

Seaways

The International Journal of The Nautical Institute

Breaking the ice

Polar Ship
Operations **p08**

Mind that boat

Reducing fishing
collisions **p14**

AI for shipping?

The first LIDAR
system **p24**

New moves in salvage

New risks, new
technology **p25**

Five star shipping?

Get involved in BIMCO's move to improve
bulk terminals **p06**

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The International Journal of The Nautical Institute

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Diary

What's on?

The future of maritime professionals 20-21 April 2018

London Branch Conference 2018

Novotel, Victoria Street, BS1 6HY, Bristol UK
www.nautinstlondon.co.uk/

Regulations, enforcement of conventions, technology, connectivity, social isolation and mental health all have an effect on today's seafarer. This seminar will focus on these topics and how they affect the future of maritime professionals.

To take advantage of the discounts available for events listed in the Diary section, please log in to www.nautinst.org using your membership details and click on 'Event Discounts'

11 April

S-Mode and Bridge Displays & AGM

Ireland Branch
1900, National Maritime College of Ireland, Ringaskiddy, Cork

Contact: nautinstireland@gmail.com

12 April

Navigation Assessor Course

Portview, Ahlers House, Noorderlaan 139, Antwerp

Contact: susie.stiles@nautinst.org
£150 discount for NI members

16 April

Navigation Assessor Course

Armada BlueBay Hotel, Dubai

Contact: susie.stiles@nautinst.org
£150 discount for NI members

17-20 April

Arctic Shipping Forum 2018

Helsinki Congress Paasitorni,
<https://maritime.knect365.com/arctic-shipping-forum/>
20% discount for NI members

18-19 April

BWM Conference

Vallejo, California
www.wplgroup.com/aci
Email: rafael@acieu.net
15% discount for NI members

19 April

Pilotage and Liverpool 2

NW England & N Wales Branch
1800, LJMU, Byrom St, Liverpool L3 3AF

Email: sec@ninw.org.uk

20 April

Seafarer Mental Health US Gulf Branch

1130, West Gulf Maritime Association, Houston, TX 77029

Email: nigulfbranch@gmail.com

26 April

Autonomous Vessels; a Real Revolution

Solent Branch
1830, Warsash Marine Academy
Email: nisolentbranch.secretary@gmail.com
<https://www.nautinst.org/uk-solent>

09 May

AGM

SE Australia Branch
Sydney
Email: sec@nisea.org

16 May

HR & Crew Management Summit

Singapore
www.wplgroup.com/aci
15% discount for NI members

16-17 May

Unmanned Maritime Systems

London, UK
www.umconference.com/nautinst
£100 discount for NI members

17 May

21st Century Seafarers

NW England & N Wales Branch
1700, Fleetwood Nautical Campus, FY7 8JZ
<http://www.ninw.org.uk>
sec@ninw.org.uk



£175

Recommendations for Liquefied Gas Carrier Manifolds

Second Edition 2018



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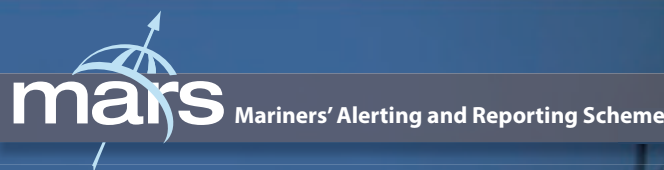


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Help keep others safe by sharing what you learnt from the incident



Contact us in confidence at mars@nautinst.org



Focus

Investing in solutions for safety

“ We have a great deal of work to do as an Institute and as an industry in ensuring technical developments are of real benefit to mariners and provide them with better tools for making decisions.

”

I am pleased to be writing this Focus piece to you from Karachi in Pakistan, where I have been supporting the busy branch in an event exploring issues of Continuous Professional Development. The event itself was widely supported by branch members, the Pakistan Navy, local mariners and students from the National Centre for Maritime Policy Research at the Bahria University who hosted the event.

My thanks to all involved in the occasion and support in arranging my visits to key stakeholders in the city to discuss ways in which we can collaborate and grow the activities of the branch and enhance the interaction between civilian and military mariners. Other major seminars have been held by Branches recently in Chandrigah, organised by the India North West Branch, and in Sri Lanka. There is great energy in the region and I look forward to the continuation of the strong contribution the NI makes locally to national issues of importance.

On my way here, the Dubai branch hosted me at their meeting in the Dubai International Seafarers Centre. This was a very successful evening, with a presentation that explored changes to the tax regulations in the Emirate, the country and the region. The evening was well attended and was another way in which the NI exerts a positive influence on the professional development of its members and local community.

One of the key themes drawn to my attention, especially by the younger participants, was concern about the race towards automation, autonomy and the reduction in the requirement for skilled mariners in control of ships. We have a great deal of work to do as an Institute and as an industry in ensuring technical developments are of real benefit to mariners and provide them with better tools for making decisions. Good decisions. We must ensure that technology is the servant not the master and that we invest in solutions that provide enhanced safety and capability, not distractions, to the watchkeeper.

I am excited by the support we have received for the technical seminar in Malta and I know we will be exploring some key issues around these very points in May.

On the subject of Malta, the branch and colleagues here at HQ have been busy establishing an interesting, and I hope challenging, programme for you on 23 and 24 May (see page 13 for more details). We will be hearing how technology is driving major change in our industry and the impact this is having on skills, training and professionalism. I am delighted to announce there will be Ministerial representation from the Government of Malta as well as representatives from a number of flag registries.

Those of you with an interest in the offshore sector will be aware that we have made significant investment in the administration of the DPO scheme, the establishment of defined professional development programmes for the sector and the delivery of a global on-line assessment regime. This has resulted in fairer assessments, easier administration and a database of information that provides good feedback on the questions participants find difficult and areas of weakness in their learning. I am delighted that our investment in a high quality solution has been recognised by our shortlisting for an 'E-Assessments award' to be made next month. As finalists our contribution to excellence in assessments, especially in the export sector, is tribute to our global presence. I thank those in The Nautical Institute and from other organisations that helped in its development and implementation. We will share the evening with our suppliers TestReach at an event in London.

The Nautical Institute was strongly represented at the commemoration of the 70th Anniversary of the founding of the International Maritime Organization in London this month. The ceremony was attended by Her Majesty Queen Elizabeth II who unveiled a plaque and cut a cake. Her support for this occasion highlights the importance of the IMO and its location in London. I will soon be meeting with the Secretary-General to discuss ways in which NGOs like The Nautical Institute can contribute even further to matters relating to seafarer welfare and maritime safety. 🌐



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p06



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Captain's column

Time to get anchorages organised

On the high seas, boundaries are abstract concepts, but they become more substantial as a vessel nears the coast. Unfortunately, however, boundaries remain an abstract concept when it comes to choosing an area to swing at anchor in confined waters. Even in very congested areas, the question of where to anchor and how much space to leave is often left to the seafarer's own judgement.

In crowded anchorages, it is not unusual to hear angry voices over the VHF, arguing that the distances between anchored vessels are far too small, or even to hear Port Control arguing with a Captain that their vessel's stern is somehow out of anchorage boundaries.

Even where anchoring regulations exist, all too often VTS themselves do not pay attention to their own regulations when directing vessels to an anchorage, or consider how the vessel in question can manoeuvre through the other vessels to find an appropriate safe swinging anchorage. When everyone tries to anchor their vessels as close to the outer extremities as possible, this restricts the use of the full capacity of the anchorage area for other vessels.

In congested anchorages in particular, these issues can lead to unsafe circumstances, with a whole series of missing links in the safety chain.

For more clarity, let's consider how the system works – or doesn't – at two famous anchorages:

FOAA – Fujairah Outside Anchorage Area (NTM #213)

Here, the anchorage is divided into individual areas. The maximum number of vessels that each area can accommodate is clearly stated in local regulations. However, positioning within this area remains optional, leading to arguments, delays, and potentially to accidents. Recently, 23 vessels were observed anchored in area 'A', instead of the 17 that are allowed according to local regulations – as shown on area chart NTM #213.

Approaches to Suez Canal

Here, the precise anchorage location and swinging area for each particular vessel is defined on the chart, thus preventing any 'misunderstanding' or 'optional' mooring anchoring arrangements, and making it easier to manoeuvre the vessel without any unsafe consequences.

STS Anchorage Area

All of this becomes more sensitive when carrying out ship to ship (STS) operations at anchor, either with or without tugs. The anchored vessel swings widely during STS mooring operations, potentially getting too close to other nearby vessels in the same designated STS anchorage area or in bordering anchorage areas.

Anchorage Depth

While the recommended maximum depth for anchoring varies according to the manufacturer of the windlass, almost none of them recommend use in a depth of more than 130 metres. This maximum is for brand new vessels, and actually lessens with age due to wear and tear. With this in mind, it is hard to understand the grounds on which some recognised anchorages are in places up to 150 m deep, but they exist – as we can see on NTM #213, for example. Of course, captains will avoid anchoring in these depths – which effectively reduces the available space in the anchorage, and means that they will be closer to other vessels.

The need for regulation

There should be clear directives for local port authorities regarding the maximum depth for anchorage areas, internationally regulated and in line with the maximum guaranteed riding depths defined by windlass manufacturers. Anchorages deeper than this are no practical use at all – they just serve to tick a box that a certain amount of anchorage space is 'available', even if it is not actually usable. Perhaps these spaces are meant for UFOs?

Of course, the opposite problem also exists. Shipmasters will be familiar with difficult conditions in a number of ports, for example those at Chittagong, Bangladesh, particularly at 'A' anchorage, which is the northernmost anchorage designated for vessels with a draft of over 10 metres. The anchorage area is surrounded by shallower waters restricting the area available. This is coupled with high traffic density and strong local currents. Some Masters may consider that 0.4 NM is adequate sea room in some circumstances with nine shackles (260.3 metres) in the water. However, as this area is known for its soft holding ground and strong currents, more distance between vessels may be needed when anchoring. There are many cases of vessels dragging anchor onto another vessel nearby during the ebb tide, resulting in steel-to-steel contact, or becoming entangled with the other vessel's anchor chain.

We can all list numerous examples of difficult anchorages – and anchorages with difficulties – around the world, where there should be IMO regulated Organization of Anchorage areas with designated anchorage points with swinging areas for each vessel, depending on local conditions.

Looking at the picture as it is today, it seems advisable to create mandatory directives under IMO to manage anchorage areas with designated boundaries for each vessel, especially for STS anchorages, and with a set maximum permissible depth. This will help guarantee safe anchoring, and safe riding while at anchor. 🌐



THE NAUTICAL INSTITUTE'S NAVIGATION ASSESSOR COURSE

This course provides practical information on:

- Improving safety and best practice
- How to conduct the assessment with a systematic approach
- Preparing an effective report

This course is suitable for:

- Personnel requiring to demonstrate they hold a qualification to be able to conduct navigation audits stipulated in TMSA3 element 5
- Marine Consultants ● Surveyors ● Inspectors
- Marine Managers ● Superintendents
- Shipmasters preparing for navigation assessments

This course consists of two parts:

Part A: Classroom sessions during the dates below. Attendees will be awarded a Certificate of Completion after the classroom session.

Part B: An onboard assessment will be assigned. The Nautical Institute Navigation Assessors Certificate will be awarded to delegates who have completed both Part A and Part B.

The Navigation Assessor Course compliments The Nautical Institute's specialist publication *Navigation Assessments: A guide to best practice*. Each course attendee will receive a complimentary copy worth £40.

Fees: NI member: £750 (+VAT)

Non-member: £900 (+VAT)

HOUSTON: 2-3 APRIL 2018

Houston International Seafarers' Center, Texas 77029, USA

ANTWERP: 10-11 APRIL 2018

TBC

ANTWERP: 12-13 APRIL 2018

Portview, 10th Floor, Ahlers House, Noorderlaan, 2030 Antwerp, Belgium

DUBAI: 16-17 APRIL 2018

Armada BlueBay Hotel, Jumeirah Lake Towers, Dubai, UAE



To find out more or to book your place, please email:

susie.stiles@nautinst.org

Five star shipping?

BIMCO's Port Terminal Vetting initiative aims to provide ships with up-to-date information on the quality of the ports they visit – and to highlight any issues they need to be aware of

BIMCO has released the latest results from its Dry Bulk Vetting of Terminals initiative. This scheme, launched at the beginning of 2015, aims to highlight conditions in terminals worldwide, provide guidance for planning future calls and alert owners and vessels to potential problems. Over the past year, 115 ships took part, but BIMCO's goal is to have 1,000 ships participating. "We need to get the word out all the way to the shipmasters. That is the crucial challenge. Because the more reports we get the more valuable it becomes for all the participants and the shipmasters themselves," says Aron Soerensen, Head of Maritime Technology & Regulation at BIMCO.

Vessels taking part are asked to fill out the survey each time they leave a terminal they have called at. The answers are used to create a

database that offers a quick overview of the terminal's performance, both in specific areas and overall. Shipping companies will, for example, be able to find out if other ships have experienced damage, difficulties or surges at a particular terminal; they can also identify ports where particular attention needs to be paid to communication issues. On a larger scale, BIMCO is using the reports to identify the areas on which it should focus its campaigning and education efforts.

"We would like to encourage shipmasters in the bulk fleets to report their experiences after each terminal call to the dry bulk vetting scheme. The information will be invaluable for our members and the broader industry to help guide the planning of future calls at terminals around the world, and for terminals to improve their service," Soerenson says.

“ We need to get the word out all the way to the shipmasters. Because the more reports we get the more valuable the survey becomes. ”

What does the survey look at?

The questionnaire consists of 36 specific questions, divided into five main categories:

- Mooring and berth arrangements
- Terminal services
- Terminal equipment
- Information exchange between the ship and the terminal
- Loading and unloading.

Ships are asked to rate performance on each issue on a five-point scale, from excellent to poor. More general questions look at overall port performance, including crew welfare issues such as restrictions on shore leave and crew change. Ports are given star ratings indicating their performance overall, as well as their performance within each category.

Ratings are based on an aggregate of all responses received for that terminal. To ensure that results are statistically meaningful, ratings are published only for those ports that have received more than five reports over the course of the past year. As more ships take part in the survey, it is hoped that the number of ports included in the survey will increase, and will eventually give a broad and accurate picture of terminal performance worldwide.

In this, its second year of operation, the survey received 598 reports covering 278 terminals in 80 countries, from 115 ships. Of these, 27 terminals had more than five report entries, and were therefore included in the survey results. This represents an increase over the previous year, but BIMCO is keen to continue to expand the database.



Points of particular interest

The reports received from the 27 terminals formed the basis for a sound and firm evaluation of each terminal's performance and the individual average results. While there is as yet insufficient data from which to draw solid statistical conclusions or identify geographical trends, some patterns are emerging.

On the whole, this year's survey indicates that dry bulk terminals generally meet a high standard. Performance is on the whole good or excellent overall, especially with regard to loading and unloading and the quality of the terminals and equipment. At the other end of the spectrum, a number of ships complained about unexpected claims; unnecessary bureaucracy; offensive port authorities; and pressure being put on ship/crew and Master. In addition, ports were rated badly when the cost of terminal services was either too high or the service was deemed inadequate.

The full report can be downloaded for free at https://www.bimco.org/Dry_bulk_terminal_vetting

MOORING ARRANGEMENTS

Question 12 dealt with mooring arrangements, referring to berth, water depth and surge. In 74% of the reports they were rated as average or better. This gave an overall result of 3.4. This was lowest such score in the questionnaire and slightly below last year's. In 10% of the reports, vessels had experienced problems with surge while at berth.

This score indicated that, on average, piers and mooring equipment were of a good standard and generally there was satisfaction with regard to the surge, tidal waters and wind effects. Some of the poor ratings referred to lack of manoeuvrability and general port restrictions.

COMMUNICATION

Communication between ship and terminal as well as the exchange of information was in general well-rated, with 76% of reports rating it average or above. The means of communication differed, but there was a tendency to use a terminal-appointed foreman as the primary contact between ship and terminal. Some terminals need to improve the language skills of the terminal personnel communicating with the ship's crew.

A matter of serious concern is that 20% of terminals did not provide an emergency procedure notice.

LOADING AND UNLOADING

A total of 94% of the reports considered this aspect to be average or better, resulting in an overall rating of 3.5. While this showed a slight decline compared with last year, the score still represents the highest rating of all the areas covered by the questionnaire. This indicates that terminals put a lot of effort into ensuring their core business of loading and unloading cargo is both efficient and safe. However, there has been a tendency for the scores to move from 'very good' to 'average'. Loading plans were normally available and were followed without amendments.

TERMINAL EQUIPMENT

Some 79% of reports rated equipment as average or better, giving an overall score of 3.5. Compared with last year's result, this was below last year's result, but still indicates that most terminals have a high standard of equipment and safety performance. Maintenance and operability were on average rated very good, although some remarks highlighted non-operational conveyors and cranes that had caused delays. These problems did not seem to degrade the vetting result. The three poor results were directly related to defective cranes and conveyor belts.

ACCESS

The setting of gangways and access to the ship seems to be a problem. Seventeen per cent of all entries indicated it was impossible to set a gangway, thereby hindering access to the ship. It also created serious safety concerns, as seafarers would not be able to abandon ship in the event of a fire. This is clearly unacceptable and must be addressed as a safety matter. BIMCO intends to focus on this area in future, starting a dialogue with the terminals in question.

GENERAL REMARKS

Terminals should consider lowering the cost of services such as garbage removal and fresh water supplies, as in several cases these were found to be excessive.

Some terminals have restrictions when entering or departing ports such as draught restrictions, tidal issues or only daytime accessibility. To improve their overall effectiveness, BIMCO encourages terminals to consider the matters highlighted by the survey and to find solutions to the benefit of both ships and terminals. 💡



Get involved

To take part in the survey, simply visit https://www.bimco.org/Dry_bulk_terminal_vetting and download the questionnaire.

The BIMCO Maritime Technology & Regulation Department recognises that there are many questions! However, we have tried to automate it as much as possible so the reporting is not too time-consuming. **It should take no more than 5-10 minutes to complete the questionnaire**, which consists of a series of multiple choice questions. There is space for individual comments. Once the questionnaire has been completed, clicking on the 'submit' button will automatically send it to the BIMCO Maritime Technology & Regulation Department. If you have any difficulty with the survey, please contact marinesurveys@bimco.org

Please note that this is an ongoing survey, and BIMCO requests that participants complete a survey every time the ship leaves a terminal. This is the only way it can gather the necessary knowledge to compare terminals around the world.

The data will be published through BIMCO media. If necessary, the findings will be used in discussions with terminals when discussing any improvements needed. The identity of the ship will always be kept anonymous to third parties.

Operation Deep Freeze

Breaking ice south of 70'

In Focus last month, Nautical Institute President Duke Snider FNI outlined the teamwork and professionalism onboard the USCG *Polar Star* as she voyaged into Antarctic waters. Here, photographs from the expedition show the *Polar Star* breaking first-season ice, which can be up to two metres thick, to create a passage and manoeuvring space for a tanker and containership resupplying the base at McMurdo station. Ice observation is carried out from the 'aloft conn', sixty steps above the bridge

(see top right), which also contains a complete set of controls and navigation equipment.

There was plenty of opportunity for observing wildlife, and the formation and breakup of ice (the tabular berg, bottom right, comes from a glacier, and is probably thousands of years old), as well as sharing expertise with the US Coast Guard. Being able to explain merchant operations and develop a shared terminology was particularly useful. By the end of the voyage, Duke passed the board for his USCG Cutterman's certificate – congratulations!

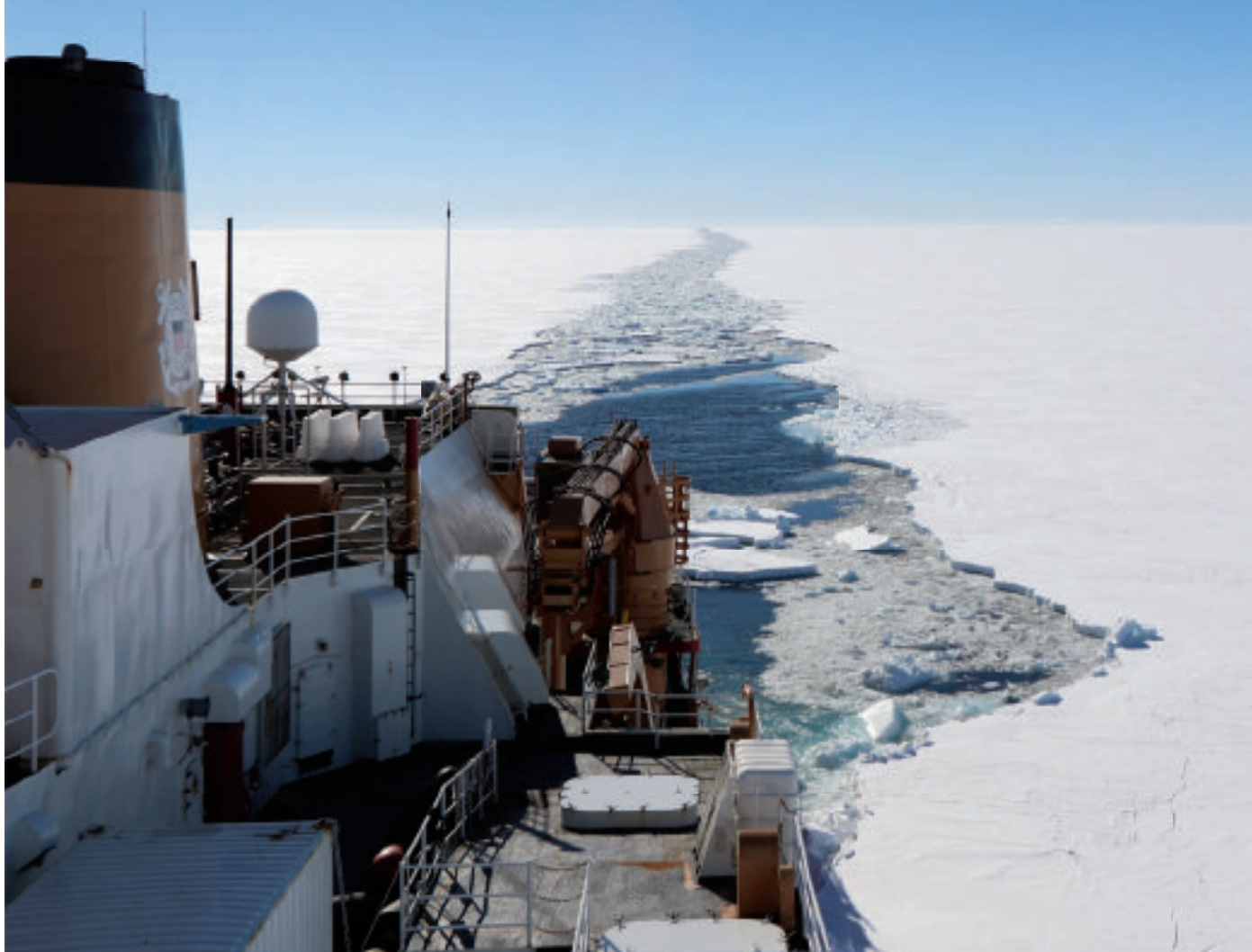


Image: USCG



Image: USCG



Image: USCG



Polar Ship Operations

The second edition of *Polar Ship Operations* builds on the first, offering the same clear cut and practical advice, but taking into consideration developments including the establishment of the IMO's Polar Code and The Nautical Institute's own Ice Navigation Scheme.

The polar regions remain the most remote of the globe and the least supported in terms of human presence, as well as land, sea and air transportation. The harsh environments, subject to extreme cold, snow and ice, have provided challenges to those who have made even the best planned and executed forays into these regions. In the northern polar regions, embraced by the five Arctic countries of Canada, Russia, USA, Norway and Denmark (Greenland), and perhaps also including Iceland, permanent human presence is generally limited to government-supported communities of mainly indigenous people, government representation in support of sovereignty or facilities or communities based on extraction of natural resources (and only when global demand or prices support the huge increase in the cost of exploration and extraction). Under the terms of the Antarctic Treaty, only research centres and bases are permitted in the Antarctic.

Until this century, the harshness of the environments in both the southern and northern polar regions has generally restricted seagoing activity to summer months. Even then it has been only for very specific

or necessary ventures, such as resupply of the sparse communities, extraction of valuable natural resources, or, in the case of the Southern Ocean, for resupply of research bases or research itself. As a result, very little significant infrastructure in support of major shipping exists in either the Arctic or Antarctic. In the Arctic, the typical North American navigational season was assumed to be from July to October, and along the Russian coast from August to September. In the Antarctic, a much shorter season was assumed, with some stations only accessible for a four-week window. For mariners, this means that few have had the opportunity to gain the valuable experience necessary to become proficient in polar high latitude operations.

Global climate change and advances in ship construction technology, combined with improvements in navigation, have slowly increased the historical navigational seasons and have prompted an increase in shipping entering the regions, bringing new challenges and risks. Operating ships within any ice regime, whether it is multi-year or first-year ice, requires knowledge and skill beyond that of many mariners. General operating parameters considered for ships operating in polar regions may be just as applicable to any ice regime. Nonetheless, the mariner and the shipowner must take into consideration the additional skill and knowledge required when choosing to challenge the more remote parts of the Arctic and Antarctic. These regions experience ice

Clear and informative diagrams giving practical illustration are a feature of the book

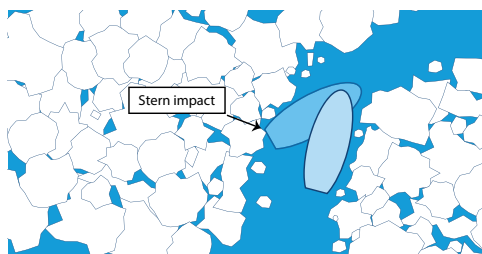
Chapter 7 | 101
Shiphandling in ice

Follow open water patches, leads, regions of lesser concentration and floes of less thickness. When deviating off planned tracks to take advantage of open leads and lesser ice concentration, always be aware of available depth relative to draught. Turns should be made when in open water areas or light ice if at all possible. Take care in estimating the swing of the stern, as lateral impacts in this area may result in serious damage to less ice-strengthened hull portions or to propellers and rudders. When turning in ice, gradual increase in power may be required as the flat sides of the vessel's hull may be breaking ice more than the bow. Be aware that glancing blows on ice may cause the vessel to swing or slide laterally into heavier ice.

Generally a vessel will tend to follow lighter ice, the path of least resistance, and the navigator should be aware that additional power may be required to turn as necessary. Abrupt increases in power should never be used. In more consolidated ice, a turning short round manoeuvre requiring judicious backing and filling to negotiate a turn may be required.

Always be aware of wind direction, and take note of the effect of wind on ice. While offshore winds will often open shore leads that can be taken advantage of, a change of wind to onshore may soon trap the vessel and drive it on to the lee shore. When choosing leads, always consider wind effect and the possibility that the lead may close or that ice may be under pressure. Ice closing behind a vessel as it proceeds indicates pressure.

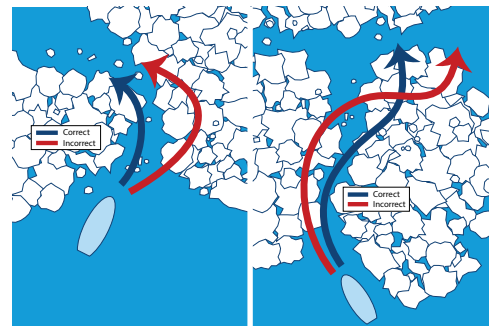
Icebergs, because of their large draught, are predominantly affected by current whereas floating sea ice is predominantly affected by wind. Smaller glacial ice fragments, however, are generally wind-driven, similar to sea ice. As fragments break off the main iceberg they begin to come under the effect of the wind and proceed downwind like a debris field. As a result, the preferred course around an iceberg to avoid the smaller debris downwind, is upwind of the iceberg itself.



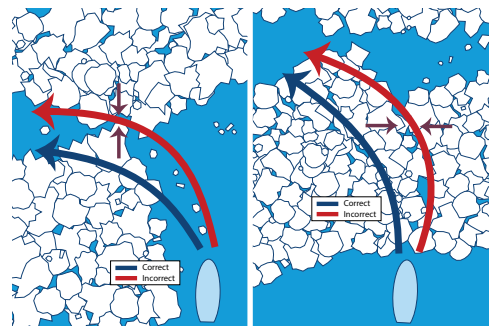
7.3 Turning in ice simple

POLAR SHIP OPERATIONS

102 | Chapter 7
Polar Ship Operations



7.4A Turning in ice without pressure



7.4B Turning in ice with pressure

THE NAUTICAL INSTITUTE

conditions far more onerous than many come to expect in southern ice-affected areas such as the Baltic Sea, the St Lawrence Seaway and the Caspian Sea. Multi-year and glacial ice much harder than the first-year ice encountered in the more southern regions, and remote areas with virtually no support infrastructure, often come as great surprises to new venturers into these areas.

This book is intended to provide mariners with guidance on how to prepare for, and execute, vessel operations in the polar regions.

Why the need for an update?

In his foreword to the second edition, Tero Vauraste MSC, Risk, Crisis and Disaster Management, Lieutenant Commander (Ret.) Finnish Coast Guard, CEO Arctia Ltd, and Vice-Chair Arctic Economic Council, explains the need for this second edition:

“Significant changes have taken place since the publication of the first edition of *Polar Ship Operations* in 2012. This makes the second edition very timely and, most importantly, highly necessary.

“Sea ice loss in Arctic areas has proceeded quicker than expected, resulting in more variable conditions. There is an expectation of additional research operations, more passenger vessels and increased cargo transportations in polar areas. The future of Arctic natural resources extraction varies in different areas of the region. In the American continental shelf, it is likely to remain passive for some years at least, but in Russia there is increased activity both offshore and onshore.

“Thus, from these changes, there will be new and less experienced ship operators in Arctic waters within the foreseeable future. They need both theoretical and practical advice in the context of varying and challenging conditions and many obligatory regulations as well as voluntary guidelines.

“An important change is the Polar Code, which entered into force in January 2017. The most important part of this second edition is analysis of the implications of the Code, which is examined throughout the relevant sections.

“There have also been two significant agreements from the Arctic Council since the first edition. These are the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, and the Agreement on Cooperation on Marine Pollution Preparedness and Response in the Arctic, which entered into force in 2013. These agreements and the Polar Code provide framing for increased safety and preparedness in polar maritime operations. This second edition of *Polar Ship Operations* contributes towards this goal by helping to put theory into practice.

“Captain David ‘Duke’ Snider is a well-known and respected Arctic shipping expert with extensive operational experience. He has the rare skill of combining his practical knowhow and theoretical approach with practical advice. He blends these into very helpful guidelines that are easy to read and understand. Most importantly, these guidelines can be put into practice *de facto* even by those with limited polar experience.

“He has continued to gain more experience and contributes to polar operations by working in the Arctic in many demanding tasks. He was a main contributor to the transit voyage through the Northwest Passage in 2015 by the Finnish icebreakers *Fennica* and *Nordica*. He has also contributed to many other polar operations, such as the missions of the Japanese research vessel *Mirai*.

I am very grateful for everything I have learned from the author and I can assure you that you will have a great learning experience while reading this book and, most importantly, from putting it into practice in your polar operations.”



BOOK OF THE MONTH:

Polar Ship Operations - a practical guide
Second edition

“Significant changes have taken place since the publication of the first edition of *Polar Ship Operations* in 2012. This makes the second edition very timely and, most importantly, highly necessary.”

Tero Vauraste MSC

Risk, Crisis and Disaster Management, Lieutenant Commander (Ret.) Finnish Coast Guard, CEO Arctia Ltd, Vice-Chair Arctic Economic Council



Order from: pubs.admin@nautinst.org by the end of April 2018

Annual General Meeting 2018

To be held at the Cavalieri Art Hotel, St Julian's, Malta
On Wednesday 23 May 2018

Council Notice 1

In accordance with Article 8 of the Constitution, the Annual General Meeting 2018 will be held at The Cavalieri Art Hotel, St Julian's, Malta on Wednesday 23 May 2018 at 17:00. The agenda is set out below. The AGM will take place after the first day of the Technical Seminar and will be followed by a reception and gala dinner.

Council Notice 2

In accordance with Article 20 of the Constitution, Council shall notify all members of vacancies which are to occur among the officers and members of Council at the Annual General Meeting on 23 May 2018 (as shown below).

In accordance with Article 21 of the Constitution, any two members entitled to vote may nominate eligible persons for election to Council – please send your nomination in writing to the Chief Executive at NIHQ (sec@nautinst.org).

Council Members

Sea-going:

One vacancy available

Shore-based:

No vacancies available

By Order of Council

AGENDA

17:00	Welcome by the President
	Presidential address: Captain Duke Snider, FNI
	Institute business:
	To confirm the minutes
	To receive the annual report of the Executive Board of Trustees
	To adopt the audited accounts
	To appoint the Honorary Treasurer
	To appoint auditors
	Election of Council members
	Election of Vice Presidents
	Election of President
	Presentations of awards:
	Certificates of Fellowship and Recruitment Recognition Awards
18:30	Close of Business and Reception

Join The Nautical Institute's Technical Seminar and AGM 2018 Malta, 23 - 24 May

Tickets are selling fast for The Nautical Institute's 2018 AGM, hosted by the Malta Branch. Register now to join us for the AGM, and a high level seminar at which industry leaders will be discussing some of the key issues facing the maritime sector today. Speakers will include, front line practitioners, ministerial representation from the Government of Malta and flag registries.

We will be hearing how technology is driving major change in our industry and the impact this is having on skills, training and professionalism. Intertanko will be giving delegates an update on ECDIS and ENC's and Carnival Corporation will be providing a technical perspective on the impact of autonomy.

Expanding on the topic of technology, leading professionals from The Cayman Islands Registry, the UK Registry, Glasgow Maritime Academy and others will be exploring superyachts, blockchain technology and the law, and looking at the ways in which these developments will shape the ways in which we operate.

The packed programme also includes speakers from The International Chamber of Shipping and Steamship Mutual, who

will be updating delegates on best practice for mariners dealing with refugees.

As with all our events, results of the deliberations and recommendations for best practice will be published and used to inform the work of the Institute, including through our status at the IMO. Past AGM seminars in London, Aberdeen, San Francisco and Sydney were all well attended and highly successful.

Whatever stage you are at in your career, the seminar and AGM offer the opportunity to learn and share your knowledge with fellow professionals, meet old friends and make new contacts. A full partners' programme is offered.

The Technical Seminar and AGM will be held at the Cavalieri Art Hotel, Malta. A gala dinner will follow day one of the seminar at the impressive Malta Maritime Museum.

Tickets for this event are still available and prices start at only £52 for NI members.



Technical Seminar & AGM 2018
23-24 May
Cavalieri Art Hotel, Malta

TICKETS SELLING FAST

The Nautical Institute's Technical Seminar & AGM 2018

Be part of the discussion...

- Superyacht operations
- Dealing with refugees
- The impact of automation
- Safe operations
- Loss prevention
- Minimising costs and maximising returns

Register your place at: www.nautinst.org/AGM2018

Reducing the risk of collisions with fishing vessels

Identifying and avoiding potential risks

UK P&I Club & Homarus Ltd

In the 2016 policy year, the UK P&I Club suffered four high value casualty cases involving fishing vessels. There is evidence from the other clubs in the International Group of P&I Clubs to suggest that there is a wider problem involving navigation close to fishing vessels. Many Nautical Institute members will be able to confirm this from their own experience.

The UK Club worked with Homarus Limited experts in fisheries and aquaculture to produce a guide for Masters and their bridge teams on reducing the risk of collisions with fishing vessels. The full publication, available online at www.ukpandi.com, provides a fully illustrated guide to the types of fishing vessel mariners are most likely to encounter and the risks unique to each one. What follows is a summary of some of the most important points.

What to look out for

During the passage planning process, it may be worth contacting the vessel's local agent or the local harbourmaster to enquire whether there are any particular fishing-related dangers to be considered when approaching a particular region or port. Extra vigilance is required during calm weather, when many small fishing vessels will go to sea.

The nature of fishing

- Fishing boats' main focus is on catching fish;
- Fishermen generally do not receive a wage, but are paid a share of the proceeds of the voyage;
- Fishing vessels often operate with minimal crew;
- Fishermen are sometimes poorly qualified;
- Fishing vessels often do not show correct lights or day shapes;
- Fishing vessels often operate in channels and harbour approaches.

A fishing vessel leaves port empty and tries to find its cargo at sea, hopefully returning with a full hold. Hence the focus of a fishing vessel is not necessarily on safe navigation but on finding and catching enough fish to make a profitable voyage.

Fishermen generally do not receive a wage, but are paid a share of the profits of the voyage. It is in the interests of the whole crew to catch as much fish as possible in the shortest time possible to achieve maximum profitability. This can lead to fishing becoming the primary objective and safe navigation a secondary consideration.

This share system also often leads to crew numbers being kept to an absolute minimum, in order to maximise each person's share. Consequently, unlike in the merchant service, watch arrangements, particularly on smaller vessels, are often haphazard. During periods of heavy fishing or when gear maintenance is necessary, it is often a case of 'all hands on deck' and it is not uncommon for crew members to work for 24 hours or more without a break. This leads inevitably to fatigue and loss of concentration. Additionally, the crew may be

involved in handling heavy and dangerous gear in poor weather and may not be fully focused on keeping a good lookout.

On larger fishing vessels, particularly in countries where tight regulations exist and are enforced, this problem generally does not arise. Indeed in some countries larger vessels may carry a Captain who is responsible for the safe and efficient operation of the vessel and a Fishing Master who is responsible for finding and catching fish.

However, on smaller fishing vessels and in regions where regulations either are poorly drafted and / or not enforced, the situation will be different. Many countries do not require any qualifications at all for a person to take a fishing boat to sea, and even where qualifications are required they are frequently fairly lax and do not require regular updating. In the case of small and / or single-handed fishing vessels, of which there are huge numbers across the globe, the focus is on catching fish. There will be no lookout and probably no fishing signals or lights and even no radar reflector.

On the high seas problems with fishing vessels are infrequent. The vessels are large enough to carry sufficient crew and are usually well regulated and maintained and there is enough sea room to manoeuvre. The closer to land, the more likely there are to be interactions between merchant vessels and fishing vessels, particularly in Traffic Separation Zones, narrow channels or straits and the approaches to harbours or anchorages. Here, small vessels may be common, and the larger merchant vessels are often restricted in their ability to manoeuvre.

Fishing gear and fishing methods

There are countless methods that man has devised for catching fish. Many of these are specific to inland or coastal waters and will rarely be encountered. The remainder can be divided into four broad categories:

MOBILE OR TOWED GEAR

This category includes, among others, trawls and dredges. The primary characteristic is that the gear is dragged through the water and is not attached to the sea bed. Fish are generally caught in a bag of net which is hauled aboard and emptied. For trawls, the wires or warps that attach the net to the boat may also act as a herding mechanism, concentrating the fish at the mouth of the net.

ENCIRCLING GEAR

These methods rely on surrounding the fish with a wall of netting which is then closed at the bottom and hauled in (purse seining) or with ropes that herd the fish across the sea bed towards the net that scoops them up (anchor seining, fly dragging).

PASSIVE MOBILE GEAR

Here the gear is mobile but it is not towed by engine power, but drifts with the tide or wind. This category includes drift nets, surface longlines and squid jigging. Gear may extend very long distances from the boat.

FIXED OR STATIC GEAR

These types of gear are generally fixed to the sea bed by anchors. They rely either on bait to attract the fish to the gear (hook and line, pots and traps) or on fish becoming entangled in the mesh of the nets (gill nets or tangle nets). Gear may extend very long distances from the boat.

Some types of gear of which it is worth being aware:

'Otter' trawling

With this method, the mouth of the net is held open by the shearing action of two essentially flat boards (otter boards or trawl doors), one either side of the net. These are angled in such a way that as they are dragged through the water they will shear away from each other and will exert an opening force on the net. Note that dimensions shown here are for smaller, inshore vessels, and for larger offshore vessels, nets can be more than 100 metres in length, and used in waters more than 1,000 metres deep.

MAIN SAFETY ISSUES

- Manoeuvrability is restricted during all parts of the operation;
- Vessel should display a green light over a white light;
- Gear is generally astern of the vessel;
- Safe passing distance (astern) is at least 250m and may be more for a large vessel.

Apart from the day signals or lights as outlined above, a trawler is likely to show some or all of the following characteristics:

- A stern ramp sloping into the water up which the net can be dragged onto the deck, or;
- A hydraulic net drum or drums mounted on an aft gantry onto which the net will be wound;
- A steel structure either side at the stern onto which the trawl doors are attached;
- When towing the net, 2 warps (or possibly 3 in the case of multi rig trawls) leading diagonally down into the water astern of the vessel.
- At night it is likely that bright working lights will be showing, generally around the stern of the vessel.

Encircling gear

- Manoeuvrability is restricted during all parts of the operation;
- Vessel should display alternately flashing yellow lights;
- Safe passing distance is at least 500m from the vessel and may be more for a large vessel.

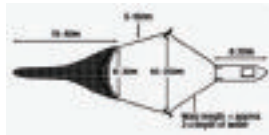
Surface drift nets

- Manoeuvrability is restricted during all parts of the operation;
- Vessel should display a red light over a white light;
- Gear may extend on the surface for very long distances from the vessel;
- Gear will usually be astern of the vessel while being set and ahead of the vessel when being hauled.

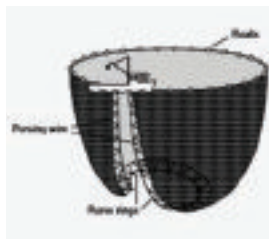
Squid jigging

- Manoeuvrability is restricted during all parts of the operation;
- Vessel should display a red light over a white light;

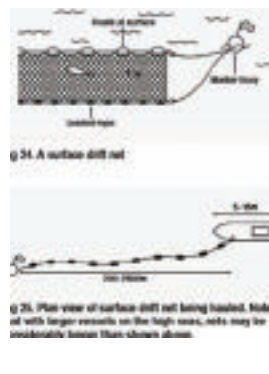
'Otter' trawling



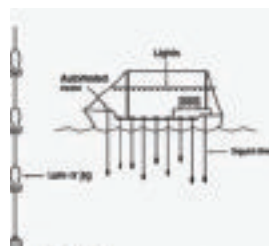
Encircling gear



Surface drift nets



Squid jigging



this will probably not be visible due to the intensity of lights used to attract the squid;

- Fishing lights can be very bright and reduce visibility of other hazards or navigation marks;
- A sea anchor or drogue is often deployed from the bow of the vessel to slow the rate of drift.

Lessons learnt from the incidents

- It is not always easy to determine what sort of fishing gear a boat is using, or sometimes even whether it is fishing or not;
 - Fishermen are sometimes concentrating more on catching fish than on safe navigation; it may be best to assume that they are not aware of your presence;
 - Fishing gear can sometimes extend very long distances from the vessel using it, sometimes many miles. If in doubt, assume the worst case;
 - Fishing vessels can have many sets of fixed gear at sea at any one time and appear to move quickly and erratically between them;
 - Small fishing vessels may not show correct lights or signals, nor are they likely to have a VHF radio;
 - Fishing vessels might use a number of bright lights to assist their crew when working on deck at night. These lights might interfere with the lookout on the bridge of the fishing boat;
 - Do not assume that because you are in a channel, harbour approach or separation lane that the fishermen will know what regulations apply or that they will be in a hurry to get out of your way; sounding the ship's siren or horn will attract their attention;
 - Any manoeuvres to avoid collision should start well in advance and should be large enough to ensure that the vessel passes clear from the fishing boat with adequate CPA;
 - Always proceed with safe speed, making appropriate adjustments according to the visibility and intensity of traffic in the area;
 - Inform Master if visibility reduces;
 - When transiting areas where fishing traffic is to be expected, radars should be set in a way to facilitate the detection of small stationary or slow moving targets – long relative trails are a great tool in this regard. Clutter on the radar screen (especially in periods of rain) can prevent small targets from being discovered on time. Long relative trails will show that a target exists even though it might be hidden in the clutter. They also provide for an extremely useful visual indication of the danger of collision;
 - Communicate, where necessary, with a loud hailer or VHF and find where the gear is deployed. Sound signals should be given as appropriate;
 - In crowded areas it may be wise to station a lookout on the bow of your vessel, with means of communicating with the bridge.
- In a collision with a fishing boat, the fishing vessel will most likely suffer serious damages, will be in danger of sinking (with the associated loss of life) and will need immediate assistance. The main concern of the other ship should be to do their best to provide the required assistance. So if you think you might have hit a fishing vessel, stop immediately and check! 🚨

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MARS

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Mariners' Alerting and Reporting Scheme

MARS Report No. 306 April 2018

Editor's introduction

Several of the MARS reports in this issue are related to falls. Working at height has inherently more risk of negative consequences than not working at height. This work should always be approached with increased vigilance and proper safety equipment such as fall protection should always be used. Working at height should be included in your vessel's Permit to Work programme.

MARS 201821

Four-metre fall from embarkation ladder

→ A chemical tanker had arrived at the terminal. While in port, it was planned to launch and manoeuvre the rescue boat as part of a series of emergency exercises. The drill began with crew rigging the embarkation ladder from the rescue boat stowage deck. The rescue boat was lowered without personnel. The crew then used the ladder to climb down to the boat and unlock the hook.

After executing some manoeuvres on the water, the boat crew returned to the retrieval hook and made the connection. Three crew successfully climbed back up the embarkation ladder. As the fourth crew member was climbing, he suddenly felt exhausted and fell back into the water from a height of some 4 metres, hitting his back on the rescue boat. He was quickly recovered and first aid was administered. The victim was later taken to hospital ashore. He was declared unfit for sea service due to a back injury and was subsequently repatriated.

The company investigation revealed that the embarkation ladder does not rest firmly against the ship's side when rigged at the boat station, due to the flare of the stern. Climbing up a hanging ladder is very difficult and requires much strength and stamina.



Lessons learned

When using a boarding ladder or pilot ladder, ensure it is properly installed and that it is resting against the ship's hull.

MARS 201822

Seven-metre fall into water

Edited from Australian Transport Safety Bureau report 321-MO-2015-004

→ A bulk carrier was in the final stages of loading a cargo of iron ore. In order to read the outboard side draught marks, a rope ladder was rigged over the side adjacent to the marks. The deck officer on duty – of

a large build and overweight – donned a non-inflatable lifevest before descending the ladder. As he neared the bottom of the ladder, about 7 metres below the ship's deck, he called out to the rating on deck saying he was having difficulty.

The rating saw the officer struggling to hold on to the ladder and then falling into the water. The rating threw a nearby lifebuoy to the officer, and it landed a few metres away from him. The officer struggled to reach the lifebuoy. However, because of the sea and swell (1.4m sea on a 0.4m swell) and possibly his own physical fitness levels, he was unable to get to it.

After raising the alarm, the rating then climbed down the ladder and entered the water in an attempt to save the officer. The rating had difficulty breathing and swimming in the rough, cold sea water. He was unable to reach the officer so he returned to the ladder.

Other crew mustered for the rescue. The accommodation ladder and pilot ladder were lowered to the water to assist in rescue. Crew were able to drag the victim on to the ladder's lower platform and immediately began cardio pulmonary resuscitation (CPR) while the accommodation ladder was being raised to deck level with the men on its lower platform. Soon, shore paramedics arrived and CPR was continued, but the victim was later declared dead.

An investigation later found that the victim had gone over the side without fall protection on a ladder that was installed upside down.



Lessons learned

- In many cases, little attention is paid to planning apparently straightforward tasks, such as using a rope ladder. This can lead to important considerations not being taken into account, including the experience and physical ability of persons undertaking the task, not to mention the actual installation of the ladder.
- A 7-metre descent (presumably then followed by an ascent) on a rope ladder is a feat that should be attempted only by those who are physically fit.
- A good rule of thumb is that fall protection should be used in cases where a crew member is at risk of falling 2.4 metres or more.
- In this case, the lifejacket worn was well intentioned but had little effect, because sea conditions were not safe.

MARS 201823

Eight-metre fall is deadly

Edited from official report MO-2016-205, New Zealand Transport Accident Investigation Commission

➔ Stevedores stopped cargo operations on a vessel, stating that the vessel's cranes were not in good order. A cargo gear survey was scheduled with the classification society. During the two-day delay waiting for the surveyor, the crew took the opportunity to carry out rust removal and painting on the cranes.

Shortly afterwards, the port facility's health and safety (H&S) team learned that the crew on the vessel were working on cranes at height without full fall-protection equipment. After the H&S team intervened, work on the cranes was stopped. Later that day an H&S officer witnessed the crew again working at height on the cranes without fall protection. The H&S officer informed the Master that under no circumstances should the crew work without proper personal protective equipment.

With the survey completed, and the cranes ostensibly returned to a safe condition, cargo operations resumed. However, the stevedores were unhappy with the condition of the hoisting wires on numbers two and four cranes. The following day the crew fitted a new hoisting wire on to number four crane, using the only spare wire on board.

Once the cargo operations were finished the vessel departed port. While at sea the deck crew assembled on deck to change the wire on number two crane using the old wire from number four crane. The wire was lowered to the deck where the end was cut off neatly so that it could be connected to the new wire with a cable sock. However, as they were bringing the replacement wire through the rigging it got snagged at the connection with the cable sock.

In order to free the cable, the bosun put on his safety harness and climbed up the ladder. Once aloft he secured his safety harness lanyard around a luffing wire and walked along the jib to reach the point where the cable sock had snagged. When he came to the cross-beam, he could not reach the snag with his lanyard still secured around the luffing wire. He unhooked the lanyard to relocate it to a lower wire so that he could reach the cable sock.

At some point while moving the lanyard between the luffing wires, the bosun lost his balance and fell 8 metres on to number two hatch cover. The bosun was unconscious and bleeding. First aid was administered and a paramedic arrived soon after by helicopter, but the bosun was confirmed dead.

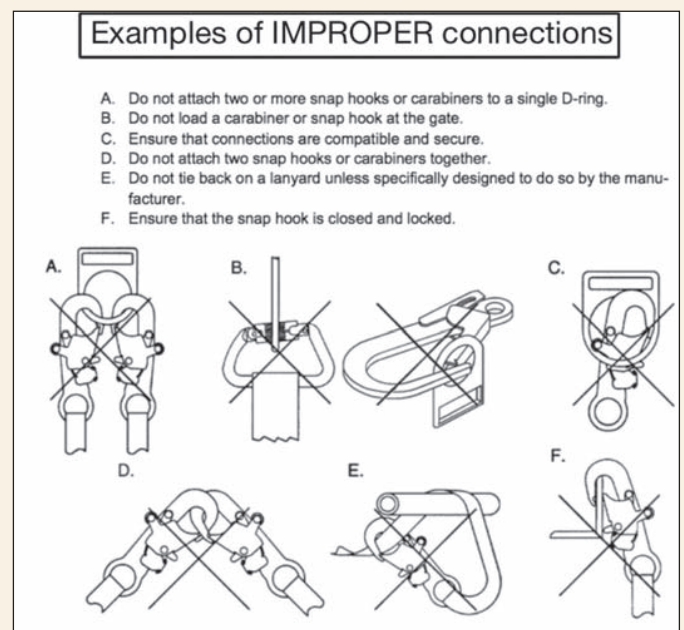
It is likely that the bosun had either removed the locking collar on his safety harness lanyard in preparation for removing the hook from the upper luffing wire, or had clipped on to the lower luffing wire but had yet to engage the locking collar. Any sideways force on the gate as the shock-load came on to the lanyard could have caused the gate to burst out and disconnect the harness from the anchor point.

The hooks on the harnesses were of mild steel with manually lockable gates. The hooks were not stamped with any identification, safe working load or indication that they met the recommended standard for connectors used in personal fall-protection systems. They were not of a type suitable for looping around an attachment point and back on to the lanyard.



Lessons learned

- Working at height is a risky activity and all crew should use suitable safety harnesses that are fit for the intended tasks.
- Never replace a worn wire with another worn wire.
- Attaching a safety harness by passing it through or around the securing point and back on to the lanyard is a dangerous practice that can result in inadvertent release unless the lanyard and hook are designed for that purpose.
- Dual lanyards are the accepted norm to enable safe transfers between securing points; one is always connected while the other is transferred.
- As per the International Safety Equipment Association's Personal Fall Protection Equipment Guide (extract below), there are many ways to connect a fall protection attachment incorrectly.



■ **Editor's note:** Several events in this sequence indicate a less-than-adequate safety culture and poor safety leadership. Accidents like this one just don't happen, but are 'created' by these preconditions.

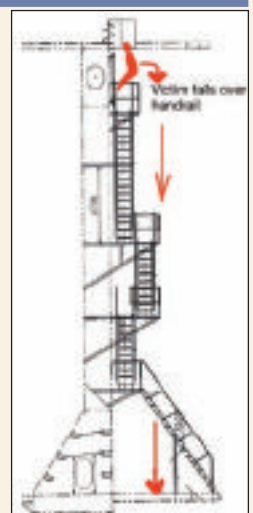
MARS 201824

14-metre fall proves fatal

As edited from Transport Malta official report 15-2017

➔ A tanker was in port for repairs and drydocking. In preparation for extensive hot work during the repairs, some deck crew were assigned to clean cargo tank number two port. In the morning, a toolbox meeting was held for the ship's senior management – but not the men intended to do the actual cleaning work.

The crew member assigned the cleaning duty entered the tank in the afternoon. After a few hours he came out for a break. Before re-entering the tank, he asked another crew member to give him a hand in mopping out the tank. The second agreed and, as it



was now raining, the two crew hastened their pace to get to the entrance to the tank and inside. The two entered the tank, but as the second descended he saw the first fall over the guardrail of the tank access ladder. The victim had fallen about 14m. The alarm was raised, a rescue team mustered and shoreside medical help called. Unfortunately, a little while later the victim was pronounced dead.

Lessons learned

- As with the previous report, the safety leadership and safety culture on this ship appear to have been weak. Not only did the workers involved in the task not attend the toolbox meeting but the report suggests that enclosed space entry procedures were non-existent.
- In his haste to get out of the rain, the crew member did not pay sufficient attention to his safety. Rushing a task rarely gives good results.
- It is not always obvious that a task involving a descent is actually work at height.

MARS 201825

Free freon close call

Edited from UK P&I Club Loss Prevention Notice, 31 Jan 2018

➔ During a third-party survey on a bulk carrier, the surveyor needed to test the emergency fire pump. This was located in a recessed well, approximately 3 metres deep in the steering gear compartment, and accessed by an inclined stairway. The surveyor and chief engineer descended into the fire pump well in order to test the local start function of the pump.

As soon as they descended the ladder the chief engineer sensed something was wrong and ordered they return up. By the time both men reached the steering compartment deck they were experiencing symptoms of dizziness. Other crew took them outside into fresh air and they soon recovered.

Investigation of the incident revealed that maintenance had recently been carried out on refrigeration machinery also located in the steering flat. During this work, freon refrigerant gas from the plant had probably been released and, being heavier than air, had migrated into the pump well, displacing breathable air.

Lessons learned

- Refrigerant gas should be contained. In the event of accidental release, the immediate area and adjacent spaces must be checked and thoroughly ventilated.
- Where refrigeration machinery or other systems that contain special gases are present in a confined space, a risk assessment should be carried out to determine whether the space is to be treated as an 'enclosed space' requiring pre-entry precautions and atmosphere tests.

MARS 201826

Incinerator flashback

➔ A crew member was incinerating garbage in the incinerator room. A smell of paint thinner came from one garbage bag. Despite this, he threw the bag into the incinerator without confirming what was inside. As the crew member was poking the bag in, a flashback occurred from the open



incinerator door, as shown in the still pictures taken from the video. He suffered serious burn injuries on his arm, neck, back and right leg.

Lessons learned

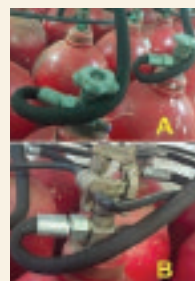
- Incinerator duties are inherently risky. The MARS database lists many such accidents that have caused serious injuries.
- Procedures for incineration should be robust and they should be followed to the letter. They should include garbage management procedures upstream of the actual incineration phase to avoid dangerous waste being put into the incinerator.
- Thought must be given to ensuring dangerous waste does not make its way into the incineration garbage stream, and that it can be easily detected if it does. Use of transparent garbage bags for incineration would make it easier to detect potentially hazardous contents.

MARS 201827

Fixed CO₂ extinguishing system not shipshape

As edited from USCG Marine Safety Alert 13-17

➔ During a US Coast Guard inspection on board a container ship some serious deficiencies were found with the fixed CO₂ extinguishing system. Some of the bottles had become loose and then gradually rotated, as seen in photos A and B. The rotation put undue stresses on the hoses. The 'four bottle deep' manifold system on the ship was considered atypical and may have contributed to an inability to maintain tightness.



Significant cracking of the CO₂ discharge hoses was also found. This condition, known as ozone cracking, occurs over time when ozone in the atmosphere interacts with the polymers found in rubber products, especially where the rubber is under tension.



Lessons learned

- CO₂ bottles should be clamped tightly in place with wooden brackets, as displayed in the photo below. Wooden spacers in between the rows of bottles can also be used to ensure that all the bottles are properly secured.
- When installing bottles, it is important to consider hose and actuator positioning. Stress on each hose needs to be minimised. Securing devices must be inspected for effectiveness.
- During monthly periodic inspections of fixed CO₂ systems, vessel crew should check for bottle rotation, loose bottles and excessive stress on discharge hoses. All appropriate safety precautions should be completed before any action is taken to re-secure or reposition CO₂ cylinders.
- Cracked hoses should be replaced.
- Crew should be familiar with IMO circular MSC.1/ Circ.1318, *Guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems*.



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Case law as a driver of change

Litigation based developments in the maritime industry



Captain Siddharth Mahajan
LLM, AFNI

The impetus for change in maritime industry comes from many sources, but chiefly from serious maritime casualties. Any major accident or casualty is followed by extensive investigations by various bodies, international, national and regional. Depending on the outcome, they may introduce new instruments or amend existing ones. For example, the grounding of *Amoco Cadiz* off the coast of Brittany in 1978 was the catalyst for the implementation of MARPOL 78 and STCW standards and the establishment of the Paris MoU on port state control. At one point or another, most of us will have been taught in colleges or maritime academies about this investigation-based form of development.

Any response to an accident will need to address the concerns of aggrieved parties. This usually involves the courts. Their decisions can have a profound effect on the maritime community and the industry's response may be to introduce changes in response to what they may consider to be unfavourable judicial decisions. This is known as litigation-based development. Unlike the regulatory changes above, we are generally unaware of the background to these changes, and they may go unnoticed. Such decisions continue to shape the industry decades – or even centuries – after they were made. This article aims to give a brief overview of a few such landmark judicial decisions in the fields of:

- Marine insurance
- Salvage
- Carriage of goods
- General average (York Antwerp Rules)
- Limitation of liability.

Running down clause (or 3/4 collision liability clause)

- *De Vaux v Salvador* (1836)

La Valeur collided with *Forbes* in the Hoogly river, Calcutta. Based on the single liability rule, arbitrators decided that each ship should bear half the joint expenses. Upon settlement, payment was due to the owners of *Forbes*, as she was more extensively damaged. *La Valeur's* owner turned to her underwriters, but the claim was resisted. It was held that damage done to the other vessel was not a direct consequence of the perils of the seas and therefore the liability of *La Valeur's* underwriter did not arise. The owner had to bear the loss.

As a result of this decision, shipowners became increasingly aware of the restricted nature of their hull policies and the extent of liability they could face following a collision. The market responded by introducing a 3/4 collision liability clause (commonly known as the collision liability clause) in hull policies. The rationale for not giving 4/4 or 100% coverage was that this would encourage Masters – who in those days were usually shipowners or had at least some share in the ship – to exercise greater caution since 25% of the collision liability rested on their shoulders.

Protection and indemnity clubs

- *De Vaux v Salvador* (1836)
- *The Westenhope* (1870)

In 1855 the Shipowners Mutual Protecting Society was formed to cover the remaining 1/4 collision liability, among other things. Shipowners now had 100% coverage for collision damage done to other vessels. This was the first mutual protection society, and its original deed stated that it had been: “Established for...protecting shipowners against the liability incurred... and also the risk of running down other vessels and craft, not covered by the ordinary Marine Policies.”

The new mutual club was a protecting society with no mention of indemnity. This came in when newer kinds of liabilities emerged. The most notable one was an unreported case, *The Westenhope*, where a ship loaded cargo for Cape Town but deviated to Port Elizabeth, and was then lost on her voyage to Cape Town. The protection offered through bill of lading clauses was lost due to the deviation, meaning the owners were liable for the full value of the cargo. The ship was entered in a protection association, but it refused to entertain the shipowner's claim. Again, shipowners came to realise that they were exposed to potentially high cargo claims and needed to look for potential solutions. The Steamship Owners Mutual Protection and Indemnity Association was formed in 1874, and some of the other already existing protection clubs began offering cover for cargo liabilities. P&I clubs were well established by the end of 19th century.

A report produced by the Insurance Institute of London in 1957 casts doubt on the direct impact of *De Vaux v Salvador* on the formation of protection clubs. Before 1836, collision liability coverage was in fact available to shipowners through mutual hull underwriting associations, but the amount was limited to the vessel's insured value as stated in the hull policy. The main concern of the shipowners was therefore not the coverage of 1/4th collision liability but rather the lack of coverage for excess liabilities (ie those in excess of the vessel's insured value as stated in the hull policy). It was this that led, at least in part, to the formation of protection clubs.

The Inchmaree clause

- *Thames and Mersey v Hamilton Fraser* (1887)

Inchmaree was a steamship that had a donkey pump installed to pump water into the main boilers. During one such operation, the donkey engine was damaged when a valve was closed when it ought to have been kept open. Water was forced into the air-chamber of the donkey pump and split it open. The shipowner claimed the cost of replacing the donkey engine from the insurance company. The House of Lords ruled that such a loss was not covered by ‘perils of the seas’ or ‘all other perils’, and that it was of no account whether the damage was caused accidentally. It was said that the very same thing might have happened on land.

The industry responded by including a clause in the hull policies to widen the scope of cover beyond the ‘perils’ provision. It provided coverage for loss/damage due to negligence by crew, bursting of boilers or through any latent defect, besides other things.

The SCOPIC clause

● *The Nagasaki Spirit* (1997)

In September 1992, *Nagasaki Spirit* was involved in a collision with *Ocean Blessing* in the Malacca Strait. About 12,000 tonnes of *Nagasaki Spirit's* cargo were released into the sea and caught fire. Both ships were engulfed by fire. All the crew of *Ocean Blessing* lost their lives and only two members of the crew of *Nagasaki Spirit* survived. Semco agreed to salvage the *Nagasaki Spirit* using Lloyd's Open Form (LOF) 90, which incorporated Articles 13 and 14 of the Salvage Convention 1989 by reference. The vessel was delivered to the owners in December 1992.

Article 14.3 of the Salvage Convention reads: "Salvor's expenses... means the out-of-pocket expenses reasonably incurred by the salvor in the salvage operation and a fair rate for equipment and personnel actually and reasonably used in the salvage operation..." The question here was, when deciding the salvage award, does the term 'fair rate' include an element of profit (so as to incentivise the salvors)? The arbitrator gave an upliftment of 65% in the special compensation award. By contrast, the appeal arbitrator decided that there is to be no allowance for profit when deciding the special compensation award. The High Court and Court of Appeal also decided that fair rate does not include an element of profit. The House of Lords, to the discontent of the salvors, decided likewise. It was held that that 'fair rate' in Art. 14.3 meant a fair rate of expenditure and did not include any element of profit.

The decision was widely criticised. One of the better examples where dissatisfaction was clearly expressed was South Africa's enactment of its own Wreck and Salvage Act. This states that 'fair rate' refers to 'prevailing market rate' wherein generally a margin of profit is already included.

Induced by:

- (i) the complexity of Article 14 of the Salvage Convention,
 - (ii) lack of recognition by UK's top court of salvors' efforts in maintaining their expensive equipment and responding to emergencies, and
 - (iii) uncertainty in financial compensation for salvors,
- to resolve the challenges at an international level, the industry came up with the SCOPIC (special compensation P&I club) clause as an alternative to Article 14, wherein 'tariff rates' are based on commercial practice and are profitable to salvors.

The Himalaya clause

● *Adler v Dickson* (1954)

A passenger brought personal injury claims against the Master and boatswain of SS *Himalaya* when she fell 16 feet (4.9m) on to the wharf after the gangway moved as she was ascending. There was an exclusion (or non-responsibility) clause protecting the shipowner from liability for negligent injury to passengers. The relevant clause ran: "The company will not be responsible for and shall be exempt from all liability in respect of any... injury whatsoever of or to the person of any passenger... whether the same shall arise from or be occasioned by the negligence of the company's servants on board the ship..." The issue was whether this clause also afforded protection to the Master and boatswain. The court decided that it did not.

● *Scruttons Ltd v Midland Silicones Ltd* (1962)

A drum of chemicals was damaged by stevedores when they loaded it on to a lorry for delivery to the consignee. The damage amounted to £593 and the consignee sued the stevedores for this amount (the carrier was protected by the terms of the bill of lading). The stevedores contended that they were protected by the terms of the bill of lading, which limited their liability to £500. The House of Lords decided stevedores could not benefit from the terms of the bill of lading.

The industry adapted to this situation by extending liability protection to servants and agents through a contractual extension that came to be known as the Himalaya clause, after the vessel in *Adler v Dickson*. This clause is very commonly found in bills of lading.

The Jason clause

● *The Irrawaddy* (1898)

In 1895, SS *Irrawaddy* was stranded off New Jersey due to negligent navigation by the Master. After jettisoning a portion of the cargo, and with the assistance of salvors, she was able to resume her voyage. A call for general average contributions was made, to cover the compensation of the salvors, the sacrifices of cargo and the losses and sacrifices of the shipowner. Cargo owners refused to pay a sum of \$508.29 charged against them in respect of sacrifices of the shipowner. The US Supreme Court found in favour of the cargo owners. It ruled that ship owners were not entitled to receive any contribution as the general average act was the result of their own negligence (ie through the acts of the Master).

This ruling led to the development of a clause in contracts of carriage stating that shipowners are entitled to receive GA contributions from cargo owners. The validity of this clause was upheld in *The Jason* (1912), from which it gets its name. The clause has been modified over time, and is now known as the New Jason Clause. This clause applies only if an average adjustment is made in accordance with the law and practice of the USA.

'Rule Paramount' in York Antwerp Rules 1994

● *The Alpha* (1991)

On 3 August 1984 *The Alpha* grounded in the mouth of the Zaire river in heavy silt conditions. During attempts to refloat her, the water-cooling system repeatedly clogged up and the lubricating oil overheated, losing its lubricating effect. Consequently the bearings and other parts of the engines were effectively destroyed. The cost of repairing the damage was agreed to be \$800,000. The shipowner claimed general average. Cargo interests argued that, because the Master's conduct in attempting to refloat the vessel had been unreasonable, the shipowners could not say that there had been a general average sacrifice.

The court decided that the conduct of the Master was not merely unskillful but unreasonable. However, Rule VII of YAR'74 was applicable to this case and it stated: "Damage which is caused to any machinery... in endeavouring to refloat, shall be allowed in general average when shown to have arisen from an actual intention to refloat the ship for the common safety..." The rule did not require that such attempts should be reasonable. As such the shipowner's claim succeeded.

This did not accord with international practice. Accordingly, the York Antwerp Rules 1994 were amended to include a 'Rule Paramount', which states: "In no case shall there be any allowance for sacrifice or expenditure unless reasonably made or incurred."



The full effect of maritime litigation is often not obvious to the industry


Salvor's right to limit liability when not operating from their ship

● *Tojo Maru* (1971)

Tojo Maru suffered extensive damage following a collision with *Fina Italia* in the Persian Gulf on 25 February 1965. NV Bureau Wijsmuller agreed to provide salvage services on a standard Lloyd's form 'no cure-no pay' salvage agreement.

To cover the aperture left by the collision, a 30ft wide plate had to be bolted to the hull of *Tojo Maru*. This was to be done by firing bolts from a Cox bolt gun, but the operation could not be safely carried out until the adjoining tank had been made gas-free. On 11 April, the chief diver, acting contrary to orders, descended underwater from the tug *Jacob Van Heemskerck* (658gt) to bolt the plate by firing the bolt gun. Gas freeing was not complete and this resulted in a large explosion, which caused further damage to *Tojo Maru*. The owners of *Tojo Maru* brought a claim for £331,767 against the salvors for their negligence.


One of the main questions before the court was whether the salvors could limit liability based on the tonnage of the tug from which they were operating, under the terms of the Merchant Shipping Act 1894. This would mean they were liable only for approximately £10,700. The relevant provision states that limitation based on vessel's tonnage is allowed "where any loss or damage is caused to any property... in the... management of the ship... or through any other act or omission of any person on board the ship". The House of Lords, while sympathising with the salvors, decided that in this particular case the salvors could not limit their liability as the bolt gun was not used in the 'management' of the tug and was not an act 'on board' the tug.

This case exposed various loopholes in the 1957 Limitation Convention. All the delegates at subsequent Comité Maritime International (CMI) meetings, IMO's Legal Committee meetings and the Conference Working Groups sessions, expressed the need to give salvors the right to limit liability in such situations. The Limitation of Liability Convention was amended in 1976, whereby salvors not operating from any ship are given protection through Article 6(4). 

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→ David Patraiko FNI rounds up the latest news, releases and events affecting the maritime professional throughout the world

All eyes on CHIRP


→ The CHIRP Charitable Trust has released its new publication *Perception, Decision Making and Fatigue at Sea* in collaboration with University College London. The report and accompanying video aims to educate seafarers, managers and maritime regulators how the eyes work with the brain.

The study considers the human element in ship design and its associated impact when writing operating procedures. It looks at our vision in different

lighting, how we make decisions, communication, culture, trust and the effects of fatigue.

Knowing and understanding these issues will improve seamanship, helping to make our ships more efficient and keeping our seas safe.

The report and accompanying video can be downloaded from www.chirpmaritime.org

The project was funded by The Lloyd's Register Foundation. 

AI to support crews

→ Rolls Royce Maritime has announced the release of a pioneering Intelligent Awareness (IA) system, which it claims is a major advance in ship safety.


The system is the first of their Ship Intelligence remote and autonomous solutions for commercial application. IA is designed to mitigate the risks navigators face and give the Master and bridge personnel better understanding of the ship's surroundings, especially in poor weather conditions, congested waters or at night.

The system builds a 3D map of the vessel based on light detection and ranging (LIDAR), which uses a pulsed laser beam to measure distances, and is already in use in autonomous road vehicles. It links to GPS data to create 3D environments, allowing crews to

'see' what the human eye can't.

LIDAR creates a 'point cloud,' firing about 300,000 beams of light from a laser and then measuring the time taken to reflect them back to source to render a 3D map. Onboard HD cameras, linked to software can identify vessels or objects and apply learning algorithms to determine characteristics, such as how fast a vessel travels or stops.

LIDAR, GPS, camera data, radar and AIS work together to provide those controlling the ship with a complete overview of its surroundings. A ship's crew can then switch between a 3D map rendered by LIDAR, a radar overlay or a topographical view of the seabed.

A video demonstration can be viewed at: www.rolls-royce.com/media/our-stories/discover/2018/intelligent-awareness.aspx 

Important amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL) have entered into force. These new regulations are effective from 1 March 2018...

→ Ship fuel oil consumption data reporting requirements

Requirements for ships to collect data on their fuel oil consumption entered into force on 1 March. Data will be reported annually to the IMO and to the flag state from 1 January 2019. The flag state will then issue a Statement of Compliance if the data has been reported correctly.

Under the new Regulation 22A on collection and reporting of ship fuel oil consumption data, ships over 5,000 gross tonnage are required to collect fuel consumption data, and describe the method used to collect the data. These ships account for approximately 85% of CO₂ emissions from international shipping.

Garbage requirements


Amendments to MARPOL Annex V on prevention of pollution by garbage from ships:

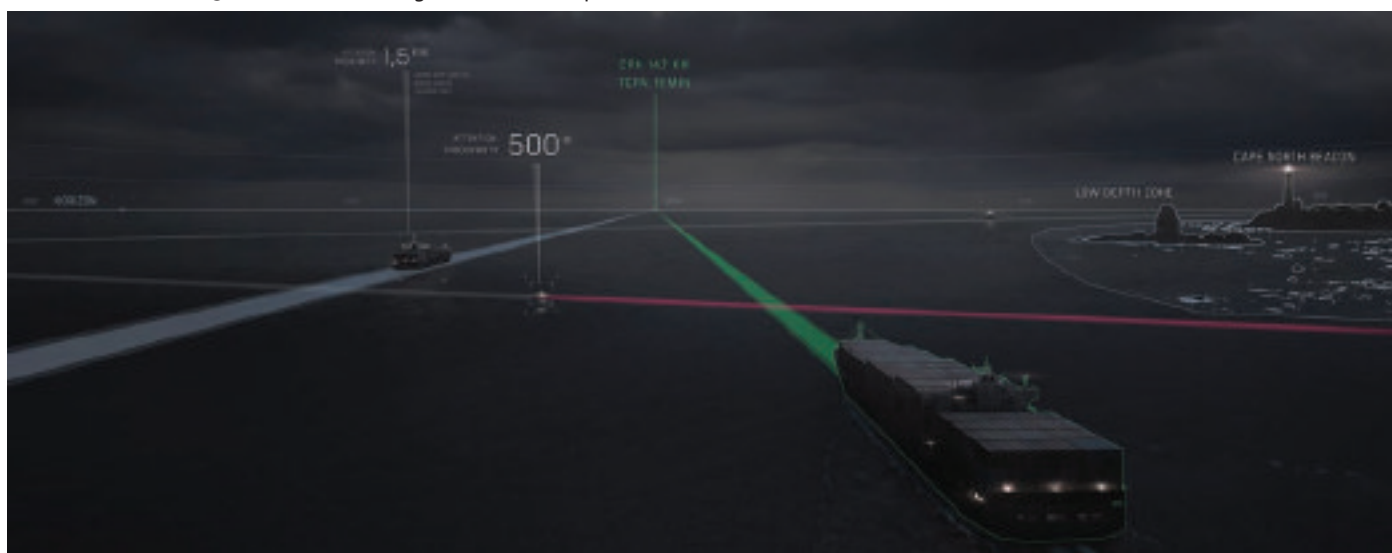
- The shipper should declare whether or not discharge is classed as harmful to the marine environment. A new appendix provides criteria for

the classification of solid bulk cargoes.

- The Form of Garbage Record Book is updated. The Record of Garbage Discharges is divided into Part I for the use of all ships and Part II, required for ships that carry solid bulk cargoes.
- 'E-waste' has been identified as a new category of garbage. E-waste is defined as electronic equipment used for the normal operation of the ship or in the accommodation spaces, including all components, subassemblies and consumables which are part of the equipment at the time of discarding, and which could be hazardous to human health and/or the environment.

Amendments to International Oil Pollution Prevention Certificate

Form B of the Supplement to the International Oil Pollution Prevention Certificate has been updated and relates to segregated ballast tanks. 



➔ Reporting back from conferences, seminars and discussions across the maritime world. Join the discussion at LinkedIn, or email editor@nautinst.org

ISU ASSOCIATES DAY

➔ The International Salvage Union's annual associates' day provided, as usual, a good mix between developments in the salvage industry and how it is affected by the wider shipping sector, legal concern and technical innovation. Aably chaired by Morgyn Davies FNI, this was a conference with something for everyone.

Following a welcome from ISU President Charo Coll, Roger Adams from FutureNautics gave an outline of future trends that will shape the shipping industry, underlining the importance of designing for change. We will have autonomous ships long before we have unmanned autonomous ships, he said, emphasising that crew will be needed to keep deepsea ships running reliably. However, those serving on these vessels – and those managing them shoreside – will have access to an unprecedented amount of data about vessel performance. Whether this 'radical transparency' means data will be readily available to salvors and other interested parties in the event of an incident was not made clear. For all that, human knowledge and experience will continue to play a key role. He quoted a comment from a Rightship executive that once a Master has been in post for two years, every year of experience he has amassed reduces the time required for port turnaround by 20 minutes – a massive saving in time and resources over a course of a year.

The result of greater automation and understanding of data is that, ultimately, things will go wrong less often, Adamson said. But when they do, you won't get analytics going to the rescue, he concluded.

Salvage industry trends

James Herbert presented the ISU pollution prevention survey, which shows that, at least as far as pollution statistics go, things are indeed going wrong less often. However, the focus of the survey itself has also changed, as it no longer concentrates on oil as the main threat. A greater number of cargoes are now seen as potential pollutants, including dirty bulk cargoes and containers. In fact, some 42% of pollution prevented or recovered by ISU members last year was bulk, against 23% crude oil and 20% containers. Interestingly, the number of LOF contracts was considerably up on last year's at 19%, reversing the trend of decline over recent years.

The first session concluded with Charo Coll presenting honorary membership of the ISU and the ISU Meritorious Service award to Hugh Shaw (see photo, above), who recently stepped down after 10 years as the UK's SOSREP. 'Hugh's record as UK SOSREP – carefully and wisely



managing hundreds of incidents – speaks for itself. His work has been recognised by the Queen with the award of the OBE. The fact that the general public do not know Mr Shaw shows how effective he has been: one mis-managed case and he would be very well known for the wrong reasons,' Charo said.

Technological developments

Matthew Sommerville from the Institute of Maritime Engineers, Science and Technology (IMarEST) looked at technological development, but began by pointing out how much of recent 'discovery' has in fact been rediscovery of knowledge from 50 years ago which had since been forgotten. This is partly the result of what he called 'single incident dominance', where response to one major incident, such as the *Deepwater Horizon*, is carried out by those not necessarily familiar with previous incidents.

It is not only the technology that is changing, but also the skills we require, he said. There is a need to move from being a responder to being a 'technology interface unit', able to communicate across different disciplines and with different teams. Those involved will not necessarily be mariners, as people will come in to the industry by different routes.

Response patterns also need to change. Recent incidents have demonstrated the need to have stockpiles of equipment available, rather than put them together once an emergency response is in progress.

There has been a lot of development in dispersants, including the idea of injecting dispersant into the tanks of a vessel being salvaged, so that if there is a leak, the oil comes out already dispersed. Inevitably, there is a great deal of controversy over dispersant use – but the knowledge is out there. One unforeseen problem is that improved ship design for energy efficiency is making dispersal more difficult. Traditionally, dispersant is spread using the

wake of the ship, but today's vessels do not waste energy in creating wakes. One – expensive – alternative is jet spray dispersal from aeroplanes, which are able to reach spill locations more quickly and deploy more efficiently.

One major change in spill response has been the demand for continual, live update, both from the media and the control centre. This doesn't make the response any faster, Matthew said, but it does still have its benefits, particularly the use of balloons and drones to take photographs ahead of cleanup ships and feed data back to them. In addition, there is a big push for data evidence from responders to record exactly what they're seeing and what decisions they're making. This is gathered using worn devices such as body cameras and thermal cameras.

Craig English from Briggs Marine and Environmental Services touched on several of the same issues in his presentation 'Oil Spills: are we prepared?', in particular the question of stockpiling equipment. 'Leading indicators' such as equipment stockpiles, framework agreements and improvements in training suggest that matters are improving, he said – but regulation is very much a lagging indicator, responding to incidents rather than proactively preventing them. That is something that needs to change.

He also highlighted the considerable differences in the way in which incidents are regarded in the offshore (drilling) industry, where criminalisation seems considerably less of a risk than it is for mariners. A spill of 200 tonnes of light crude from the *Gannet Alpha* platform was broken up at sea. It was 48 hours before a press release was issued, and the punishment was a £22,500 fine – for an incident that probably would have meant imprisonment for the Master of a vessel.

Another area that needs attention is the future sustainability of the industry. While it is excellent news that there are fewer oil spills, and they are generally smaller than they used to be, this does also mean that in future there will be fewer people available who possess the experience to deal with them. The answer is better co-operation worldwide, as being a private responder is not really a sustainable business model any more.

Fire at sea

Lars Lange, Secretary General of IUMI, gave a presentation on two matters that are of serious concern to marine insurers – fire on container vessels and on ro-ro vehicle decks.

The *Maersk Honam* is just the latest major

container fire to have hit the headlines. The fact is that there was a major container ship fire almost every single month between July 2015 and April 2017 (more recent figures were not available).

While the IMO has taken steps in the right direction by putting in place requirements for water pressure and monitors, this is clearly not enough. The *Maersk Honam* was built after updated IMO regulations came into effect.

Part of the issue is that fire detection in holds is problematic. Smoke is contained in containers, and only once the fire is so hot that it breaks out of the container is it detected – and by then it is often too late for firefighting measures. The effectiveness of carbon dioxide systems in the hatches is doubtful, Lange said – there were two attempts to use it on *Honam*, and it simply failed. Moreover, crew need adequate training and equipment to contain the fire until external help is at hand.

‘This is a problem that won’t be solved in two, six or even 10 years, but it is really crucial to avoid incidents like those we saw last week,’ Lange said.

Salvage operations in practice

One of the highlights of the ISU Associates’ Day is hearing accounts of advances in salvage work over the year. Stephen Tierney of TMC Marine explained that the vessel was resting on its side in 45 metres of water. While conventional wreck removal would involve breaking the vessel into pieces and raising each one individually, a key requirement of the salvage process was that the

vessel had to be raised in one piece, due to cultural sensitivities regarding human remains on board. The key to success was constructing 33 lifting beams underneath the hull of the vessel to lift her from the seabed. The vessel’s own buoyancy tanks were used to raise the vessel enough to insert the lifting beams, but as only 10 of 19 were undamaged, additional buoyancy was added in the form of rubber buoyancy pontoons. Once the beams were inserted, the vessel was raised using two pontoon barges and then transferred on to a semi-submersible in a 27-hour operation.

‘Raising a whole ship is rarely achievable in practice, and never economic,’ Tierney said. In that respect, while the operation was perhaps not a new development, it confirmed a trend of public pressure exerting a powerful effect on the terms of salvage.

By contrast with Tierney’s account of a single and very high-profile wreck recovery, Resolve’s Nick Sloane FNI gave a fascinating account of cleaning up the damage from the 2017 hurricane season in the Caribbean, in an area that was hit by three intense storms in less than a month.

More than 750 vessels had to be refloated or removed from ports and other areas, including tugs, inter-island ferries, drydocks and yachts. Nineteen teams and 19 crane barges were involved in the operation, in locations where almost no infrastructure survived and salvage teams were simultaneously bringing in humanitarian aid.

The SOSREP system

The day closed with a comparison of two very effective state salvage management systems.

Tony Stone, Australia’s General Manager Response/Maritime Emergency Response Commander (MERCOP), outlined his role as the single national decision-maker for maritime casualties.

MERCOP has powers of invention based on trigger events. It has been able to use these powers to solve some quite difficult problems, he said. These included arranging towage for a damaged vessel, and enabling a vessel with a damaged hull to seek shelter in a suitable area when it had been forced to remove from a berth in dangerous conditions. ‘You haven’t heard of these cases, because nothing happened,’ he said. ‘This was an excellent example of intervention, not interference.’

Les Chapman FNI, who has recently taken over from Hugh Shaw as the UK’s SOSREP, outlined the slightly different – but still very effective – system in place in the UK.

Unlike MERCOP, SOSREP’s powers cannot be used in advance of an incident. The most common use of SOSREP’s power is to establish a temporary exclusion zone around a casualty, restricting access to those who need it. It is the existence of SOSREP’s power to direct an incident, rather than its use, which generally brings results, Chapman said.

Lucy Budd

UK WOMEN IN SHIPPING SEMINAR

➔ The UK has set up a working group to address fairness, equality and inclusion within the maritime sector. Maritime Minister Nusrat Ghani MP joined the first meeting of the Women in Maritime Taskforce saying its work was ‘crucial.’

‘The UK has one of the most competitive maritime sectors in the world and, with only 3% of the workforce being women, it is vital more take advantage of the exciting opportunities the sector has to offer,’ she said.

‘This taskforce will be crucial in opening up the wealth of career opportunities in the maritime industry to women around the country. Today’s meeting will start the journey towards better understanding equality and inclusion in the sector and I want to see many more women taking up careers in maritime.’

The group is meeting under the auspices of Maritime UK which estimates the worth of maritime’s annual contribution to the UK economy at £40bn in GVA, supporting nearly 1 million jobs. The trade generated by maritime activities is worth £500bn each year, estimated to be 95% of the UK’s imports and exports.

The first meeting of the Taskforce brought

together leaders from across the maritime sector, including Bridget Hogan, Director of Publishing and Membership for The Nautical Institute. ‘We are setting out an action plan to work towards putting in place practical steps to increase the number of women in maritime, and crucially within senior roles across its industries,’ she said. ‘It is difficult to address a skill shortage if half of the potential workforce are being disregarded.’

The Taskforce will examine the major issues affecting the sector – including recruitment, pay, progression and retention.

David Dingle, Chairman of Maritime UK, said: ‘The entire maritime sector needs to do much more to address gender imbalance. A balanced workforce at all levels in the maritime sector will undoubtedly improve culture, behaviour, outcomes, profitability and productivity.’

Chair of the Women in Maritime Taskforce, Sue Terpilowski, President of WISTA UK, announced the first-ever benchmarking survey of women in the sector. The aim of the survey is to understand exactly what role women play within the maritime industry. Responses to the benchmarking questionnaire will be treated

anonymously and will include length of service to try to gauge retention levels.

One survey by Spinnaker Global of 100 global companies showed that women held only 1% of senior positions. In the UK none of the companies surveyed had women at executive level. By contrast office support roles are dominated by females.

In contrast to maritime, other UK industries have made strides towards inclusion. The Department for Transport’s (DfT) Strategic Transport Apprenticeship Taskforce has set targets for diversity – for example for women to represent 20% of new entrants to technical and engineering apprenticeships by 2020.

Iain Mackinnon, Secretary, Maritime Skills Alliance, noted that the rail sector in particular has made real progress in increasing the number of women entering the industry. In 2016/17 females accounted for 9% of the technical and engineering apprenticeship starts. In logistics, they account for 12%. Although modest, these figures are ahead of the maritime sector.

Bridget Hogan

CHANDIGARH BRANCH SEMINAR

→ Dr Malini V Shankar, India's Director General Shipping, was invited by The Nautical Institute India NW branch to attend our seminar 'Chandigarh – The Emerging Shipping Support Hub' as chief guest. Over dinner prior to the event, Dr Shankar was keen to ask NI NW Committee members and invitees about the prevailing maritime scenario and activities in Chandigarh Tricity, and the surrounding region. She impressed everyone with her thoughtful queries and keen attention.

The seminar began in traditional Punjabi style, with the chief guest and the guest of honour, Sh. Ravindra Kumar, being received by the NI NW Committee before being ushered into the hall under a hand-embroidered 'phulkari'.

In his welcome remarks, Capt M S Kahlon thanked Dr Shankar for making time for this visit, the first time the Director General of Shipping (DGS) has visited Chandigarh in the past 13 years. The Chandigarh maritime fraternity is always enthused by the visits of DG Shipping, Capt Kahlon said. It was after the visit of then DGS Mr Joseph in 2002 that the first shipping company office was set up in Chandigarh. After another visit from the DGS in 2004, the process for establishing a post-sea institute was begun.

Chandigarh is currently home to seven RPSL (licensed recruiting) centres, three marine professional bodies, one post-sea institute, a regional office of the Maritime Union of India (MUI) and the Merchant Navy Officers Association.

The NI seminar looked into ways of channelling these assets, and the expertise of more than 3,500 seafarers based in the region, to create a shipping support hub. Excellent broadband connectivity and the government policy of digitalisation provide further support for these ambitions.

Mr Anil Kumar, global head of TMC Shipping, speaking on behalf of licensed crewing and recruitment companies, requested the DGS to remove stringent licensing procedures to encourage the establishment of more marine training institutes. He also suggested setting up a fund for retired mariners to secure their future.

Capt K J S Sujlana, chairman of the Chandigarh Chapter of The Company of Master Mariners (CMMI), said there was a need for young mariners to be trained in behavioural sciences by engaging with institutes such as the Panjab University, ISB etc.

Vice Admiral (ret'd) H S Malhi, committee member of NI NW Chandigarh, highlighted the growing shortfall of good officers in the Indian Navy. He suggested that this could be taken care of by enabling lateral entry of trained merchant navy officers – who are available in



plenty – through an appropriate competitive examination. To promote entrepreneurship, small shipping companies should be encouraged to manage transportation of goods and people on barges through small waterways in the country, he said. There is a huge potential for setting up ship design centres in the city, which not only has good engineering colleges, but contains many bright young minds to explore these opportunities, he concluded.

Capt Vijay Arora introduced the guest of honour, Sh. Ravindra Kumar, who was himself a seafarer before being selected to join the Indian Civil Service (IAS) in 2011. He went to become the first IAS officer ever to scale Mount Everest. Kumar's motivational address, 'From Deepest Oceans to Highest Mountain', was one of the highlights of the evening. He shared his daring climb of Mount Everest, and spoke about the art of creative and positive visualisation that can help anyone achieve their dreams.

NI NW interim Vice Chairman Capt Rohit Bhatia introduced the chief guest, DGS Dr Malini Shankar, as an officer with a brilliant academic and professional record, who had herself held a private pilot's licence.

In her keynote address, Dr Shankar conveyed how impressed she was by both the concept of the seminar and the expanding activities of the maritime sector in the city. She commended the various professional bodies for upgrading the skills and knowledge of budding seafarers in the region and creating an ecosystem that is able to promote the growth of shipping services in the region.

Dr Shankar produced a series of statistics to

counter the fallacy that the shipping industry is currently facing a dismal situation in terms of recruitment at the global level. She stated that we are currently seeing not only improved recruitment of Indian sailors by global shipping companies, but also an increase in Indian tonnage. She outlined various government initiatives to upgrade the skills of seafarers and to modernise the sector. This included programmes such as Sagarmala, which promotes coastal shipping to generate more employment opportunities. By 2020, nearly 30,000 additional seafarers will be required in all categories, she remarked.

Responding to Anil Kumar's request for leniency in licensing and registration procedures for maritime institutes in running various training programmes, Dr Shankar was clear that continued vigilance and regulations are necessary to improve standards of education and training.

However, procedures have been put in place to ensure the speedy processing of applications for approval of new courses. A comprehensive portal will soon be available to take account of various issues, including suggestions raised during the course of the seminar.

NI NW members and seafarers of the region conveyed their gratitude to Dr Malini for her visit. We are already looking forward to another opportunity to welcome her and other officers from the directorate.

Capt M S Kahlon



A round-up of news and events from NI branches across the world.
Send your updates to hg@nautinst.org

BELGIUM BRANCH

Drone and robot inspections on board

➔ The second MARS debate of this academic year dealt with the increasingly relevant topic of inspections performed with the assistance of drones.

NIBB chairman Walter Vervloesem, FNI opened the evening with a passionate plea in favour of The Nautical Institute, outlining the advantages of becoming a member of this internationally renowned organisation. The Belgian Branch provides complementary training and support to the students of the Antwerp Maritime Academy, and while the MARS debates are just a part of this, participation can be considered as the first stages of the students' CPD.

David Knukkel, CEO of RIMS (Robotica in Maintenance Strategies), guided the students through the world of drone inspections. David sailed on container vessels before becoming a superintendent, working as a senior maintenance consultant for Boskalis and Smit-Lamnalco, among others. In 2015, he founded RIMS, a global inspection, project and maintenance consultancy company, with the aim of introducing safer and more cost-efficient maintenance practices by automating dangerous maintenance tasks. The first target was to automate the inspection of enclosed spaces.

David gave an overview of the various industrial revolutions the world has gone through the past few centuries, the current – fourth – one bringing us the revolution created by nanotechnology, automation and robots. The challenge is to translate these technologies into workable solutions.

The main purpose (and so far virtually the only one) for which drones are used is visual inspections. The drone is fitted with a camera on top, and often with an infrared camera to detect hot spots. Close-up inspections can be done by pressing the drone – protected by a cage – against the object to be surveyed.

Drones can be used to inspect all enclosed spaces on board ship, including but not limited to ballast tanks, cargo tanks, void spaces and duct keels. They can be used to carry out class surveys (RIMS has received approval from several classification societies, including ABS, BV, Lloyd's and RINA), damage surveys, pre-docking and pre-purchase inspections. They can also be deployed to check inaccessible spots in the holds of bulk carriers, where remnants of the previous cargo can become trapped after discharge. This ensures proper cleaning, and avoids rejection of holds and/or contamination of the next cargo to be loaded.

In future, it will probably be possible to add



sensors that will allow flying drones to perform paint thickness measurements. At present, these measurements are taken by 'crawlers' or human inspectors. Crawlers have certain disadvantages – they cannot be used on rusty surfaces and cannot get round tight bends in the structure of the ship to be surveyed. In this respect drones can definitely provide added value. Autonomous inspection of double bottoms is possible, but surveys will need to be well prepared based on drawings to ensure that all compartments are fully surveyed and that the location of the tank exit is properly defined.

The advantages of drone inspections over traditional methods where a surveyor has to enter enclosed spaces – which are inherently hazardous – are obvious:

- The space does not need to be ventilated and made safe for human entry, doing away with the need to issue work permits. This not only makes operation safer but also reduces the time needed to prepare for tank entry and results in lower costs. However, drones are not intrinsically safe, so the space should not contain any explosive atmosphere. In this context drones may in the future be equipped with gas detectors that would give alerts in the event the situation becomes hazardous;
- No need to install staging or cherry-pickers;
- Drones can perform inspections in a much shorter time.

Inevitably, there is room for improvement. The drones in use today cannot be operated easily in windy conditions as they are wind-sensitive. Flight times are generally limited to about 10 minutes, after which the batteries should be changed. Rapid developments in battery technology mean it is likely that this issue, at least, will soon be solved.

In future, drones will also be able to carry out more detailed and automated surveys. Autonomous flights can be made by pre-programming routes, so that the drone maps itself inside the space.

David's interesting presentation included a demonstration of a real drone in operation. The huge meeting auditorium offered lots of space, and following the presentation, students were given the opportunity to fly the drones themselves. Needless to say, this was the highlight of the evening!

W Justers, AFNI and W Vervloesem, FNI

SINGAPORE BRANCH

Subsea 101

→ An interactive 3D presentation introduced members and their guests to the basics of the offshore industry. Manfred Lim, a field development engineer specialising in the design and optimisation of subsea field architecture gave an overview of the lifecycle of an offshore oil/gas field, including:

- How offshore prospects are discovered, appraised and developed;
- The various elements of a subsea field and the thought process behind the development and optimisation of subsea field architecture;



- An overview of the various types of vessels utilised for production and the vessels utilised in the installation of SURF (subsea umbilicals, risers and flowlines – that is, undersea infrastructure);



- Latest developments by SURF and subsea production systems (SPS) players in optimising field development elements to reduce the cost of subsea field developments.

NW ENGLAND & N WALES BRANCH

Chartered Master Mariners

→ Captain Peter McArthur FNI, deputy chair of the Chartership Registration Authority (CRA), gave a presentation on the introduction of Chartered Master Mariner (CMMar) status.

The concept of individual chartership dates back to 1858, when it was a legal instrument that gave the right to carry out some activities without paying taxes. Today, it is an accepted recognition of expertise above and beyond what is usually regarded as 'normal' practice. Under STCW you may be surprised to note the term Master Mariner is not defined. Historically the highest academic award was 'Extra Master Mariner', but it is vital to note that this is not the equivalent of CMMar.

Over the years there has been no single maritime body that could award this recognition. Two attempts were made in the past to establish this recognition, but the difficulty was to co-ordinate the many maritime organisations that wanted to be involved. Having achieved this objective, the Honourable Company of Master Mariners (HCMM) launched its CMMar scheme last year.

Many organisations needed to be engaged within the overall process of developing the scheme, including HCMM, NI, RFA, IFSMA, MNTB, RN, UKCS, MCA and IMarEST. It was recognised that a professional body was needed to progress the aims of CMMar. The Nautical Institute (NI) was the obvious choice as facilitator.

The CMMar is only awarded through the co-ordination of several bodies, making it unusually robust – other charterships are accountable just to a single body. The main focus of the CMMar is the degree of self-direction achieved by an individual, rather than a 'tick box' approach. The award of CMMar also means our industry can sell itself

more positively to a wider audience, as the 'Chartership' award is recognisable globally. The initial pilot year, where applications were by invitation only, ended in December 2017. To date, 19 awards have been made, with others already in the system. From 1 January 2018, the scheme was opened to general applications. To dissuade frivolous applications, a non-refundable deposit is payable.

In the longer term, Professional Review Interview (PRI) centres will be established, as the in-person interview with trained interviewers will be a key element of the chartership process. The interviewers will themselves be audited to ensure high standards are maintained. It is envisaged that once the UK has PRI centres operating, they will be expanded out to Europe (perhaps in 2019), and then into all the other major maritime centres worldwide. No dates have been fixed, but availability of interviewers will likely be a deciding factor.

The presentation was then opened up to questions from the floor:

- How will the system maintain high standards in the global environment?

The PRI assessors will be a key part of the quality assurance process. Assessors will also be audited to ensure there is no diminution of standards.

- If the CMMar is taken up quickly by many Masters, will this ultimately devalue it?

This is an elite qualification, and it is not expected that many will meet the rigorous requirements. For instance, declared qualifications and experience will be individually verified through employers, peer groups etc, so anyone providing inaccurate data would not merit a PRI assessment.

- Can a CMMar be awarded to a non-mariner, for example to Royal Navy personnel?

Personnel from other marine vocations will be able to apply for CMMar status. For example, the current Secretary of State's Representative (SOSREP) for marine pollution incidents is not a Master Mariner. However, the system does require that anyone applying for CMMar must have been at sea in some commanding role. This aspect of the CMMar is subject to further review. Further discussions with the audience indicated concerns that merchant Captains might need only a short single trip to earn the title of Master Mariner, yet would still be able to apply for CMMar status. It was unclear whether 'equivalences' that may be available might diminish the weighting of the time served at sea as a Master Mariner. Some audience members voiced their disapproval over this aspect of the application requirements.

- What research was carried out before there was a coherent agreement that CMMar was the best option?

A great deal of research was carried out across many international organisations in the larger maritime environment. Introduction of CMMar was seen as very positive, and it was agreed the bar had to be set high. It was also noted that applicants who were not already members of recognised maritime organisations (such as NI, IMarEST, HCMM) would undergo an even more thorough review of their CV.

Captain Ian Mathison FNI thanked Captain McArthur for providing such an enlightening overview of the Chartered Master Mariner scheme.

Derek Gallagher MNI

SW ENGLAND BRANCH

Seafaring – a lifelong occupation?

→ Captain Robert Hone (Hon Sec) introduced Dr Polina Baum-Talmor, a researcher at the Seafarers International Research Centre (SIRC), Cardiff, who spoke on the topic of seafaring as a lifelong occupation. Her presentation to the branch was a brief synopsis of work undertaken for her PhD, which considered changes in seafarer's attitudes to employment and the factors affecting them.

In the course of her research, Polina asked a series of questions, including:

- To what extent are flexible employment arrangements perceived as beneficial to employers?
- What are the perceived implications of flexible employment arrangements for employees?
- What is the relationship between the flexibility of employment and the occupational identities of seafarers?

During the course of her research, which was qualitative rather than quantitative, Polina carried out non-participant observation and interviewed more than 60 seafarers on trading general cargo and container vessels.

Feedback from crew interviews – mainly with crew from developing and emerging economies such as the Philippines, India, Russia and Ukraine – established that the most common reason for going to sea was 'to earn and develop skills transferable to a shoreside occupation'. The development of transferable skills for roles such as cook, electrician and engineer is important. It provides individuals with a 'double' occupational identity that enables them to work

ashore without investing in further training.

The interviews also found that there was a limited sense of 'calling' and no passion for the sea among the seafarers interviewed. For many of the crew interviewed seafaring is seen as being a transitory phase of life in order to earn money and develop skills. Those interviewed considered that 35 to 40 was the optimal age to leave seagoing employment for a shore-based job, either in the maritime industry ashore or in a different industry.

Many of those interviewed expressed their concern about the availability of shore-based work, fearing that they may not be 'able to escape the net' and by default seafaring could become their life-long occupation. Other concerns related to the relatively high seagoing salaries and tax advantages enjoyed by seafarers, which can hinder movement ashore. Pressure to maintain a high salary can also be exerted by the seafarer's family.

Another factor that affects the seafarer's attitude towards employment at sea is that, whilst at sea, the seafarer lives in what can be seen as a 'total institution'. This provides a certain sense of security. As one interviewee stated: 'I get fed, I'm always warm, I don't pay for water, I don't need to pay bills!'

Employment at sea has intense push and pull factors that define the attitude and occupational identity of the seafarer. Current employment practices in shipping, though perceived as beneficial to employers at the moment, might come at a cost, especially with regard to employee attrition for the long term.

An interesting discussion followed the



presentation. Members asked how the term 'seafarer' had been defined, the sample size from which conclusions had been reached and whether a single sector of the industry (general cargo and container vessels) could provide valid findings for the multifaceted global industry. Polina explained that the use of qualitative research methods would enable her to present a complex picture of employment in shipping, and that some of her findings were supported by prior research that had been based on larger samples of seafarers. Additionally, as most seafarers are now recruited from developing and emerging economies, the research sample was more or less representative of the global labour market for seafarers.

Members felt that the presentation gave a negative view of seafaring. While they recognised what had been found, they felt that there were positive aspects of seafaring which had not been considered. It was agreed that the differences to employment terms and conditions over the past 40 years might have had something to do with the overwhelmingly negative views with regard to employment at sea that represented the majority of responses in the study.

In the past, seafarers generally enjoyed better terms and conditions and more security in their employment. This normally enabled many seafarers to experience the positive aspects of work at sea such as travel and comradeship associated with life on board, compared with employment nowadays. It was suggested that different attitudes to seafaring might have been established by studying seafarers working in different sectors – particularly the small ship sector. A final tongue-in-cheek comment also suggested that 'seafarers are happiest when they are moaning' and asked whether this had been factored into the research questions. Polina's PhD thesis is available on the Cardiff University website <http://orca.cf.ac.uk/id/eprint/109438>

Two videos on You Tube produced by Jeff HK entitled (i) '10 Reasons why the Merchant Marine is Awesome' and (ii) '10 reasons why the Merchant Marine Sucks' make interesting viewing. They give simple and clear comments on the positive and negative aspects of life at sea in the 21st century.

Paul G Wright MNM FNI

SOUTH EAST AUSTRALIA BRANCH

→ The Branch conducted a workshop on the theme of 'Recruiting for diversity and inclusion in maritime' as part of its continuing Women in Maritime initiative. The workshop took place at HMAS Watson in Sydney, and was held in association with the Port Authority of New South Wales and the Royal Australian Navy. Keynote speaker was Glenn McPhee, the Executive Manager at Manpowergroup and Director of Australian Defence Force Recruiting. The event was organised by Jeanine Drummond of the branch and was well attended and received. This was the second in a series of events on this theme planned to take place throughout 2018.

The SE Australia Branch AGM will take place on 9 May in Sydney. Members should contact the branch secretary for details.

Kendall Carter AFNI



Corporation of Trinity House

→ Captain Keith Hart FNI, a Younger Brother of Trinity House and past Master of the HCMM, spoke to the branch on the work of Trinity House, including the history, status and future plans of the General Lighthouse Authority. He looked at three key areas of the organisation: where Trinity House comes from, what Trinity House does and what lies ahead.

Keith began his talk with a short video describing the work of Trinity House, which is a charity dedicated to safeguarding shipping and seafarers and providing education support and welfare to the seafaring community. In addition, Trinity House is a lighthouse authority, which has the responsibility to deliver reliable aids to navigation service for the benefit and safety of all mariners around the coast of England.

The history of Trinity House can be traced back more than 500 years to the granting of a charter by King Henry VIII in 1514. Keith covered the history of Trinity House in a succinct manner, providing many interesting insights into the Corporation. It was interesting to learn that during the First World War Trinity House was a neutral organisation and maintained the lights in operation 'for the use of all seafarers'. The policy was changed in the Second World War where all the navigation lights for which Trinity House was responsible 'went out' with only the occasional needs of Allied ships being recognised.

One of the major developments of recent decades has been changes in technology allowing for the automation of lighthouses. The process of automation took 10 years from 1989 to 1998. New technologies ensure that lights are powered by batteries, which in turn are charged by solar panels.

Today Trinity House employs approximately 200 people and is responsible for maintaining 65 lighthouses, nine light vessels, 22 beacons and 450 buoys. It also controls seven DGPS (differential global position satellite) stations and 36 AIS monitoring stations. Trinity House inspects and audits up to 11,000 navigational aids provided by local port and harbour authorities. To undertake this work, the Corporation operates three ships: *Alert*, a rapid response vessel, *Patricia* and *Galatea*. *Galatea* was designed with buoy-handling, wreck-marking, towing and hydrographic surveying capability.

Identifying and delivering the right mix of aids to navigation for future needs is an intrinsic part of the duties of Trinity House. In the publication *2030 – Navigating the Future** Trinity House recognises that 'aids to navigation will continue to make a significant contribution to the delivery of the e-navigation concept' and that the lighthouse authorities will continue to 'provide an appropriate mix of visual and radio



Captain Keith Hart FNI (speaker) with Captain Bob Hone FNI, branch secretary



THV *Galatea* on a visit to Plymouth

aids to navigation for all mariners'. The focus of Trinity House's future efforts will include:

- The convergence of networked communications
- The development of ECDIS and ENC
- The human/machine interface
- Autonomous vessels
- The bridge of the future.

Trinity House undertakes considerable charity work and disperses about £5 million per year to its causes. The Corporation supports its own alms houses for retired seafarers and contributes to more than 20 seafarer organisations, including the Jubilee Sailing Trust, the Sailors Children's Society, the Sea Cadets and Seafarers UK. Its charitable work also includes support for the future manpower of the shipping industry through the Trinity House Cadet Scheme, incorporating the Maritime London Cadet scholarship scheme and the Conway (Merchant Navy) Trust.

Members showed considerable interest in the work of Trinity House, and asked questions about the value of visual navigation aids in an age of electronic navigation, the structure of Trinity House, the roles of the Elder and Younger Brethren and fundraising activities.

Paul G Wright MNM FNI

*2030 Navigating the Future General Lighthouse Authorities, The United Kingdom and Ireland
<https://www.trinityhouse.co.uk/asset/1675/download?1463124408>

HONG KONG BRANCH

'What you see is not always what you get – CHIRP Maritime'

→ More than 30 members and guests gathered on 15 March 2018 for this presentation by Capt Jeff Parfitt FNI, Director of CHIRP Maritime.

Capt Parfitt looked at recent work involving research into eyesight and mistaken perception, which led CHIRP Maritime to join with University College London to try to understand more about the interaction between eye and brain. He introduced CHIRP's new publication, *Perception, Decision Making and Fatigue at Sea*, and described the initial findings plus some of the questions CHIRP hopes to answer in future research. He also showed an excellent video on the topic. Booklet and the video are both available on the CHIRP Maritime website.

We learned that different parts of the eye are used depending on the available light, and that it takes 30 minutes to establish night vision. Every time a watchkeeper looks at the ECDIS screen they effectively destroy their night vision.

One frightening fact is that the human brain can only cope with four moving targets at one time. This has serious implications for any watchkeeper in the English Channel or the Singapore Strait, for example, and may explain some navigational accidents.

Another interesting snippet is that it is quite difficult for the human eye to distinguish grey objects in the peripheral vision – which explains why many sports teams use a grey-coloured away strip (although it does not seem to have done the England football team much good).

In a thought-provoking case study, Capt Parfitt discussed the recent report into the loss of *El Faro*, which places all the blame for the loss of the ship on her Captain, despite making around 50 recommendations aimed at the US Coast Guard. He discussed the Captain's perception that his ship was well-found and fit for purpose, and considered whether this perception informed his actions.

It was an interesting and stimulating presentation. One talking point emerged from the video, where the UCL students unanimously assert that decisions made by groups are almost always more reliable than decisions made by an individual. They feel that a discussion by the bridge team before any action is taken will result in fewer accidents. Sadly, they may be right, but it is unlikely to happen. In any case, imagine the following exchange on the bridge:

Master: 'Starboard 30.'

Helmsman: 'Are you sure, Captain? We might discuss an alteration to port.'

We must conclude that such democratic procedures are unlikely to emerge in the foreseeable future.

Alan Loynd FNI



Letters

JOIN THE CONVERSATION

Send your views and opinions to us at editor@nautinst.org, write to us at 202 Lambeth Road, London SE1 7LQ, UK or become part of our online community:



www.linkedin.com/groups/Nautical-Institute-1107227
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Navigation assessments

➔ I read with interest Captain Leedham's article in *Seaways*, February 2018. I have been previously rather puzzled over the need for navigation assessments, but obviously there is a need for them in some ships. I prided myself on my navigational ability when I was at sea and if I had not known what I was doing or if I had been careless I would have been lost or gone aground; the thought of being assessed would never occur to me! The prospect of navigating a ship all over the world was to me one of the attractions that led me into a career at sea. Many (but not all) of the ships in which I sailed as mate and master were very basically equipped with no gyro compass, no echo

sounder, no radar, but we had a wind-up chronometer, my own sextant, an azimuth mirror on the standard magnetic compass and a wonderful piece of equipment called a deep sea sounding machine; also, we had a patent log on a long log line and of course Radio Direction Finding, which had serious limitations. Navigation was interesting and demanding.

The penultimate paragraph in Capt Leedham's article is very pertinent. I must be one of those 'privileged' seamen that Capt Leedham refers to who received a nautical education on board well run ships (which were much better equipped than the ones I have referred to above). As apprentices we received instruction from all the

ship's officers in all the subjects in which we would be examined for our certificates of competency and every year we took an examination set by the Merchant Navy Training Board. We were also encouraged to study on our own. In addition to this we kept a watch on the bridge in coastal waters and were taught coastal navigation by the officer of the watch and we were encouraged to take sights when deep sea. This onboard education stood me in good stead for the future and greatly reduced the time I would have to spend at school (at my own expense) prior to sitting for my 2nd Mate's Certificate. The system of preparing for qualification has changed very much since my early days at

sea, but has change been for the better?

I never heard the word 'mentor' or the phrases 'bridge resource management' or 'Continuing professional development' when I was at sea, but all these were normal, important parts of my career progression even though I did not know the labels.

Capt Malcolm C. Armstrong FNI

Launching boats and PPE

➔ The Captain's Column in January's *Seaways* gave an interesting account of the problems in launching and recovering rafts and boats. When launching lifeboats from davits (either open or enclosed boats) I used to tie a line connecting the forward and aft falls. I tied the blocks together, with enough slack not to impede releasing and engaging. This ensured that both blocks would stay within a boat length of each other. It proved useful in clearing the boat and even more useful when returning. If you have to stem the current when returning, it can happen that engaging the forward falls leaves the aft falls astern of the boat. Yes, you can drop back with the current and recover the block, but with the falls connected the aft block will be easily reached, as it has to be

within a boat length. I never had issues with the line connecting the falls fouling.

I was interested in Steve Barnett's letter in the same issue, learning that all staff are required to wear hi-viz vests. This requirement has become common in the last 20 years. While chatting with an RTG (rubber-tired-gantry) driver at a large container terminal, he remarked, 'I used to watch for people, now I just watch for vests'. His point being that someone without a vest was less likely to be seen, as he had been 're-programmed' to watch for vests.

John F. Lewis, FNI
[SeaFire Training](#)

Seeking Leith Nautical College cadets

➔ Former staff and students of Leith Nautical College are hoping to track down old colleagues, classmates and friends for a reunion event in Edinburgh in September. Everyone connected to the former maritime training centre is invited for a weekend of activities in Edinburgh on 29 and 30 September 2018. An evening reception will take place on the Saturday at Edinburgh College's Milton Road Campus, the home of Leith Nautical College from 1978 to 1988.

South Leith Parish Church – which has historic links with the maritime community – will host an exhibition about the history of Leith Nautical College and visitors are invited to bring along their mementos. The church will also hold a service of thanksgiving on the Sunday morning.

Gordon McFadzean, former head of Electric and Electronic Engineering at Leith Nautical

College, said: "Students of Leith Nautical College have travelled far and wide in the course of their work, playing vital roles in modern maritime history. This is a fantastic opportunity for people to get back together and catch up, and I'm sure there will be plenty of incredible tales to swap.

"I hope that any former students and staff will be able to come along and that they can spread the word to anyone they're still in touch with. It would be wonderful to see everyone again."

To register interest please contact Edinburgh College Development Trust manager Sheena Stone at development.trust@edinburghcollege.ac.uk. Anyone with a connection to Leith Nautical College is asked to spread word about the reunion to other students and staff.

Gordon Coutts
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Elements of command

→ I am always surprised that our recent command conferences seem to dwell on many professional subjects, that are without doubt important, but never actually look at command as a leadership quality and how we are going to instil it. It would seem that even those that wish to write on command appear to be embarrassed to discuss the basis of command, which must rest on the pillars of discipline and leadership.

There is an apparent concentrated effort to make ships and those on them an extension of the office, forgetful of the fact that the sea is a totally different environment, with its own laws, language, traditions and responsibilities, requiring different qualities for those commanding ships than those required ashore.

In certain countries the tradition instilled on the great sail training ships continues, especially in India where far thinking companies have established their own training academies alongside the traditional maritime colleges. It would seem that in our haste to embrace the considered 'new dawn' of liberties of the 70s and 80s, European nations have decided to abandon such training without considering what to replace it with or the impact this would have on our Merchant Navies.

The command system on ships in the past was enhanced by the appointment of seagoing senior officers to positions of authority in shore offices. Because of their seniority, their orders were accepted by the sea staff. They were also able to use their influence ashore in ensuring that company demands for on board procedures were practicable and if not, translate the reasons why, because of their ability to place themselves in the situation of those receiving such orders.

This allowed an admiralty-like system of orders passing from the civilian staff of the office through these officers to the Captains and officers at sea. Those at sea were not reticent in saying an order was wrong. The great advantage for the company was a management

system that had an understanding of the sea and an accepted chain of command from shore to the ships and those who served on them.

DEFINING COMMAND

There are many definitions of 'command' as an action and the qualities required to enable this. Above all else, someone who would command must have not just the ability to order correctly, but the confidence in that ability and leadership that emanates to those under their command in order that they follow the commands in a good and timely manner.

One prevailing theme is that before having a position of command, first must come the understanding of obedience. Obedience in today's society ashore implies some form of subservience to authority, but which at sea is accepted by the seamen as essential to the good order of the ship.

Giving orders in an emergency situation requires instant obedience. This can be enhanced by the respect the giver is held in by those receiving the order. Too often, a lack of respect for the authority of the command giver is translated into distrust in the correctness of the order. If a falter in the chain of command starts so close to the top, what will it be like further down the line? This therefore implies that those giving orders should be confident in their leadership and this in turn reflects in the respect of those under them.

In the armed forces, such definitions are considered to be the normal requisite for an officer. The selection process is begun by identifying those with officer-like qualities that can be enhanced by further training. As an officer progresses from the training phase to the career phase the training is further enhanced by increasing responsibility over others and a rigid selection process which in the later stages ensures promotion is by ability rather than seniority.

THE CHAIN OF COMMAND

The chain of command is dependent on the discipline on board a ship. Those further down the chain are far less likely to question an order than those near the top. Any chain of command and those officers responsible for formulating it must be fully supported and promulgated by the Company.

The old P&O regulations for officers clearly define the Deck department as the executive officers of the ships, and their position as being overall command of the ship. There is in general a better understanding of this today on cargo ships than on cruise ships, where in many cases the situation regarding discipline and overriding authority can only be described as precarious. This is not surprising. Rather than ships with the Captain, officers and crew all operating together under a unified command system, too often the ships are divided between the 'hotel' staff and the 'operational' staff, with a gulf in between that is seemingly ignored.

This problem is enhanced by the fact that on one side we have the seamen of the ship and on the other crew often with little concept of the unique shipboard requirement for a disciplined management owing to the inherent danger of the environment the ship operates in.

This is not helped by the new type of ship management ashore with little understanding of leadership and discipline, and which promotes officers more for their political ability than their leadership qualities.

This is not to say that the modern deck officers of today are fully trained in leadership and command. We rely on the shore colleges to do this, yet they hardly have time enough to cover the subjects required by examination standards. Even during training on board, the subject is rarely broached, yet some day the safety of the ship and those on board will depend on these cadets.

While all else is a subject of change and debate, in the context

of command of a ship, the ability to maintain discipline and display leadership never changes. The strange lack of interest in these concepts in the Merchant Navy and those who influence it is incomprehensible.

Management ashore is also responsible. If there is no stated chain of command policy combined with a commitment of complete support for those officers enforcing their rightful authority and discipline in the interests of the ship and those on board, then why have a command structure at all? The answer to that is quite simple. It is not the chef or the hotel manager who faces the board of inquiry; rather it is the Captain and the executive officers.

Too often, as a profession, we tend to avoid some of the more unpleasant truths about professional failings and possibly difficult and controversial subjects I have raised here. The Merchant Navy has for too long employed and promoted their officers based on the possession of a certificate of professional ability, rather than joining this with any consideration of the qualities of leadership. This has occasionally resulted in unsuitable officers commanding ships and those on them.

It would seem that to alleviate this situation, companies rely on attempting to control their ships from the office ashore, aided by the improvement in communications. This is dangerous as it reduces the role of the Captain to that of a messenger. It also causes a loss of respect for the rank and role of the Captain and this is reflected in the attitude of those on board who he is appointed to command.

The final danger is that in certain cases, those ashore would rather appoint officers to command their ships who are subservient to such control, rather than those chosen for their leadership and command ability, who must be able to place their professional duties, together with the safety of the ship and those on board, ahead of company, political and business considerations.

Captain Michael Lloyd MNM FNI



The Nautical Institute LinkedIn forum



JOIN THE CONVERSATION

The Nautical Institute has a lively discussion group on LinkedIn
<http://www.linkedin.com/groups/Nautical-Institute-1107227>

THIS MONTH, WE DISCUSS MENTAL HEALTH ISSUES FOR SHIPS' CREWS

Harry Gale FNI wrote:

The Nautical Institute is aware that there are increasing incidents of the 'lack of wellbeing' or mental health issues for ship's crews. We are unsure if this is due to an increased awareness of the issues, or if life is getting more stressful. And if life is getting more stressful, is this

particular to the ship's environment, or is it reflective of an increased level of stress, sometimes blamed on technology and social media, in everyday life ashore?

We would like to know how are you promoting "wellness" in your organisation? Is there a problem? What tools or resources are you using?

THE INSTITUTE'S LINKEDIN COMMUNITY RESPONDED:

→ It is a very serious issue on board if not properly taken care of.

→ More dramatic in my opinion is the still existing, though luckily reducing, opinion of many seafarers, that we are such tough guys, that things like mental problems, trauma care etc. should not be an issue for us. We can learn a lot from aviation, where the concept of CISM (Critical Incident Stress Management) is well known and equally well used. It must be understood that seafarers are 'just' human beings, which means that we are as vulnerable physiologically and psychologically as any other human being. It must likewise be understood, that it does not help if there are new rules about for example adequate rest, such as the MANILA amendment, with no guide to implementation. It must be made clear to the companies that this requires proper planning and possibly an increased level of manning. Fatigue and stress are big (the biggest?) factors contributing to mental health issues. As such, these need to be dealt with adequately.

→ I am very happy that you are paying attention to such a serious problem which is causing a lot of problems while on board.

→ It is gratifying to see that shipping companies, regulators and seafarers themselves are starting to wake up to mental health issues and take positive steps in dealing with these. As mentioned in the Feb 2018 issue of *Seaways*, RightShip has introduced a health and wellness checklist as part of its dry bulk inspection regime.

→ On our managed two ships, we have 52 cadets. I recognise that the stress level is getting high even among cadets. Use of cigarettes is increasing. Though alcohol is forbidden, people used to purchase it from outside, which is very difficult to control.

→ There is increasing stress, and lack of attention and understanding from management. The reason? 1. Lack of people ashore in crew management who 'know' and have been there for sufficient time in order to be able to foresee, and understand 2. Shipboard management that lacks skills in HR Management.

→ In Panama there is a proposed project to give internet access to seafarers in the anchorage area while they are waiting for the Canal Transit -- usually about two days. This is intended to improve the wellbeing of the seafarers while they are in Panama waters.

→ Social media connectivity on board is leading to unaccounted rest hour losses, which is in turn creating long term mental fatigue -- a root of lack of attention and logical thinking. It also leads to misuse of computers (copy/paste) when a tired mind tries to cope with excessive documentation and checklists.

→ Shipboard operations have become so very hectic with faster port turnaround times and excessive paperwork from all fronts. All this requires ship staff to be 'on the button' 24 hours a day. Having internet has its cons too; personal use of Wi-Fi and social media has a negative impact for on board ship staff, who are not actually sleeping during off hours. Individual responsibility for managing own time is a MUST. We need good on board training rather than audits, check lists, paper work etc, which though important needs supplementing with practicality and common sense.

→ What are the reasons for such problems?
1. Improper selection of crew in the first place. They may not be capable of duties assigned to them, leading to stress and mental issues.
2. Lack of trained and knowledgeable ship managers who understand the problems on board and do not keep on adding more weight to the ships' crews.
3. Lack of training for the seafarers. Not only senior officers but the whole crew need familiarisation with mental problems on board.
4. Reduction of manpower on board. I did try and still do try to include these issues in training sessions, no matter whether I am teaching audit process or accident investigation or even maritime English.

→ Perhaps it is high time that we included the Human Element in the curriculum for candidates and in the audit/inspection programmes of the maritime certification bodies.

→ Once an individual or collective threshold of resilience is breached, the consequences can

be far reaching. My current thesis is that mental health and navigation safety are very closely linked. Best practise guidelines exist in a generic sense at a whole ship level and in relation to individual self care. However, employers need to be aware of their duty of care too. We can say with some certainty that unintended consequences have arisen from the adoption of many well intentioned resolutions and we must tread very carefully in terms of ethics and philosophy should we choose to intervene.

→ There is not regular enough leave. Management prefer to ignore the human side of the seafarer. The side where they have a family. The side where port time has reduced. The side where communal rooms have been reduced and those that are still there are not used because of reduced crewing.

→ Both afloat staff and shore staff are responsible for this issue. Stress levels are increasing on both sides.

→ The quality of the on-board environment is exactly what this subject is all about. With little or no opportunity during a contract to have any significant rest, recreation or social intercourse, workers are on a treadmill and mental and physical stress is guaranteed. There is no quick fix. The sooner ocean going ships become fully autonomous the better.

→ As long as vessels nowadays are manned in such a way that they are almost autonomous, we will have to help our mates to develop skills which will assist them to overcome the negative effects of social isolation. Reality is very tough on board and we have to implement as compulsory development and training of skills such as awareness, mindfulness, and ability to keep an open dialogue. Crewmates should be able to talk each other.

→ Humans are social animals and we need interaction with other humans outside of the work place. Without this something has to give. Unfortunately, it is our mental health.

This report attempts to give a representative summary of the discussion -- it is not possible to include all comments. To see the discussion in full, please visit LinkedIn.

➔ Representing The Nautical Institute to the maritime industry and beyond

IMO 70th anniversary

Nautical Institute CEO John Lloyd FNI, President Duke Snider FNI (right), and previous and current Heads of Delegation John Dickinson and Ghulam Hussain joined the celebrations to mark the 70th anniversary of the signing of the treaty establishing the IMO. The ceremony was attended by Her Majesty Queen Elizabeth II, who opened IMO headquarters when it was established in 1947. She unveiled a plaque to commemorate the occasion. Her support for this occasion highlights the importance of the IMO and its location in London.



HM the Queen unveils a plaque, watched by IMO Secretary General Kitack Lim

Goodbye Captain Gale

The NI was sad to say goodbye to Capt Harry Gale FNI, who retired from NIHQ last month after 10 years as Technical Manager. From all at The NI, we wish Harry a fantastic retirement. His wealth of knowledge and joyful presence will be missed at the NI, and the Branches for whom he provided so much support over the years. Captain Ghulam Hussain, formerly the Institute's Accreditation Manager, has taken over Harry's role as Technical Manager, and also becomes Head of our IMO Delegation.



John Lloyd thanks Harry Gale



The morning after

NI staff out and about

The Nautical Institute observed the Sea Traffic Management (STM) project validation trial last month, as members of the project's policy advisory group. STM is a project that seeks to provide ships with safety and commercial information based on the ability to exchange routing information between shore stations and the ship's ECDIS. Director of Projects David Patraiko FNI attended the validation exercise at Warsash Maritime Academy, which was linked to nine other simulation centres in Europe for live real-time exercises. More details about the project will be published in *Seaways* later this year.

The Nautical Institute also attended a Lloyd's Register Foundation (LRF) workshop on how to improve safety in the fishing and ferry sectors. The NI was able to contribute its expertise in the human element and safety cultures along with the support of its global networks to assist LRF in their work. More details to follow in *Seaways*.



Wellness at Sea

Bridget Hogan represented The Nautical Institute at The Sailors' Society's Wellness at Sea conference to explore the increasing mental health issues on vessels. Participants included ship operations, welfare organisations, academia and seafarers and discussed preventive and reactive strategies. Stuart Rivers, Sailors' Society CEO told ship operators: "Not looking after your crew will hit the bottom line and you also have a duty of care to seafarers. We need to spread this message far and wide."

The CEO at Branch events

CEO John Lloyd spoke at the UAE Branch's first meeting of 2018 on 12 March. John Lloyd also attended The Nautical Institute Pakistan Branch's event on the importance of Continuing Professional Development, held at the National Centre for Maritime Policy Research at the Bahria University. The event was strongly supported with many questions and interactions with the local maritime community.



Capt John Lloyd FNI addressing delegates to the NI event in Karachi

Spreading the word

CEO John Lloyd represented The Nautical Institute and members at the International Conference on Harmonized Implementation of the Polar Code in Helsinki. Key interests included The Nautical Institute's Ice Navigator qualification and how this can help improve international harmony. The Secretary-General of IMO made the opening address and was very well received by participants from many Arctic countries.



John Lloyd pictured presenting the *Alert! Compendium* to Leif-Christian Ostergard, Manager of Marketing and Sales at Aboa Mare Training and Education

Capt Nikos Aslanis AFNI presenting the *Alert! Compendium* to the owner of QMS, Mrs P Lyrantzis, in Greece.



Congratulations to member Capt Nish Wijayakulathilaka AFNI, on achieving his MBA from the University of Sri Lanka/ University of Colombo.

Correction: Last month the caption on the bottom right hand photograph in this section showed the Kongsberg Mumbai Office, not Kongsberg Manila.

New members

The Nominations Committee has nominated the following for election by Council:

Associate Fellow

Agarwal, O P Mr/Director (India (West))
Alba, N Captain/Fleet Captain (Italy)
Arena, R Captain/Master (Italy)
Bales, K Captain/Assistant General Manager (Singapore)
Bhattacharya, R Captain/Master (India (NW))
Bisht, D S Captain/Marine Operations Manager (UK/London)
Capayas, L A Captain/Managing Director (Philippines)
Demydov, O Captain/Master (Ukraine)
Dring, A Captain/Master (UK/NE England)
Hoque, M A Captain/Marine Superintendent (Bangladesh (Chittagong))
Jayalath, J V U K Captain/Master (Sri Lanka)
Jayant, N Mr/Operations Manager (UK/Central Scotland)
MacLennan, A H Mr/Consultant (South Africa)
McElhose, S S Mr/Manager (US Pacific Coast (N))

Petruzzelli, G Mr/Director (Netherlands)
Pukin, P Captain/Master/SDPO (Poland)
Rawat, J Captain/DPA/CSO (India (West))
Reid, J D Mr/Master (UK/N of Scotland)
Samarakkody, D K C Captain/Master (Sri Lanka)
Simion, M Captain/Marine Superintendent (Romania)
Singh, I J Captain/CEO (India (North))
Sinisi, P Captain/Fleet Captain (Italy)
Stude, M Captain/Master (Finland)
Zuzelski, T Mr/Master (Poland)

Upgrade to Associate Fellow

Chalmers, D Captain/Master (Thailand)
Mamode, A R Captain/HSSEQ -Superintendent (Singapore)
Noon, P Mr/OIM/Master/DPO (UK/NE England)
Panie, K M Captain/Master (Indonesia)
Sundberg, F Captain/Master (SweDen)
Tun, A K Captain/Master (Myanmar)

Member

Appleton, D M Mr/Professional & Technical Officer (UK/London)
Cherry, M D A Mr/Maritime Programme Manager (British Virgin Islands)
Drakogiannopoulos, D Captain/MSQ Marine Superintendent (China PR (Mainland))
Ellul, N M Lt/Senior Marine Controller (AUS - VIC)
Ērihs, M Mr/Chief Mate (Latvia)
Fuller, K C Miss/Deck Officer (AUS - QLD)
Kvalavag, S A Captain/Master (Norway)
Mes, M Mrs/Lecturer Nautical Studies (Netherlands)
Ogu, G E Mr/2nd Officer (Nigeria)
Onakoya, R Mr/Chief Officer (UK/London)
Paynter, M P Captain/Master/DPO (India (South West))
Power, B Lt Cdr/Commanding Officer (UK/SW England)
Quiroz Blondet, V A Mr/Chief Officer (Peru)
Ravi Kiran, Y Mr/Chief Officer (India (South))

Rosa Ribas Da Cunha, T Miss/2nd Officer (Brazil)
Rugg, A B W Lt/2nd Officer (UK/SE England)
Sharma, A Mr/3rd Officer (Norway)
Suthakaran, C Captain/Director (Singapore)
Taylor, A Mr/Second Officer (AUS - WA)
Tenishev, S Mr/Research, Survey, Salvage (Russia)
Vanderplasschen, D Captain/Pilot (Belgium)

Upgrade to Member

Filippakis, P A Mr/2nd Officer (GRC/Hellenic)

Associate Member

Gurov, A Mr/Deck Cadet (Uruguay)

*Signifies members who have rejoined

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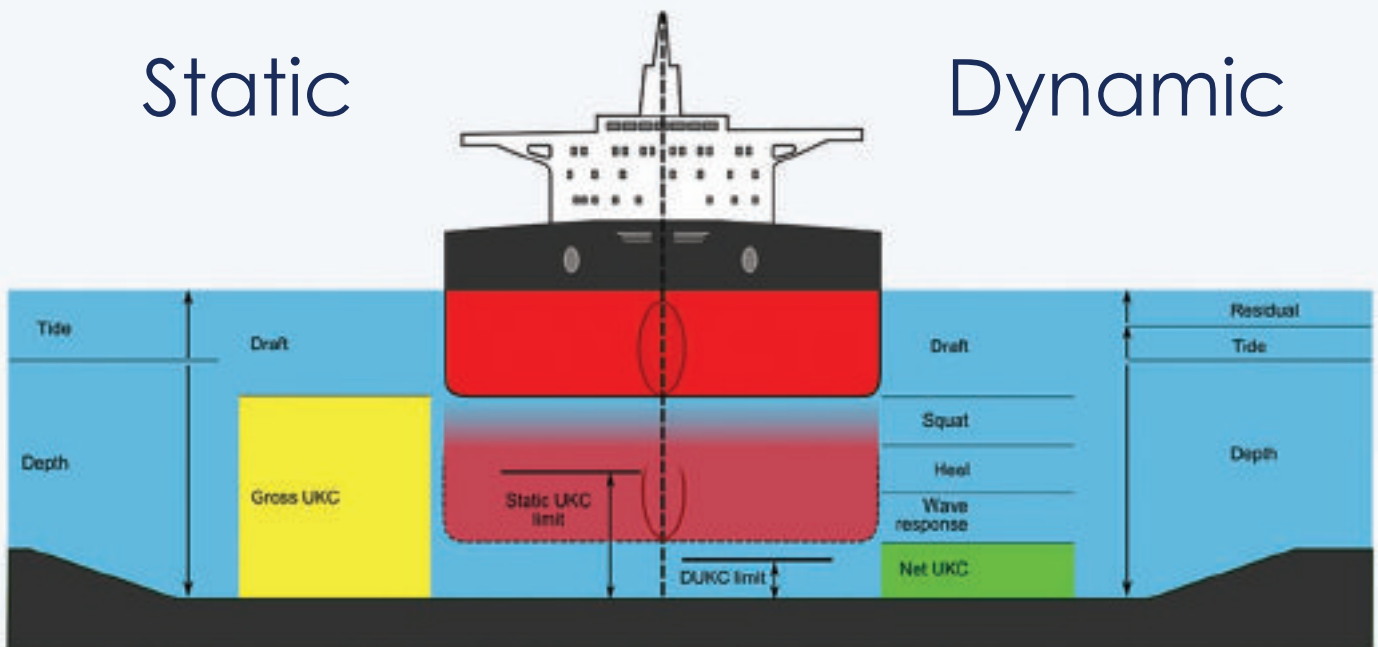
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