



THE PILOT



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UKMPA Regions

REGION NO.	AREA COVERED	PORTS
1	London, South of England and Southampton including the Isle of Wight	London, Medway, Dover, Littlehampton, Portsmouth, Southampton, Cowes
2	All ports between Crouch and Cromer	Crouch, Harwich Haven, Gt. Yarmouth
3	All ports on the East Coast of England between Cromer and Berwick Upon Tweed	Kings Lynn, Wisbech, Boston, Humber, Seaham, Tees Bay
4	Scotland	Forth, Perth, Dundee, Aberdeen, Peterhead, Inverness, Cromarty, Sullom Voe, Lerwick, Orkney, Stornaway, Clyde
5	Northern Ireland, North West England, North Wales including Anglesey and Deep Sea Pilots	Londonderry, Belfast, Barrow, Heysham, Liverpool, Manchester
6	South Wales and South West England, Westward of the Isle of Wight	Milford Haven, SW Wales, SE Wales, Gloucester, Bristol, Falmouth, Scilly Isles, Fowey, Plymouth, Dartmouth, Teignmouth, Poole

If you require local secretary's details, please contact the UKMPA secretary: secretary@ukmpa.org

Chairman's Report John Pearn



I was once asked by a previous Chairman of the UKMPA, whilst we were tackling a particularly difficult and controversial issue, 'Why do we serve on Section Committee?' My response was that when I was experiencing difficult circumstances, many pilots at the time, who were unknown to me, had burnt the midnight oil working hard to protect not only my interests but also those of the profession. In the following years I have had the pleasure of meeting many of those gentlemen and I consider it both an honour and privilege to follow in their footsteps as I assume the conduct of this fine organization from Don Cockrill.

I have worked closely with Don for over ten years now on Section Committee and can only marvel at the commitment and dedication he has shown to protecting pilots' interests. Even though he is easing his way slowly into retirement we have managed to persuade him (or rather managed to persuade Wendy) to take on the role of Secretary General, which will allow us to continue to benefit from his experience for the coming few years. Whilst we have managed to keep hold of Don, sadly Martin Chatterton could not resist the call of retirement and the opportunity to leave behind his maritime piloting skills to develop his aviation piloting skills. We wish him a long and prosperous retirement with many safe landings.

Having now taken the captain's armband from Don, I am very aware that pilotage is not a solo effort but it is very much a team game. On

board a ship you are working with the bridge team and are responsible for coordinating the services within your port to bring the ship successfully alongside. Similarly being Chairman of the UKMPA is not a one-man role. The UKMPA has a very dedicated team that benefits from the work of a great many people. We have an excellent lineup on Section Committee that generously gives their time to attend meetings on behalf of the association and work tirelessly at home researching issues and sharing advice. It is rare that I will have to wait any great length of time for a response to a question, with work being the most common vindicating factor. We are also most fortunate to have an outstanding Technical and Training Committee led by Nick Lee, for anyone who attended conference will no doubt have been most impressed by the quality of both his and Gareth Wilson's presentations. Those of us who are members of the PNP are also well served by pilots who act as trustees and alternative trustees to ensure our security long after we have berthed our last ship.

Moving onto the coaching staff. The UKMPA also profits from very close relationships with EMPA and IMPA. Pressures on pilotage often emanate from the corridors of Brussels or other quarters of the shipping world. Moreover, it is very rare that local issues are unique and we frequently benefit from the advice of other pilots worldwide, who may have experienced similar problems in their ports. Additionally the UKMPA and its members have many friends outside the profession, none more so than Drew Smith and Ken Pound. Their advice and expertise lies in insurance as well as other maritime matters well beyond the scope of the insurance policies they provide.

The UKMPA has one friend in particular, who has looked after our needs longer than most, our President, Lord Tony Berkeley. He has provided wise counsel to many past chairmen and continues to do so. He is certainly no sleeping Lord. He is deeply interested in our affairs, and provides an astute perspective based on considerable expertise as a past harbour commissioner and as having many years engaged in transport issues in the House of Lords and in Europe. He is most generous with his time, advice and not least importantly his contacts list. We also continue to be assisted generously by many ex-pilots who have either retired or have left the profession and moved on to other parts of the maritime world. Over the years the UKMPA has benefited greatly from these contacts who often, absent mindedly, forget to set the clock ticking when we approach them for advice.

As with all great teams, we would be nowhere without a secure club base. We would not be doing our job successfully if we did not perform as you wanted us to. If there are issues that you feel we need to address or aspects that cause you concern please do not hesitate to let us know. You do not need to wait for conference, our contact details are opposite and we are most happy to hear from you at any time.

For fear of stretching this sporting metaphor too far: I couldn't do this job if I could not get to the ground. It is my colleagues at Milford Haven who allow me the time to do this job, often swapping turns at short notice to allow me to attend meetings, inconveniencing both themselves and their families.

It just remains for me to wish you all a prosperous and safe 2016.



A message to UKMPA members from your outgoing Chairman



If you were able to attend conference on board HQS Wellington in early November, you will I hope have experienced

another excellent event with a broad variety of technical speakers and a fascinating visit to Lloyds as part of the evening reception. The success of the event is of course down to the excellent organisation and coordination by our secretary, Peter Lightfoot, and in no small part to the significant financial support of our many sponsors who enable the delegate costs to be maintained at an attractively affordable level to members.

Had you been at conference you will also be aware that on behalf of the UKMPA membership I was presented with a magnificent gift in the form of an inscribed decanter and glasses with an appropriate libation to put in it and enjoy. Thank you all, it will whenever I use it remind me of five terrific years of serving our highly respected Association as your chairman.

I had intended saying a few words as I handed over to John but, despite my preparation, found I was lost for

words – something which those who know me (and who were not there) will probably find hard to believe!

When I agreed to take over the role in 2010 I was determined to try and raise the professional respect and profile of the UKMPA within all areas of the UK ports and shipping industries and government departments and to continue to re-establish our position in the international fora of IMPA and EMPA. I am not going to go over all the milestones we (it's a team effort of you, the members and your executive committee) have achieved in the interim but suffice to say I think it is fair to reflect that most of those aspirations for the Association have been achieved despite some significant challenges along the way.

However, it is imperative for the maintenance of public navigational safety (and commercial efficiency) within our ports that this momentum is maintained and not allowed to falter. With the enhancement of our role within the maritime community comes a significant additional workload. It has been very clear to your committee for the last ten years that an organisation such as ours cannot be effective by relying entirely on the voluntary efforts of individuals alone. As we have all seen on board ships, the manning

levels within pilotage departments of UK ports have also had to adapt to economic pressures (whilst hopefully maintaining standards). Inevitably, the increased duty obligations impact on individual's available free-time and roster flexibilities that enable the chairman and committee members to attend all the meetings, seminars, conferences and functions which are a standard part of any effective organisation today. Thus having stepped down as chairman, I have taken on the role of Secretary General – in a voluntary capacity – to work with John in supporting him by attending certain meetings, etc., on his behalf where appropriate (and also standing in for committee members as necessary). The aim is throughout the coming year to determine what the actual role of an employed SG will be in the future and what the package for the employment of a SG will demand financially.

Thank you again for your support in my capacity as chairman. Please do continue without hesitation to offer the same fantastic support to John and his team on Section Committee.

Wishing all a safe, healthy and prosperous 2016.

Don Cockrill
Secretary General

Don was presented with a gift from members to thank him for his work as Chairman



127th Annual Conference Mike Roberts



Members gathered on the 4th November for the 127th Annual Conference on board HQS Wellington in London. This was Don Cockrill's final charring of the Association's conference; he has now handed over to John Pearn, who has been Vice Chair. Association business included reports from the Chairman, EMPA Vice President Mike Morris, Treasurer Bob Watt and Nick Lee Chairman of the Technical and Training Committee.

Lord Tony Berkeley, our President, gave his customary personal insights on parliamentary current affairs. Voting by MPs and Lords now takes a long time because there are many more members than there used to be in the upper chamber. He explained economic difficulties and the position faced by ports as a result of the loss of some heavy industry and the increased competition between ports, especially in the container sector as capacity continues to outstrip demand. The EU low sulphur regulations are starting to bite, as are actions by operators in their attempts to cut costs. He congratulated Don Cockrill for his work as Chairman over the past five years and for trying to bring the Association closer to the industry.

Don Cockrill analysed the Association's activities, how it relates to other organisations and also how it increases its own efficient administration. Don talked about the continued relationships and work with the Department of Transport on Marine Pilotage and also a new relationship with the UK Major Ports Group and British Ports Association on their marine pilotage forum. Both of these are important to the work we do as an Association. Members of Section Committee, as well as other Association members, have attended industry seminars, such as London international Shipping Week and Autonomous Shipping. The Association continues to have representation at Port Skills and Safety and continues its review of the marine pilots' certificate, MCA steering groups (where we are involved in the Port Marine Safety Code), the VTS steering group and Safety of Navigation. The Association's other projects are the North UK P&I Club guidance on the Master/Pilot exchange, the British Tug Association with their towage operations guide, and a presentation to insurers at Lloyds. With the *Hoegh Osaka* incident the Association has dealt with media, including a successful radio interview and numerous statements used by the media.

Don continued to show how the Association had reviewed its operations in efforts to become more efficient to the membership, which included requesting local members to attend meetings to keep costs more manageable. Discussions with Unite are ongoing to improve members' representation with local offices, especially where there have been industrial issues at local ports. Don urges those who are local secretaries to promulgate information to local members in a speedy manner and also where necessary to provide feedback to the Section Committee, such as good ideas and initiatives

on operations at local ports. The Association is represented on Twitter, its exchange of photographs of bad pilots proving useful to members.



Bob Watt, our Treasurer, briefed on insurances. A number of claims are currently being processed from members who have suffered personal injuries. He said Circle Insurance brokers were negotiating with underwriters regarding insurance premiums. Bob Watt interrupted his presentation to invite the Shipping Minister to speak to delegates. Bob reiterated to members the quality of the service they received from insurance policies, how premiums were likely to increase and also how emergency procedures work.

Shipping Minister Robert Goodwill MP addressed delegates. He stated the importance of maritime trade to UK plc and how proud he is to be part of a historic trust that looks after *M.V. Coronía*, one of the little ships involved in the Dunkirk evacuation, reminding us all of the importance of seafarers. He outlined the role of Government and some changes ahead, including proposals for revamping the MCA. He made delegates conscious of his knowledge of investments into maritime training, such as the new maritime training centre at the Wirral, apprenticeships in ports and the work the Association is doing on the marine pilots' certificate. He further congratulated the Association over the North P&I Club, the guide on the



Master/Pilot exchange information, and the review of the Port Marine Safety Code. A number of questions to him from delegates centred on proposed EU ports regulation.

Peter Lightfoot, Association Secretary, spoke about a meeting the Association held at members' local ports and about Association circulars and those members of Section Committee up for re-election. There was explanation of nominations for Alternates and Trustees of the Pilots' National Pension Fund.

Bob Watt, Treasurer, talked about Association finances and the impact of reorganisation of EMPA on membership fees. This, as Bob put it bluntly, means that members have to sacrifice a pint of beer a month, membership fees increasing by £4 per month (members should remember that these professional membership fees are allowed tax relief by the HMRC).

Nick Lee, Chairman of the Technical and Training Committee, introduced the operation of his committee. The T&TC has been involved in a number of projects through the year, such as the Port Marine Safety Code - Guide to Good Practice following the Apollo accident, the Marine Pilots' Certificate and lifejackets not righting the casualty. The T&TC are making investigations into Pilot boat crew training and have approached both RYA and RNLI. Chris Hoy of the T&TC is investigating the requirements for revalidating certificates of competency under the Manila amendments, information to be shared with members.

Concluding this AGM was a lengthy debate on the relationship of the Association with Unite, whose representative at the AGM was Jane Jeffrey.

Members can read the full transcript of the conference proceedings of day one, because it was recorded, by logging into the UKMPA website members' access and going to the conference section on the menu bar.

That evening delegates attended a reception and tour at Lloyds of London. John Clandillon-Baker has provided an article on the event.



On the second day conference delegates attended a set of educational seminars on a number of topics, which included presentations by Phillip Roche of Norton Rose who talked about post incident legal issues following an accident, and by Steve Clinch Chief Inspector at the MAIB who discussed the effectiveness and purpose of the MAIB and its inspectors, especially following a recent case which tested the fundamental principles of the MAIB. Jeremy Smart of the MCA talked about the enforcement unit he leads which has the task of ensuring compliance with safety and pollution legislation. Alasdair Mackenzie spoke about his role in parliamentary outreach, educating the public what Parliament is about and how lobbying works in the case of the Association and increased regulation. Richard Steele of the Port Skills and Safety organisation updated us on the marine pilots' certificate, for which the Association is part of working group.

Phil Cowing and Martin Gough from Associated British Ports discussed the newly implemented ABP apprentice pilot training programme. Gareth Wilson from Tees Bay Pilots explained the work of the Technical and Training Committee is doing about head protection for pilots.



Phil Cowing

Lloyd's Reception John Clandillon-Baker

The 127th UKMPA conference was held on board the HQS Wellington on 4 and 5 November 2015. On the evening of the 4th the UKMPA hosted a reception for delegate, speakers and guests at Lloyd's of London. Love it or loath it, there's no denying that the building is impressive. Although the exterior is all pipes, glass and steel, the interior has some surprising and well integrated heritage elements, much of which was dismantled and reassembled from the old Lloyd's building. Our reception was held in the wood panelled Old Library room which was originally created in 1928 for the original Lloyd's building which occupied the site. Lloyd's moved from that building when they outgrew it in 1958 and moved to a new building across the road, but re-acquired the building in the early 1980s and prior to demolition removed the library for re-use in the new building.

In addition to the reception all those attending were given a guided tour of the building in groups of 15. Our group's guide, Anthony Barrable, proved to be a fount of knowledge and he provided us with a comprehensive history of Lloyd's and the many artefacts and documents held in the display cases.

A key founder member of the Lloyd's, as it exists today, was John Angerstein who in 1774, being concerned that the 'coffee houses' were becoming glorified gambling establishments, was instrumental in making Lloyd's a respected, well-regulated institution, run for the benefit of all those who did business there.

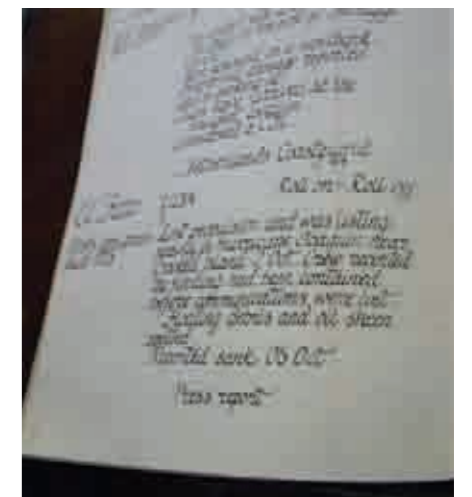
When the brief for a new building was put out for tender, in order to provide a permanent building it was decided to have 14 floors, even though only five were required at that time. They currently occupy the first seven floors, plus the 11th floor which houses the eighteenth-century

'Adam' Council Room and a historical archive display area. The Adam room was originally installed in Bowood House in Wiltshire having been designed by Robert Adam in 1765. Bowood fell on hard times after the War and in 1956 part of the house was demolished and Lloyds purchased the room at auction and incorporated it in their new building in 1958. It was then dismantled again in 1986 to be incorporated into the current building.

The most famous feature associated with Lloyds is the Lutine bell from the French frigate *La Lutine* (the sprite), which surrendered to the British at Toulon in 1793 and was renamed HMS *Lutine*. In 1799, whilst carrying a cargo of gold and silver bullion, she sank off the Dutch coast.



The cargo, valued then at around £1 million, was insured by Lloyd's underwriters who paid the claim in full. The bell was salvaged and installed at Lloyds. It was originally rung when news regarding overdue ships was received: once for bad news and twice for good news. Its role was purposeful in that it ensured all brokers received the news at the same time, thus preventing unscrupulous dealers from trading their exposure! Today it's generally only rung on ceremonial occasions, but was rung once for 9/11 and the Asian Tsunami and twice for the good news of the births of Prince George and Princess Charlotte. It is also rung to announce the beginning and end of the two minutes silence on 11 November.



Criminality in the law of marine pilotage Barrie Youde

The criminal law has a significant role in the law of marine pilotage, largely because the statute law of pilotage permits the public imposition of compulsory pilotage upon certain vessels in certain areas. It is only the statute law which permits any such imposition; and wherever it does not do so the general international liberty of navigation applies. As a matter of propriety, there is also a public *quid pro quo* at common law that the highest possible standards are called for wherever pilotage is compulsory (the *Sea Empress*, 1999), which is fully supported and endorsed by the provisions of the Pilotage Act 1987.

Section 15 of that Act imposes criminal liability upon a shipmaster who might fail to engage the services of an authorised pilot when such services are offered; and Section 17 imposes criminal liability on any unqualified person who might conduct pilotage after an authorised pilot has offered his services. Sections 18 and 19 impose further criminal liability on a shipmaster who might find himself in default; and Section 20 of the Act recites a series of criminal offences which might be committed by an authorised pilot, with imprisonment attaching in default. Overall, Section 2 of the Act imposes upon a Competent Harbour Authority (CHA) the statutory duty to "keep under consideration" relevant matters relating to compulsory pilotage. Very clearly, the CHA is obliged to keep under consideration the statutory criminal provisions outlined above, and has a public function to apply them properly. In the case of a breach of any of the provisions mentioned, it is the function of the CHA to place a prosecution into the Courts. There have been numerous prosecutions under Section 15 or its earlier statutory equivalents, all of which have been put into the Courts either by the Competent Harbour Authorities or their predecessors, the local Pilotage Authorities.



It follows, likewise, that a CHA today is bound by the same criminal laws. If a CHA might fail to take every proper step to maintain a proper pilotage service it is liable to find itself in breach of both the common law and its Section 2 duty to keep matters under consideration. These obligations are further upheld by the Wednesbury principles of reasonableness as established in the Court of Appeal in 1948. It seems to follow quite clearly, therefore, that criminal liability would attach to any CHA which might provide to a ship an unqualified or under-qualified pilot when a qualified pilot is ready, willing and able to serve and has offered his services. This would be particularly so if the CHA were then to levy a financial charge against the ship in the same circumstances. Such an event is not unknown but has yet to be placed before the Court. The civil law has, however, found very clearly that it is the duty of the CHA to provide to any ship a properly qualified pilot on request (the *Cavendish*, 1993). Very clearly, a CHA is heavily burdened with public responsibility and public trust. Many CHAs (particularly at the major ports) operate also (at the same time and from the same premises) as commercial bodies and there is therefore a major public concern to ensure the propriety of their activities.

This was reflected in the House of Commons Select Committee on Transport Report on Marine Pilotage published on 7th March 2013.

Much legality necessarily takes second place behind public safety. Where, however, any breach of public safety occurs, the relevant laws are then of strict application. This is recognised in the Report of the Department of Transport, Local Government and the Regions ("The New Humber Pilot Service" – April 2002) at Paragraph 10.9 thereof. The laws of pilotage are laws of public safety. They exist for no other reason. It should be noted that the power given under Section 2 of the Act to impose compulsory pilotage anywhere is restricted to the imposition on the grounds of safety alone. There is no other justification or warrant for the imposition of the obligation.

It is also to be noted that although pilotage enjoys an ancient and venerable position at law, all of the authorities cited above are of modern legal application, the oldest being the Wednesbury case of 1948. Many people dismiss the occupation of pilotage as something quaint, picturesque, romantic, historic and otherwise little known; and not of any real modern concern. The Pilotage Act of 1987 declares otherwise.

Concept Ship

Autonomous shipping in our industry is occupying the attentions of designers and engineers in partnership with Flag States and Classification Societies. Over the next few years the proposal of Autonomous Ships is likely to be fiercely debated. Our Association was represented at the Nautical Institute seminar on Autonomous Ships held in September 2015 at Bristol, and our members' notes from the meeting will be published in the next edition. This article by DNV – GL looks at the feasibility of a small autonomous coastal ship designed to be environmentally friendly whilst delivering cargo packages. *The Editor*

The Next ReVolt

The EU's road network suffers from chronic congestion. Yet road usage for cargo transport is steadily increasing, leading to heavier road wear, more accidents and higher emissions. The population growth in urban areas expected over the next decades will without doubt compound the problem, causing the demand for transport to exceed the capacity of today's roads.

To alleviate these issues, governments all over the EU are trying to move some of the freight volume from the road to waterways

and railways. In the short-sea shipping segment, however, profit margins are small due to high energy and operating costs as well as high taxes.

These circumstances, particularly the Norwegian government's National Transport plan, prompted DNV GL's Strategic Research and Innovation department to design a new ship concept specifically for short-sea shipping with the objective of encouraging a modal shift from road to sea. By taking the design and applied technologies to the extreme, the DNV GL engineers want to launch a new discussion within the community while upholding DNV GL's maxim of a safe and sustainable future for shipping.

The innovative ship concept "ReVolt", the unmanned, zero-emission, short-sea ship of the future" is the result of a multi-disciplinary, team-based development project at DNV GL based on an assessment of current requirements along European short-sea routes. Nevertheless, the concept could be implemented in other coastal regions around the globe.

Defining the operational profile
ReVolt's operational profile was established by analysing Automatic Identification System (AIS) data from vessels operating in the Norwegian

Economic Zone (NEZ) in 2012. The relevant routes consist of individual legs of less than 100 nautical miles. The ship type and cargo capacity, which is within the 100-TEU range, were obtained by pairing the AIS data with DNV ship register data. From this information the requirements for the ship concept were derived.

The vessels evaluated in the AIS analysis had an average service speed of 8.7 knots. For ReVolt it was decided to reduce the required speed to 6 knots to allow for more efficient propulsion solutions. As a consequence of this low speed the logistics chain will have to be redesigned entirely to account for longer transit times. However, implementing a "conveyor belt" logistics concept with frequent departures and short, four-hour-average port stays could create the right conditions for transferring appropriate cargo types to this mode of transport.

Design characteristics

The hull of the vessel was designed to optimise ship efficiency, fulfil all applicable safety and operational requirements and enable operation without ballast water.

At the ship's slow cruising speed the resistance to overcome will consist



primarily of hull friction and occasional external forces acting on the vessel. The wave-making resistance will be modest. For this reason a straight vertical bow design was chosen to minimise resistance across the entire operational profile. In addition, a sharp waterline creating a piercing effect is favourable in adverse wave conditions. CFD calculations for the chosen design showed a low calm-water resistance of 50 kilowatts. On the other hand, the added resistance in waves and wind resulting from the low cruising speed was shown to contribute a relatively large portion to the vessel's overall resistance. Resistance calculations incorporating met-ocean data sets from the intended route revealed an average ship resistance of 120 kilowatts.

An investigation into the possible use of composite materials was also carried out. While the lightweight material would reduce the wetted surface when compared to normal steel, the resulting draught reduction would require a smaller-diameter propeller, thereby compromising the ship's propulsion efficiency. Therefore a steel hull, which is also less costly, proved to be the best solution.

The propeller design for the ReVolt was largely based on efficiency considerations, since most of the normal design constraints were

irrelevant due to the low vessel speed. Since cavitation will be negligible, the number of propeller blades was reduced to only two. This in turn considerably reduced viscous losses in the propeller. For the final design a propulsion efficiency of 76 per cent was achieved.

ReVolt will operate independent of tugs and needs good manoeuvrability. Because of her hull shape a podded propulsion system was chosen over conventional shafted propulsion; this also reduces the number of rotating parts on the ship. The design calls for two stern pods as main propulsion units plus one retractable bow thruster for manoeuvring.

A fully battery-powered solution was selected for the ReVolt to maximise efficiency, eliminate emissions and reduce the number of rotating components requiring maintenance. Provided that the batteries can be charged with hydropower, a battery-based propulsion system will be highly efficient and clean. The energy loss from the water reservoir to the propeller is estimated to be as low as 40%. By contrast, comparable

diesel-powered ships may suffer well-to-propeller losses of up to 85%. Furthermore, using renewable energy to charge the batteries makes ReVolt a zero-emission ship. And finally, batteries represent a low-maintenance solution for an autonomous vessel designed to require as little human interference as possible.

Autonomy through simplicity

Ship maintenance chores are a major portion of a ship crew's activities. So when a ship operates with a very small crew or entirely without people on board, how can the vessel be maintained? One strategy is to minimise the required maintenance effort, and this is precisely what the designers of ReVolt did. Since the equipment most prone to technical breakdowns

is rotating machinery, ReVolt is a ballast-free, fully battery-powered, unmanned vessel with the smallest possible number of rotating components. In fact, the only rotating machinery on board are the components associated with the propulsion pods and bow thruster and are located outside the ship's hull.

In terms of autonomous navigation, an integrated system comprising ECDIS, GPS, radar, cameras, LIDAR and other sensory equipment has the potential to create complete situational awareness around the vessel. All of the required technology is available off the shelf today.

ReVolt's autonomy concept takes the applied technologies to the extreme, and DNV GL believes that many intermediate development steps, such as condition and sensor-based monitoring, enhanced navigational assistance and remote operation, will have to be taken before unmanned ships can become a reality.

Operational and cost efficiency

Since ReVolt sails at relatively slow speed it is essential to avoid wasting time in port. By using state-of-the-art technology in automatic mooring systems, such as grip-arm and vacuum-based mooring, ReVolt will be moored quickly without the need for ropes and winches, which are highly dependent on manual assistance and regular maintenance.

By raising the hull sides and cell guides to full container stack height, cargo handling can be accelerated while eliminating the need for stevedores and manual lashing.

To ensure fast transfer of cargo from the ship to other modes of transportation, the shoreside facilities in ports need to be highly efficient. This can be achieved by building dedicated terminals with easy access for trucks.

The ReVolt is unique in terms of both safety and environmental performance. However, the question remains whether all this can be

achieved at a reasonable cost. The autonomous capabilities of ReVolt significantly reduce or even eliminate the need for crew facilities, a superstructure and auxiliary machinery, leaving more space for payload. The battery pack on board ReVolt is extremely capital intensive, with an estimated cost of US\$1,000 per kWh. And, due to the performance degradation of batteries, the need for a replacement pack means that this cost will be incurred twice over the estimated lifespan of the vessel of 30 years.

As battery technology matures, battery costs are likely to drop significantly. Taking into account local incentive programmes such as the Norwegian NOX-fund, the CAPEX of ReVolt is estimated to be equal to that of a conventional ship with equivalent cargo capacity.

But where ReVolt will truly excel is the cost of operation. Her energy, maintenance and crewing costs will be far below those of a diesel-powered ship; by how much depends on the shoreside infrastructure needed to enable autonomous operation.

As a result, ReVolt will be profitable from day one. Over her lifetime the ship will save about US\$34 million in operating costs compared to a conventional vessel. Future governmental emission reduction incentives may further increase the margin. A detailed 1:20 scale model of ReVolt has been built to demonstrate the ship's autonomous capabilities and test other design features. DNV GL uses this scale model to learn about the challenges and opportunities of autonomous navigation and pave the way to a future where autonomy is part of the solution for better safety at sea.

A vision for the future

ReVolt is a vision for the future and will not be built until several of the technologies involved have matured. However, the vessel could conceivably be built and operated using current technology. ReVolt is intended to serve as an inspiration for

equipment manufacturers, shipyards and shipowners as they endeavour to develop new solutions towards a safer, more sustainable future.

General Particulars

Length overall	60.23m
Beam	14.50m
Draught (full)	5.02m
Draught (ballast)	3.35m
Design speed	6 knots
Capacity	100 TEU/ 1,250mt
Range	100 nm
Propulsion	2 x Azimuth pods 1 x bowthruster

Questions & Answers on the ReVolt

Expert: Hans Anton Tvette, Senior Researcher Maritime Transport Performance and Fuels, DNV GL

• Why did you develop the ReVolt concept?

The Research and Innovation team at DNV GL was inspired to develop the ReVolt concept by the Norwegian government's National Transport plan. In this white paper the Norwegian government set the goal of moving more transport from land to sea, facilitating short sea shipping and building maritime infrastructure. These are also high on the priority list for the EU. Therefore, the concept is built around small general cargo vessels in operation in Norwegian coastal waters. But in the future many of the concepts and technologies we use in ReVolt could also be used in other ship routes, for example inland water routes.

• How much would the vessel cost?

We estimate the cost of constructing ReVolt to be approximately US\$10 million – the same as a conventional ship of the same size. Over its 30 year life span, due to lower operational expenditure, the ship could save some US\$34 million compared to a conventional vessel.

• How does ReVolt enter a harbour? Can the ship identify obstacles such as sandbanks etc. or does it need to be guided into a port?

Using technologies such as GPS, ECDIS, radar, LIDAR, AIS and cameras, ReVolt can navigate





independently because of a multisensory perception field around the vessel. The ReVolt will also utilize port charts so as not to get caught in sandbanks. Each of these technologies is already available. We are also looking into shore side control centres.

- **How long does it take to charge the battery?**

We found the average port stay for the route studied was 4 hours. ReVolt is designed to be fully charged for departure within this time. The battery has a lifespan of approximately 15 years.

- **How large is the model that is being tested?**

ReVolt – original size: length 60, 23 metres; breadth: 14, 5 metres
Model (1:20): Length: ca. 3 m
 Breadth: c.a. 72, 5 cm

- **Could ReVolt technology be used on larger ships?**

Over the medium term we expect many of the technologies used in ReVolt to become more widespread in general shipping. Battery technologies have already been deployed, for example in the vessel *Viking Lady* – a project in which DNV GL was involved. And as battery prices decrease and they batteries become more efficient, we expect their uptake to increase. Some of the parts of the autonomous systems have potential to help crews operate their vessels more safely, for example an automatic system that would watch for potential hazards, check to ensure the crew takes appropriate

action and, as a failsafe, initiates course correction.

- **How did you develop the concept?**

We used specialized computer software to design the ship and build a 1:20 model. The ship's parameters were developed using AIS-Data. CFD calculations (Computational Fluid Dynamics) determined the optimal hull form for the route and operational profile suggested by the AIS-Data. We also assessed the hull material, as well as the propeller design, using CFD.

- **If ReVolt travels without captain or crew, how is it quantified legally? Could it be entered by anyone?**

When we developed ReVolt, we concentrated on the technical feasibility of the project. Before unmanned ships come into use, governments would need to develop a legal framework for them. This does not exist yet. We believe that autonomous vessels first would be introduced in territorial waters, where country-specific rules apply.

- **What are the next steps for the project?**

ReVolt has already been built in the form of a 1:20 scale model. We are currently testing its capabilities in open water in Norway. The next step is to test the autonomous capabilities of the demonstrator.

- **Where was ReVolt developed? Were some of the components developed in Hamburg?**

ReVolt was developed by the DNV GL Strategic Research & Innovation

team in Norway, where it is currently being tested. The technology used in the ship's design – such as LIDAR, ECDIS and radar – is already commercially available. We combined existing technology to see what is possible and how far we could go with respect to energy efficiency, emissions and safety and still maintain cost effectiveness. We hope that ReVolt can serve as inspiration for ship owners and yards in their efforts to develop new solutions for a safe and sustainable future. DNV GL experts in Germany are also examining concepts and systems for autonomous shipping.

- **Has anybody already shown a serious interest in ReVolt?**

Companies and governmental bodies have inquired about the autonomous operation of the ReVolt. We see maritime batteries as an emerging technology; several installations are in the pipeline. These installations are mainly focused on short ferry connections and for shipping segments with a varying operational profile, for example the OSV (Offshore Support Vessel) segment. With ReVolt we introduced this technology to the coastal traffic segment for the first time.

Article: DNV GL ReVolt was published with the kind permission of Alexandra Jane Oliver PR Communications Expert, Media and Public Relations, Hamburg

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Piloting at the 'edge-of-chaos'

Peter McArthur

Background

Many years of research devoted to trying to understand the underlying mechanics of marine hydrodynamics have been rewarded with the publication of a number of papers that attempt to explain both the resultant theoretical principles and their practical application in a simplistic, easily assimilable, manner. Subsequently, my research has benefited from formal recognition and acceptance by the Royal Institute of Naval Architects (RINA) and accreditation by the global hydrodynamic community. Consequently, I am now regularly called upon to investigate 'unusual' occurrences and, where appropriate, give an opinion as to causation. Very occasionally, appointments will prompt questions that require deeper explanations in the field of hydrodynamics, and this article addresses one such event.

For the most part, the maritime community, including pilots, masters and ship-handlers, view water as simply 'water' - a stable, incompressible, immutable and generally predictable medium against which we practise our craft. The truth, however, could not be further from this simplistic perception - as explained by research physicists Anders Nilsson (Stanford University, California) and Lars Pettersson (Stockholm University) in their seminal article 'Water, the strangest liquid' (*New Scientist*, 6 February 2010) and as practically applied to the marine environment in 'Peculiar water, Strange effects' (McArthur, 2011).

During 2010, I was invited by a Harbour Authority to look into a number of intermittent, apparently unpredictable, and irregularly recurring, phenomena relating to very large container ships. For no apparent reason, when under full control of an experienced and competent pilot, these ships

would suddenly, and inexplicably, experience a violent and increasing 'sheer' which required all of the pilot skills and the application of all assets at his disposal to effect recovery. Not being a single, isolated, phenomenon, and with no obvious cause, there was naturally some concern as to why this happened.

Upon conclusion of the research, during the report debrief, two fundamental questions were asked: Can you explain what happened? Is there a rule that we can apply in all situations to predict when such an event might re-occur?'

The answer to the first question was a simple 'yes' - although the reasons were complex.

Answering the second question required a little more consideration. First, there is the simple commercial response - "if the event is predictable in all circumstances, then there would be no need for experienced professional pilots" - their job would, very soon, fall to computers which, in the long run, cost significantly less than a professional pilot service. Such a prospect was envisioned over twenty years ago by Dr Odd Falstinen, Norwegian mathematician and theoretical hydrodynamicist.

The second, and fuller, answer is - depending on your perspective - far more interesting, significantly more complex, and requires knowledge not only of ship-handling, bridge management systems and some hydrodynamic understanding, but also an appreciation for *systems complexity* and the mathematical principals that underlie *chaos theory*.

Once understood, it becomes clear that the full answer has implications in many areas that apply to Pilots, Ship Masters and general ship-handlers. Some of these areas include, but are not limited to: law and ship-handler criminalisation; practical management processes; ship-handling training; ongoing

professional development; objective competence perceptions; and the need to retain a professional pilot service.

To begin to understand the second answer, one need only accept that water is anything but 'simple'. It does, in fact, exhibit a dual structure (tetrahedral and confused) so that it can exist (and co-exist) in both gelatinous and traditional Newtonian states (see Nilsson and Pettersson, 2010). Water tends to become highly chaotic once disturbed, but can eventually organise to exhibit the complex attributes of natural organic systems.

Complexity theory and principles

Much has been written about 'complexity', and many of the theoretical ideas have been successfully applied in the world of commerce. Complexity theory is particularly useful in describing the increasing confusion surrounding international business markets. No one cause can be attributed to complexity - but in the business world there are three underlying 'drivers': improving communications describing the interconnectedness of all things; increasing internationalisation and the multiple 'problems' this creates; and the increasing dynamic resulting from the range of 'options and choices' available to consumers.

Whilst the application to 'problematic' ship actions may not be immediately apparent, complexity principles are increasingly applied in understanding how order can derive from turbulent, unpredictable and confusing environments (Mason, 2009).

The underlying idea of complexity is that, from absolute confusion, all things tend to self-organise into systems when simple rules are applied (Kelly and Allinson, 1995). These systems can produce unexpected patterns, behaviours

or consequences (Goldberg and Markoczy, 1996) and, because of non-linear feedback systems (Stacey, 1996), the interconnection and interdependent system parts (Bar-Yam, 2000) tend to interact with, and adapt to, each other (Meade and Rabelo, 2004).

Complex behaviour is orderly, yet full of surprises, apparently uncontrollable, but not totally chaotic. The rules that generate complex behaviour cannot be managerially enforced and equally cannot be predicted from any one part of the system. One of the most visible and often cited examples of unpredictable complex behaviour is that of huge flocks of starlings creating incredible but beautiful patterns in the evening sky. It only takes one to change position, even slightly, and the rest will follow momentarily in an ever changing aerial display that is absolutely mesmerising.

Nilsson and Pettersson (2010) show that, because of its duality, water is chaotic in essence, but tends towards a self-organised functionality - as suggested by complexity theory. The evidence lies in the fact that mariners are able to identify discernible patterns, pressure features and physical responses when a ship is under the influence of moving water, or when moving through water where, to a greater or lesser extent, the hydrodynamic effects described as 'interaction' might be anticipated.

A second important concept of complexity theory happens when the system parameters change, that is, when a defining or limiting factor alters sufficiently. According to chaos theory, that change need only be very small, and thereafter a 'feedback' occurs in one of two ways:

- **Negative feedback** occurs when the system moves away from equilibrium and a 'corrective' action occurs to return the system to stability. A good example is the domestic central heating system which, once the controlling temperature is exceeded, will act

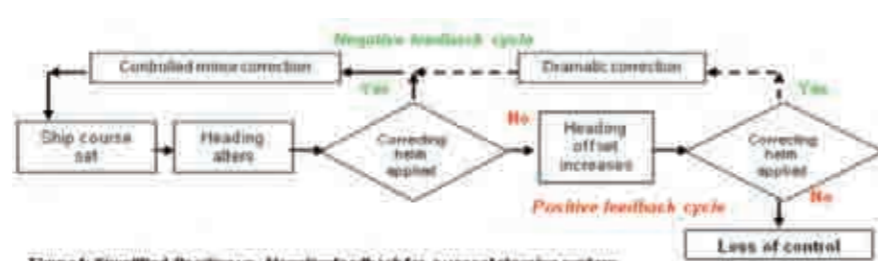


Figure 1: Simplified Positive vs. Negative feedback for a vessel steering system

to re-establish the desired set-value. In the marine environment, there is no better example than that of a ship's helmsman continually adjusting the helm to maintain a desired course.

- **Positive feedback** is exemplified in the 'butterfly effect' (Lorenz, 1963). In short, the butterfly 'flaps its wings' somewhere off the African coast, and sets up a tiny disturbance. There is nothing to moderate that disturbance (no negative feedback) and so it becomes a self-generating system and develops unhindered - achieving the intensity of a hurricane by time it reaches the Gulf of Mexico. This may be an extreme (unproven) example, but it demonstrates the principle.

Chaos Theory

Chaos theory derives from mathematical principles. The equations are fairly straight forward, but their consequences can be quite literally world changing.

Positive feedback tends to be a feature of chaos theory so that, in the real world, once a system turns 'chaotic' the effect grows, perhaps slowly at first, so that it is barely noticeable. Positive feedback, by its very nature, amplifies small changes (McGlone and Ramsey, 1998), pushing the system towards chaos (Doherty and Delener, 2001). It is also a feature of chaos that once one system component changes, becoming subject to positive feedback, that system will impact upon others, so that increasingly more areas of the system become confused (see Figure 1: Positive feedback cycle).

Eventually, the whole system will 'break-down', so that a simple

correcting measure will no longer be sufficient to re-establish equilibrium.

Initial conditions

There is one final element of complexity and chaos that needs to be grasped, that of sensitivity dependence (Briggs and Peat, 1999). In a stable system, small changes have small effects and will generally be compensated for through the process of negative feedback; but in a complex system, and in line with chaos theory, small changes can grow exponentially, making short term accurate prediction almost impossible (Doherty and Delener, 2001; Holbrook, 2003), and consequently small 'nudges' at the appropriate time can lead to major effects (Wheatley, 1996).

For the knowledgeable practitioner, discernible patterns and clues will indicate which changes to 'nudge' (Morrisson and Quella, 1999) and experience will tell then when to 'nudge' in order to achieve the desired effect (Gladwell, 2000). These patterns - known as 'attractors' - have maritime application and relate to what pilots often describe as 'gut instinct' - supported by empirical knowledge gained over many years, plus the handed-down accumulated anecdotes that underlie hard personal experience born out of trial and error. In reality, these 'attractors' cannot claim to derive from formalised, institution bound, tuition.

Practical implications for Pilots and Ship-handlers

Having touched on the theory and concepts of complexity and chaos, the question arises "of what use is this to ship-handling and pilotage?" The answer is 'quite a lot'.

There is a place where complexity, chaos, system interaction and

practical experience meet - both in the world of commerce and in the maritime industry - a realm where little is quite what it seems, and all manner of strange things can and quite often do happen.

Chaffney and Smith (2002) refer to this place as the 'edge of chaos' - where conflicting systems are in balance, where knowledge of positive feedback and the judicious application of negative feedback work in harmony to achieve a temporary equilibrium and where, unfortunately, any undue distraction or overwhelming of the principal actor can result in the rapid onset of chaos, deterioration and disaster.

The 'attractor' at the 'edge-of-chaos' has the rather curious title of 'strange attractor' and is the gift of years, trial and error, knowledge, practice and experience. Lewin (1992) describes this place as 'reflecting the area where maximum creativity and innovation happens'.

In the maritime context, I am referring to the act of pilotage. But why should it be so that Holbrook (2003) is able to state that the 'strange attractor' confines within certain boundaries yet, according to Doherty and Delener (2001) such complex chaotic

systems cannot be predicted but can, nevertheless, allow change whilst maintaining some order (Frederick, 1998).

Edge of chaos applications and acts-of-pilotage

To understand why the act-of-pilotage can be such a chaotic place to operate, we need only consider the factors pressing on the attention of the pilot. Bridge resource management courses, whilst touching on many of these factors, to a greater or lesser degree, tend to look at individual areas of concern and not the whole picture.

Figure 2 is by no means complete and can justifiably be criticised for being little more than a two dimensional representation of a four dimensional construct (5 or 6 dimensions if you prefer to include human and maritime factors as separate spheres, but this is a matter of choice and makes the point about complexity). Many of the elements, naturally, involve numerous sub-elements.

Taking this as nothing more than the simplest construct, the mathematics is quite simple. There are no less than 45 (or 1024) factors that the average pilot is attempting to balance whilst

he is working. Complexity theory says that interaction between factors will always be imperfect and are little better than barely balanced at any instant. Chaos theory suggests when any one factor goes 'wrong' and positive feedback results, others may follow in quick succession, and the situation deteriorates exponentially. It only takes 'one thing in a thousand' to start the downward spiral into chaos - or disaster.

Is it any wonder then that when something goes wrong during an act of pilotage, it happens quickly, without warning and rarely, if ever, can be attributed to a single event? Coincidentally, it may be of some interest that the factors of 'chaos' and 'complexity' and their interaction in confined waterways go a long way to explaining why 'squat' rarely, if ever, perfectly corresponds to calculations or why new-build ships undergoing sea-trials so often fail to perform as predicted by computer modelling and simulations. The reasons for this will become clear shortly.

The more astute reader will realise that the odds are weighted against the pilot who encounters problems 'at the edge of chaos'.

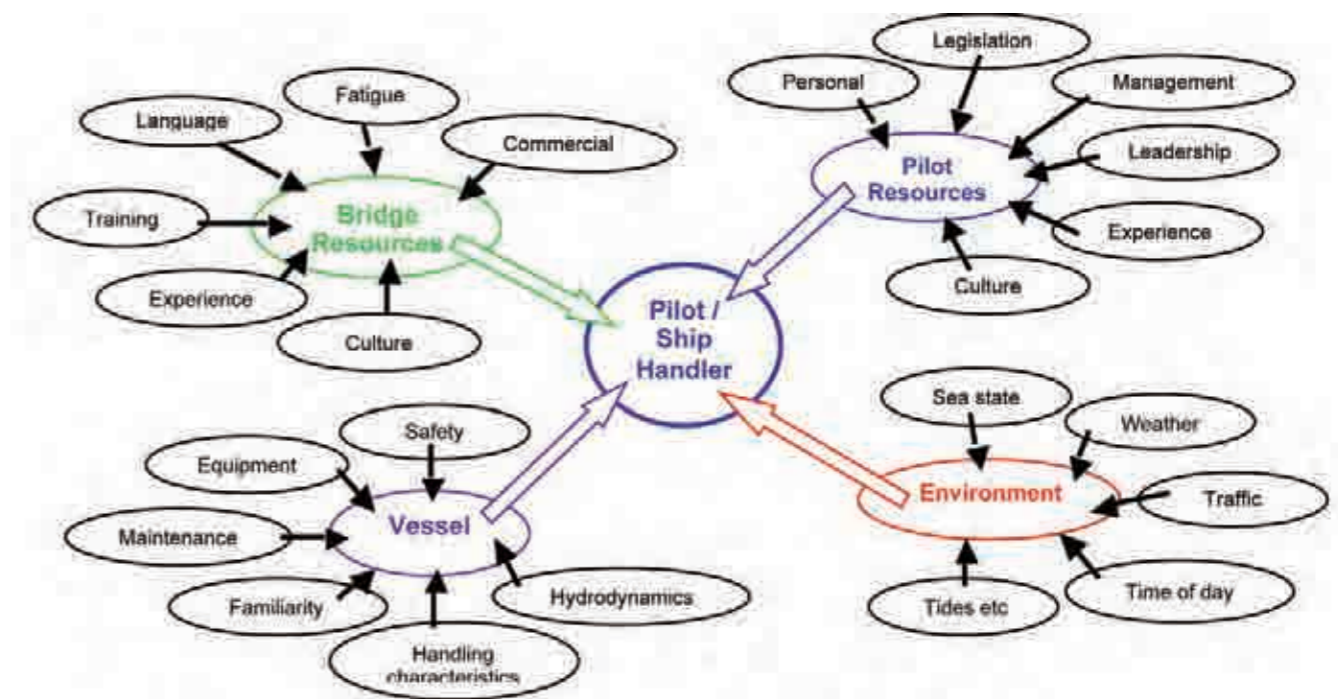


Figure 2: Some of the concerns pressing on the pilot operating 'at the edge of chaos'

Furthermore, not all pilots are emotionally, mentally or psychologically suited to operating in this environment. There are, however, factors that can mitigate the risks and pressures:

- **Management Support**
Management support and understanding, rather than criticism, condemnation and a 'blame culture' are an essential component in building confidence to carry out the task. Where the pilot is certain of condemnation or (possible) criminalisation, any willingness to try things out, to push the 'envelope of chaos' and test the bounds of possibility decreases dramatically. Yet pilots are still subject to commercial pressures that require them to work quickly, in all weathers, with a variety of nationalities and cultures and to make sense of it all.

Oliver Williamson (1999) argues for pre-emptive positive mechanisms to support those who work in complex systems by adopting a contingent approach and developing a range of coping strategies. This process begins by carrying out a frank organisational analysis, determining where there are systematic weaknesses – including management attitudes and 'poor leadership' – dealing with them honestly and sympathetically, then developing a robust, integrated and supportive structure that allows pilots to operate with confidence.

Management 'groupthink', an 'us and them' attitude, 'blame culture' and a 'closed mind policy' – when combined with situational complexity – can only exacerbate the likelihood of incidents in such an environment.

- **Legal**
As a lawyer I have particular issues with the way that pilots and ships' masters are increasingly criminalised on an isolated error or a single point of law. Few today, legal or otherwise, can honestly claim to have met a master or pilot who knowingly, deliberately, recklessly or with malice aforethought, endangered their ship or the personnel aboard. In my

experience, those who have been involved in incidents, most of which were not explainable – although many could quite easily be attributable to the effects of complexity and chaos – have suffered absolute agonies in trying to understand what happened. The professionalism of such men has always been paramount in their minds, as has the thought that, for reasons unknown, they may have let down their colleagues and profession.

It is easy, after the fact, to dismiss the multitude of conflicting elements that were successfully dealt with, only to alight on a single factor – often only provable after lengthy legal wrangling – then convict a man who did not understand how complexity or chaos played their part in his misfortune. The courts should take appropriate account of the issues by demonstrating some understanding of the principles.

As far back as 1949, the learned Lord Justice Porter commenting on the hydrodynamic related collision between *Queen Mary* and *Curacao*, said that 'the forces of interaction are imperfectly known, but in any situation (at least) some allowance should be made for their coming into play'. Since that statement, ships have become considerably bigger, we understand a lot more about hydrodynamic forces and the effects of interaction, plus we have the added knowledge that chaos and complexity must be considered as part of the causal matrix. Lord Porter's statement, therefore, remains as valid today as it did then.

- **Training**
Having already touched on pilot qualifications, empirical knowledge, experience and the practical implications of 'strange attractors' when working at the 'edge-of-chaos', surely there is some justification in the argument that at this level of expertise the imparting of institutional knowledge offers little value.

In the UK at least there is some recognition of this reality – evidenced by an increasing trend towards pilots

training pilots. On the down-side, so long as there is a defensive attitude within pilotage services that 'we don't want others coming in here and teaching us our jobs' there will be industry stasis, with little to be gained from one pilot sharing his experiences (positive and negative) with his fellows. The positive benefits of shared industry knowledge are clearly demonstrable in the world of commerce, and because of the unique attributes and characteristics of each district, pilots should not fear usurpation by their industry contemporaries – some of whom have given many years of their own time to undertake research and promote safety and industry professionalism.

Returning briefly to the mathematical concepts of chaos and complexity and their impact on the marine environment, the more perceptive reader will realise that there is one particular area of training that relies heavily on mathematical constructs: computer simulations and bridge training simulators.

Simulators portray a perfect electronic world constructed from known algorithms that are capable of carrying out unchanging and infinitely repeatable exercises. You should consider, 'does this represent the real world of ship-handling?' Paradoxically, it is the mathematics used to construct the simulated environment that prevents chaos and complexity from being part of the training experience.

Sections 5.2, 5.5 and 5.5.5 of IMO A960(M) on the training of pilots, states that professional training can be 'supplemented' (not replaced) by simulator training – as part of a pilot's continuing professional development (CPD) – but prudently it stops short of suggesting simulator training in relation to hydrodynamic interaction.

Simulators undeniably offer a viable facility – being useful for practising bridge resource management exercises, equipment familiarisation and integration techniques and for enhancing district familiarisation

(as stated by IMO A960). Nevertheless, an awareness of their inherent limitations predicates caution if using simulators for practising interaction exercises.

Using the same logic and applying knowledge of algorithmic confinement we learn that where simulators are used to 'reconstruct' an incident – particularly where the results might be applied in evidence to prosecute a ship-handler – utmost caution must be exercised when relying upon a simulated reconstruction. I have actively engaged with some of the world's leading computational fluid dynamicists who generally acknowledge that simulators are not perfect and, no matter how advanced their programming, simulators simply cannot replicate the marine environment with all its chaotic complexity.

Dr Odd Falstinen over twenty years ago pronounced that mathematical algorithms and computational fluid dynamics (CFD) would eventually do away with pilots – suggesting that they would be replaced by computer programmes. Although not a mariner, he is now a respected professor at the Marine Technology Institute in Norway. When addressing the Second International Conference on Hydrodynamic Interaction at Trondheim in May 2011, he made a number of defining statements. Key among these was his conviction that 'computer prediction may be pretty good but it is not, and cannot be, completely satisfactory' and 'there is always likely to be a difference between computer modeling and reality, no matter how good the computers and



Prof Odd Falstinen, Keynote speaker, Trondheim (May 2011)

models are'. Professor Falstinen's argument, like my own, is that simulation takes place in an idealised medium of perfectly performing algorithms. What results is a 'tidy' representation, arising from perfectly performing formulae, portraying a wonderfully predicatable world – an electronic utopia. Simulated results will always be perfectly explainable mathematical constructs showing what 'should' happen in a perfectly ordered environment. However, they cannot stand up under the microscope of chaos and systems complexity. Consequently, simulations should never be used to try and convict a ship-handler or pilot.

Introducing complexity and chaos into simulator equations does not work. Both (or either) of these factors, operating inside an ideal mathematical world results in uncertainty, confusion, unpredictability and more chaos. Logic fails, the CPU rapidly becomes overwhelmed and the programme ceases to operate.

Conclusion

If chaos and complexity are introduced into a rational system there are no rules that can predict the eventual outcome. Whereas bridge operations and mechanical/electronic systems may be rational and fairly predictable, the same cannot be said of water: where one element tends to chaos and complexity, the whole becomes subject to the same trend. The interacting factors at best balance or, through careful management, are held in temporary equilibrium at 'the edge of chaos'.

Responding to the first question 'can you explain what happened?' my answer was a simple 'yes' – and that was the end of the matter.

To the second question: 'is there a rule that we can apply in all situations to predict when such an event might re-occur'. Hopefully, readers will realise that the answer is complex, involving disparate areas of social science, commercial theory, mathematical principles,

hydrodynamic theory, ship dynamics, environmental considerations, local knowledge and personal skill sets. My answer, therefore, has to be a resounding 'No!' But that is not the end of the matter.

Will the effect under investigation re-occur? Possibly. Chaos and complexity theories suggest that it could, but not necessarily arising from the same unique combination of factors.

Perhaps the penultimate word should go to Lord Justice Porter who averred that 'each (hydrodynamic) event can only be explained with reference to those factors prevailing at the material time'.

For as long as the second answer remains unchanged, competent ship-handlers and exceptionally skilled pilots, each having an intimate knowledge of their own district, with all its nuances and idiosyncrasies, will be fundamental to maritime safety. Managers, legal practitioners and well meaning 'educators' who, perhaps unwittingly, undermine that specialist competence, unknowingly enact an immense disservice upon professionals who must, however imperfectly, balance the numerous variables they face.

Yet pilot professionalism prevails and the pilots' unchanging creed remains the maintenance of an unflinching mindset directed towards safety, security, good conduct and the well-being of the world's most congested waterways.

About the Author
Peter McArthur is: an experienced Pilot; a Master Mariner; an experienced Lawyer, expert-witness and advisor to the courts; marine technical consultant; maritime arbitrator; Chartered Marine Technologist.

(A full list of references was submitted with this article, but took too much room to publish. Ed)

All Parliamentary Parties Maritime & Ports Groups meetings

Mike Robarts

Your Association continues to be a presence at the All Parliamentary Parties Maritime and Ports Groups (APPMPG) meetings in Westminster's committee rooms. The APPMPG allows MPs and House of Lords (HoL) to meet with delegates from the maritime sector to discuss various items of mutual relevance.



Dover eastern entrance by J. Wiltshire

This is extremely important to us, especially with the proposed EU ports regulation still looming and the ever-present threat of competition in pilotage. Delegates regularly attending include the Department for Transport, Trinity House, the Chamber of Shipping and individual members, Trade unions, British Ports Association, UK Major Ports Group and ports executives and the Maritime and Coastguard Agency.

The last sessions until the Parliament recess have included presentations on the Marine Management Organisation (MMO) and the Maritime and Coastguard Agency (MCA). James Cross of the MMO gave an overview of the remit, capability and improvements in its services standards. He pointed out the efforts the organisation had made to support better regulation, most recently through the Coastal Concordat. The MMO oversees the licence, regulation and planning of various UK coastal marine activities. To improve users access the MMO has recently

invested in an IT platform and secured a number of new byelaws from the European Commission to assist Local Authorities for areas under 12 miles off the UK coast.

Sir Alan Massey of the MCA presentation gave an overview of the Maritime and Coastguard Agency's diverse operations. As mariners these are well known to us as giving educational and training support for seafarers, vessel safety and flag inspection. The MCA has contributed considerably to fishing industry safety initiatives, fishing constituting a hazardous occupation. The MCA is responsible for coastguard operations recently modernised. It concentrates on environmental standards enforcement and the promotion of the Red Ensign. The MCA still wants to evolve a more attractive ship register to take advantage of increasing tonnage, and there are indications that change is needed in some working codes and regulations to maintain a competitive edge.

Alongside Lord Greenway, Jim Fitzpatrick MP has now been elected as Chairman of the group. Jim Fitzpatrick has been Under-Secretary of State for Transport. After the formation of the present Government and with Parliament in session there have been two recent meetings, at which there were presentations by two UK major ports and their developments and an introduction to by the present shipping minister John Goodwill MP.

The Port of Dover and Peel Ports spoke to the group about their respective port projects and investments. The Port of Dover is currently developing the BRIDGE project which will see investment in the two cross-channel ports of Dover and Calais. This will create extra capacity for road haulage and rail freight moving between the two ports.

The project includes investments in integrated port planning for internal road networks, holding areas and handling freight moving in the port as well as new berths for the modern passenger/RORO ferries currently being handled and possible future investments. Dover port explained the opportunities this could bring, not only to the port but also to the local town and the port community.

Peel Ports introduced the Liverpool 2 Northern Powerhouse project. The Peel Ports Group see value in attracting the largest containerships and their cargoes to their new container port, which will interface with the Manchester Ship Canal and the warehouses in the industrial Northwest and which will also serve consumer demand for manufactured goods from the region's large towns and cities. The project not only includes the development of the new container terminal, but deals with the way the Manchester Ship Canal can assist in a new ways of handling logistics, port-centric and inland distribution. There was discussion of the difficulties of East to West coast rail networks and the already congested freight routes. Peel Ports were pleased to announce the recent contract for Biomass to serve UK power stations.

The APPMPG's most recent session was a presentation by the shipping minister John Goodwill MP. He showed that over 95% of goods are shipped by sea and outlined the importance of this which creates millions of jobs in the UK economy from those directly employed in jobs connected with sea transport, port operations to logistics and services to the shipping economy. He mentioned that he is part of team looking after the trust of the historic ship M.V. *Coronia* which took part in the Dunkirk evacuation in WWII. He has started to visit ports and

recently attended the port of Southampton, where he toured a large containership and the ship's berth in the terminal.

When taking up his post in government he said he had four main items on his agenda, the first of which is to secure cross

channel services and mitigate recent unacceptable disruption. He said how the Prime Minister had talked with the French President over the matter and that the UK had sent further security fencing to Calais. Secondly, he wished to ensure that the UK shipping industry remains



Dover cruise terminal by J. Wiltshire

internationally competitive, a position further supported during London International Shipping Week 2015, by the maritime growth study and by the MCA report on the UK flag, all of which must be supported by action. The London International Shipping Week 2015 is still seen as one of the most important maritime events of 2015, a high number of key players attending from international shipping. Thirdly, an aim of most concern to the Association as well as the ports groups is the proposed EU ports regulation. John Goodwill has been an MEP and has useful experience at the European Commission which could be beneficial to ports during passage of the regulation through the Commission. Fourthly, he speculated on the possible movement of the regulation, adding that total removal of it is unlikely and urging us in the UK to be pragmatic. His main view is that the UK should support the Rapporteurs proposals and minimise their impact, which is the best the UK can most realistically achieve.

Pilots' Golf 2015

Peter Ryder

The 40th meeting of the marine pilots' golfing society took place at Formby Hall, Southport, from Sunday to Tuesday, 6 – 8 September.

Twenty pilots from eight different ports, namely, the Clyde, Forth, Tees, Humber, Bristol, Milford Haven, Manchester and Liverpool took part. Played in glorious September sunshine, a good time was had by all.

Winners were: Hawkestone Cup, Bill Fairbairn (Tees), Wilmslow Cup, Steve Watson (Liverpool) and Mike Love (Humber). Pilots Cup, Mike Love (Humber), Milford Haven Cup, Matt Hill (Clyde), and Jim Purvis Shield, Mike Love (Humber). Nearest Pin, John Cahill (Manchester).

The Society meets twice a year, one night of two rounds of golf in May

and a two-night three rounds of golf in September.

If golf is your game and you are either a retired UK pilot or working you are most welcome. We have golfers of all abilities, and ages range from thirties to over eighty.

Next year our meetings are at Shrigley Hall, Macclesfield in Cheshire, in May, and Macdonalds Cradrona Hotel, Peebles in Scotland, in September.



The Society lost one its members this year. Chris Thompson, an original Trent and Goole pilot, sadly lost his ten-year fight against cancer. He was a great supporter of the Society and will be sadly missed. Our thoughts are with Ruth at this time.

(On eve of going to press, we learnt that Peter Ryder had sadly passed away and our thoughts are with his wife Davina and his children, Richard, Ruth, Rachel, and Christopher. The Editor)



FREE Financial review for UK Pilots

With the Chancellor's recent Budgets and Autumn Statement, there were sweeping changes and a number of material updates that could directly impact upon you and your Financial Planning.

Now is the perfect time for you to take advantage of a FREE financial review and "healthcheck" with industry specialists.

AUTUMN STATEMENT 2015 HIGHLIGHTS

Pensions

Pensions Tax Relief

After significant Pension reforms, the response to the government's consultation on pensions tax relief issued following the Summer Budget will not be published until the Budget 2016 in March. The government remains concerned about the growth of salary sacrifice arrangements and is considering what action, if any, is necessary. The government will gather further evidence on salary sacrifice arrangements to inform its approach.

Changes to State Pensions

The government announced an increase in the State Pension of £3.35 per week to £119.30pw from April 2016, and confirmed a new single-tier pension of £155.65pw for new pensioners from April 2016.

ISAs

The ISA and Junior ISA allowances will remain at £15,240 and £4,080 respectively for the tax year 2016/17.

Inherited ISA allowances

The government will legislate to allow the ISA savings of a deceased person to continue to benefit from tax advantages during the administration of their estate, and will set out plans for introducing this measure in 2016 following technical consultation with ISA providers.

Taxation

Capital Gains Tax

With the government's planned further digitisation of tax returns, from April 2019 Capital Gains Tax will become payable within 30 days of disposal of residential property.

Stamp Duty on buy-to-let and second homes

The government is increasing Stamp Duty Land Tax by 3% on buy-to-let and second homes from April 2016. The government will shortly issue a consultation considering whether an exemption for corporates and funds owning more than 15 residential properties is appropriate.

Other key announcements

Deeds of variation

Following the review announced in the Budget in March this year, the government will not introduce new restrictions on how deeds

of variation can be used for tax purposes but will continue to monitor their use.

VCTs and EIS Investments

While there were no changes to the overall rates of reliefs available for individual investors, the government announced an additional measure to exclude all remaining energy generation activities from VCT, EIS and Seed EIS. This will take effect for investments made on or after 6 April 2016. However, the opportunities remain until 5 April 2016.

Planning

Overall, the Autumn Statement emphasises the need for careful consideration of how to structure your assets in a tax-efficient manner, and the importance of ensuring you maximise the opportunities available.

More information

Should you wish to discuss any of the detail contained in the note, or have any other interest in financial planning, please do not hesitate to contact me, as below.

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Editor's Details
 Mike Robarts, Editor of The Pilot, can be contacted via email at editor@ukmpa.org

REMEMBER...

If you are involved in any incident (no matter how trivial it may seem at the time) it is imperative that you complete an incident report and forward it to the insurance company.

THE INCIDENT REPORT FORM WITH INSTRUCTIONS CAN BE DOWNLOADED FROM THE UKMPA WEBSITE.

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Incident procedures and legal rights

All active members should have received a card detailing the procedures to be taken following an incident. If you haven't received such a card please contact the insurers.

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The incident form with instructions can be downloaded from the UKMPA website.

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Major incident: During office hours as above, outside office hours call **07790 069306**

For full details, please refer to UKMPA Circular: 1 of 2015

Social Networking

UKMPA members are all encouraged to participate in the forum debates on LinkedIn. To join the group, sign up for a LinkedIn account and type "UKMPA" into the group search box which will take you to the relevant registration page.



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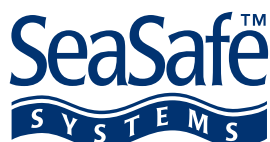
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