore be concluded that ship handling in exposed conditions will continue to grow in importance, consequently tugs should be designed and equipped to be able to operate in these conditions.

During the coming decades a large variety in ships will be seen as indicated above, from well equipped vessels with a large degree of automation to, let us say, rather conventional ships. These conventional ships will still need tug assistance. In addition, it should not be forgotten that in many ports tugs have to do more than just handling seagoing vessels, as is explained in the book Tug Use in Port.

So, apart from the developments in the field of automation on board ships and tugs, other important developments are expected in the coming decades that will affect ports and port services such as tugs and tug assistance. All these developments result in high additional demands on tugs, tug crews and tug assistance. It is therefore of utmost importance that capabilities of tugs and tug crews keep pace and meet the requirements set by these future developments. At the same time the progress of automation on board tugs and ships may help to create tugs being fit for the future.

Whilst not strictly related to a Pilot boarding, it is indicative of how careless ships are with their own crew’s lives, so their slackness where you are concerned is comparable...

Taking vessel draughts – a dangerous task?

The following photographs were sent to MARS by one of our readers. For the aft draughts, the crew member can be seen being lowered over the side in a barrel via the ship’s stores crane. To take the draughts amidships, he has climbed down the pilot ladder and, now near the end of the ladder, is struggling to view the draughts below.

Taking the outboard draughts on large vessels may seem a daunting task, and can be dangerous. But need it be? Although the crew member in these photographs appears to have a lifejacket on.
Fiordland pilotage – an observation

By Hugh O’Neill.

Although having served as a Port Otago pilot since February 2007, I had never seen the Fiordland side of the business. When I mentioned this to the Captain of Celebrity Solstice in the post-pilotage debrief, he immediately offered me the spare Pilot’s Cabin. The Marine Manager gave his approval and finalised arrangements with the ship’s agent.

Josh and I took the ship out and it was a strange feeling not to be leaping off on a pilot boat after clearing the breakwater. The weather was excellent and the oceanic swell from the SW only sharpened the appetite for dinner. Josh piloted me towards the self-serve restaurant where the choice of cuisine ranged from Arabic, to Indian, Chinese, Malayan, Mexican, Italian etc. and even more choices for dessert. Intent on people-watching during our after-dinner stroll round the ship. We ended up at the theatre, which appeared as big as the Regent Theatre in Dunedin. After the show, we sampled some of the cabaret venues before retiring for an early night. The pilots’ cabins are immediately abaft the bridge so are about 50m above sea level: reading in bed was easy enough, but trying to sleep at the top of a 50m-tall rubber palm tree swaying in the breeze was a long-forgotten skill; it had been 35 years since my bunk was so far above the waterline.

The next morning, breakfast was a buffet arrangement on the bridge. The weather was perfect for our 0900 entrance into Dusky Sound, though the passengers on the foredeck were well wrapped-up in blankets, whilst we basked in the glasshouse of the bridge. Right on cue, a small school of dolphins posed for the cameras.

The scenery has changed little since Captain Cook first visited 246 years ago, which can create a surreal science-fiction experience of visiting another world.

Celebrity Solstice transited Dusky then Doubtful Sounds during the morning, which led us up to lunchtime. There is a well-timed break for lunch and a couple of hours relaxation before the final event of Milford Sound. During post-lunch coffee on the stern verandah, someone spotted a large whale on the port quarter. This was Nature watching in luxury.

The Fiordland experience terminates at Milford because this is the most accessible point by road. Here the overland passengers re-join this ship having travelled from Dunedin via Queenstown. Celebrity Solstice is one of the best-designed ships from a pilot’s perspective: not only does she handle superbly, with plenty of power on both her azipsods and her bank of bow-thrusters, but the instrumentation on the bridge makes for precision navigation and instils great confidence in capturing the multiplicity of dynamic forces. The bridge layout is such that the pilot and the master have parallel screens, and between them is the helmsman in close contact. This physical proximity enables a mental proximity and enhances communication. Keeping a critical eye on master and pilot was the Staff Captain to the right of the Captain (below). These two officers were an absolute pleasure to work with because of their easy professionalism and relaxed good humour.

With time to kill before the overland passengers’ return, the Captain was able to demonstrate just how manoeuvrable is his ship: from a speed of 12 kts, the azipsods were both angled 30 degrees to port and very quickly developed a Rate of Turn (ROT) of more than 30 degrees per minute i.e. in under 3 minutes we had turned 90 degrees and slowed down to 3 knots (caused by the resistance of the displaced water against the ship’s side).

Continued over on page 20

Passengers form a religious procession in tartan blankets.
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Though I doubt we would attempt such a manoeuvre in Port Chalmers swing basin, it is instructive to see what the ship can do. Once the overland passengers were embarked from a local excursion craft, we re-located to the foot of the Stirling Falls and the ship was turned slowly through 360 degrees within her own length.

On completion of this last manoeuvre, Josh piloted the ship around Dale Point and into open water; we disembarked to Pilot Launch Paerata for the short trip back to base then the long drive home to Dunedin. It was a superb opportunity to see this side of the business and to see some the challenges faced by pilots and masters. It was also very useful to forge a stronger relationship with the bridge teams and to see the ship handled as if on a manned-model course: the captain was able to demonstrate and discuss manoeuvres with the pilots and also train his team in ship-handling. I would strongly recommend that this opportunity be afforded to any of my colleagues who have not yet had the good fortune.

Finally, this (South-bound) voyage was aboard an excellent ship in ideal conditions, and with a bridge crew I knew to be top-notch. The challenges facing the Fiordland pilot will be far greater when on an unknown ship, with a bridge crew of unknown abilities. The weather also adds a huge challenge to the whole operation, as strong winds, driving rain and low cloud base are not infrequent. The week before, heavy rains had produced a torrent of 14 knots in the Milford River with trees and debris adding to the hazards, and winds exceeding 100 knots at times. Just getting aboard the ship in heavy weather will present the first major challenge. Hats off to the Fiordland Pilotage Service.
Lifejackets - attaching and fastening crotch straps

We are our own worst enemies! How many times have we heard this before?

Recently, I saw a number of wonderfully produced YouTube videos showing Pilots embarking and disembarking ships. What is noticeable and alarming is that some Pilots continue to transfer wearing lifejackets without crotch straps fitted and secured. How is this poor practice even approved before posting for worldwide viewing? What example does this show? Some pilots feel they are good swimmers or are fit and agile and they are almost immune from falling into the sea during transfer. Some Pilots complain that the straps are uncomfortable, cumbersome and become a snagging hazard. Our biggest enemy is complacency and must be guarded against.

To perform optimally, lifejackets must be retained around the body of the wearer, self-right and maximize the airway freeboard of the wearer. However, evidence suggest otherwise. Specific reference to lifejackets 'riding up' over the torso and head of casualties have been noted in accident reports; some fatal. (MS Sleipner, Ouzo, Samphire of Wells).

**Purpose of this article**

To educate and raise awareness of the benefits of fitting and wearing crotch straps with a lifejacket and or Pilot Coat.

**Background**

In August 2006, the yacht Ouzo was involved in an incident in which all 3 crew died. The MAIB report No. 7/2007 considered it likely that all 3 crewmembers would have been able to survive for far longer in the water if they had crotch straps fitted to their lifejackets. This report was the trigger for instigating a programme of research that would ultimately provide the first conclusive evidence of the effectiveness of crotch straps.

**RNLI research project**

Between November 2012 and June 2013, practical trials were conducted in a sea survival pool at the University of Portsmouth using volunteers and an anthropometric manikin, designed to establish if lifejacket performance is improved by using a retention system (crotch strap), when entering the water from a height (1m and 4m) and when exposed to wave conditions for a prolonged time (3 hours). Both these methods produce upward vertical forces which can be applied to a lifejacket and cause it to ride up the torso of the body, reducing performance.

**The conclusions were as follows:-**

- Wearing a crotch strap doubled the amount of time it took for the manikin to aspirate 1.54 litres of water. This volume is the lethal dose of seawater for drowning a person weighing 70 kg and indicates the amount of time a lifejacket provides protection to the wearer’s airway.

- Wearing a crotch strap tightly fitted (but so that it does not cause any discomfort) improves lifejacket performance more than wearing the crotch strap more loosely.

- It improves airway protection both when stepping into the water from height and during prolonged wave exposure, however the magnitude of the improved performance when wearing a crotch strap is much greater during prolonged wave exposure than stepping into water from height.

- The results of this research were presented to the International Standards Organization (ISO) committee on lifejackets to persuade them to incorporate ‘a means of retention’ to their standard, ISO 12402-1:2005 Personal Floatation Devices (New Edition under development). ISO 12402 requires manufacturers to prevent lifejackets from being dislodged or slipping off during testing (i.e. retention must be considered in the design, but a retention system is not required).

- For the first time, the benefit of wearing a crotch strap with a lifejacket has been proven through rigorous ground-breaking academic research.

**AMSA safety equipment project**

A Report dated November 2008 included the performance testing in water of PFDs and Integrated jackets used by Pilots. Participants entered the pool from a 3m platform with their arms crossed over their chests to assist in holding their jackets down. Despite each jacket being held down, the trials showed that ALL jackets rode up the torso, ended up close to the neck and failed to properly support the body unless some form of strap around the legs or crotch is used. A consistent recommendation from these trials by the participants was, “always wear a strap to secure the PFD, or jacket down against the torso, or the jacket will ride up.”

The pool trials conducted in this study confirmed the findings of the inquiry into the fatalities and injuries suffered during the Sydney to Hobart yacht race in 1998/99. This inquiry found that sailors who were not using crotch straps with their PFDs, would often experience the PFD riding up their torso to their neck and failed to provide suitable support.

**CASE STUDIES**

**Foundering of the MS Sleipner**

On 26th November 1999, the catamaran MS Sleipner was on its daily northbound route between Stavanger and Bergen in poor weather conditions with 85 persons on board. She foundered on passage and all persons ended up in the water. A total of 16 persons died, all by drowning. Passengers reported that many of the lifejackets came loose, some slid towards the throat and threatened to strangle them. The report identified that lifejackets must have crotch straps and sufficient buoyancy to keep an injured person’s head above the water and must also turn an unconscious person into the correct position, face upwards.

**Pilot falls overboard during disembarkation (Safety Digest 3/2000)**

A Pilot fell overboard while disembarking the Nedlloyd Djibouti as she approached the Sunk Pilot Station. The Pilot was wearing a Sea Safe Coat which automatically inflated upon immersion. One of the lessons from this incident was, “when wearing coats of the Sea Safe type, the use of the crotch strap is recommended to prevent the coat from riding up the body when inflated. Ensuring the coat does not ride up, will help retain water around the body, giving a wetsuit effect”
Samphire of Wells

On 16th December 1999, two men manning an open 4.26m dinghy ‘Samphire of Wells’ left Burnham Overy Staithe on the North Norfolk Coast for a 6.5 hour passage to Wells Harbour. The dinghy never arrived. Both occupants, when eventually found, were wearing fully inflated lifejackets. One was found floating vertically with the lifejacket around his head and the second, the lifejacket was found to have ridden up over his ears. Neither lifejacket was fitted with a crotch strap. It was an ‘optional extra’ on the type of lifejackets worn. A feature of this accident was that although both victims were wearing lifejackets, the cause of death was drowning. The accident report identified one of the underlying reasons why neither of the occupants survived was ‘lack of any means to prevent the lifejackets from riding up over the victims heads.’

An MAIB Safety Flyer issued after the incident involving the yacht Ouzo in 2007, eight years later, stated “Crotch straps should not be ‘optional extras’ on lifejackets; they should be supplied, fitted and worn”

Why you should always attach and fasten your crotch strap

If you fall from any height with no crotch strap, depending on the make and model of the lifejacket, the inflated lifejacket will ride up potentially over your face and in some instances, can come completely over your head, with the force of impact, leaving your mouth perilously close to even the smallest splashes and waves. Wearing crotch straps will keep your lifejacket in place and in the correct safe position.

If unable for some reason to deploy the lifejacket spray hood (if fitted), waves continuously splashing over your mouth will cause a small amount of water to be ingested, some of which may enter the lungs. The more forcefully and completely the waves cover the mouth and nose, the more water is ingested and these mouth immersions cause you to drown. It is an awful and protracted way to die. Falling into cold water, the first reaction is to gasp with shock. The colder the water, the greater the chance of death. This short-lived reaction means that you are uncontrollably and indiscriminately gulping for air, so the closer your mouth is to the water, the more water you’ll gulp. Irreversible drowning occurs when 1.54 litres of seawater for a 70 kg man is aspirated (Modell & Moya, 1966).

Conclusions

The aim of a retention system (such as a crotch strap) is to improve performance by maintaining the lifejacket around the torso of the user, in order to provide better airway protection.

Many manufacturers supply lifejacket retention systems (crotch straps or thigh straps) either as standard or as an accessory. Crotch straps can be made to fit any lifejacket. Universal crotch straps can also be made which loops over the waist belt bypassing the clips.

It is essential that you have a crotch strap, or straps, fitted and snugly tightened. The straps keep the lifejacket close to the torso, improves flotation angle, and keeps the airway clear. They also prevent the casualty falling out of the lifejacket when being lifted out of the water. RNLI research shows that snugly fitted crotch straps increase survival rates by up to 30 percent in comparison with lifejackets that do not have them fitted.

A correctly worn lifejacket will keep you alive, support you even when unconscious, support and protect you until help arrives, BUT only if you keep YOUR lifejacket from RIDING-UP!

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By Winston Singh, Senior Marine Pilot at Trinidad and Tobago Pilots’ Association.
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With ships becoming even uglier..

It is a pleasure to show this picture of the Ecuador Navy sail training ship “Guayas” entering Belfast.

She is a three masted steel barque built in Spain. She has 3 ‘sisters’, the “Gloria” (Colombia), “Simón Bolivar” (Venezuela) and the “Cuauhtémoc” (Mexico). The four ships basic design is very similar to the German vessel “Gorch Fock”
Pictured on the “Wellington” on 4th July 2019, L to R, Simon Pelletier, Captain Gurpreet Singhota and Nick Cutmore. It was Nicks 20th Anniversary of joining IMPA, and fortuitously fell on an IMO free day during III6 (see report elsewhere).

Captain Singhota is a Master Mariner, retired IMO staffer, and good friend of IMPA.

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