



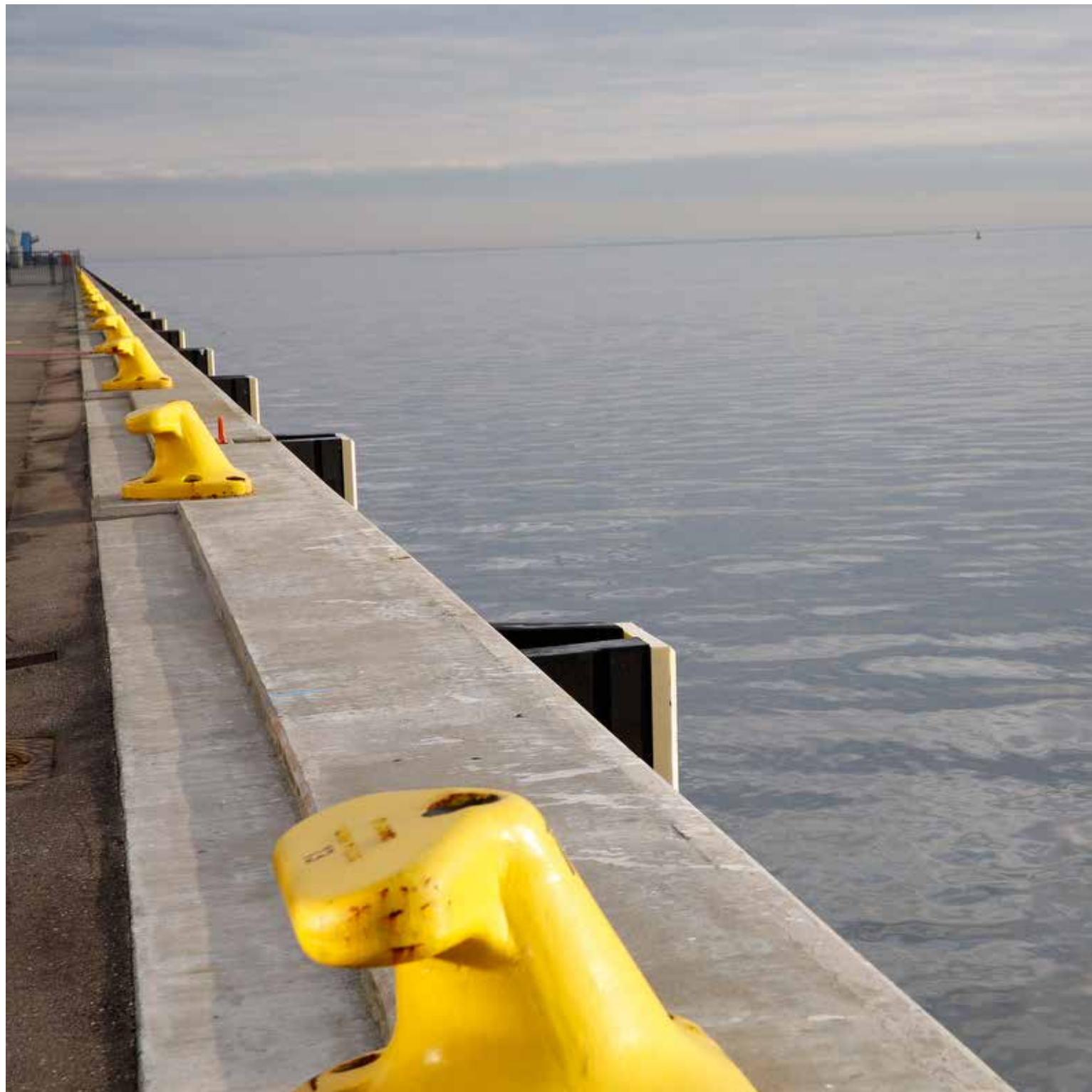
Danish Maritime Days

Unleashing the potential
of the global maritime industry



Snapshots

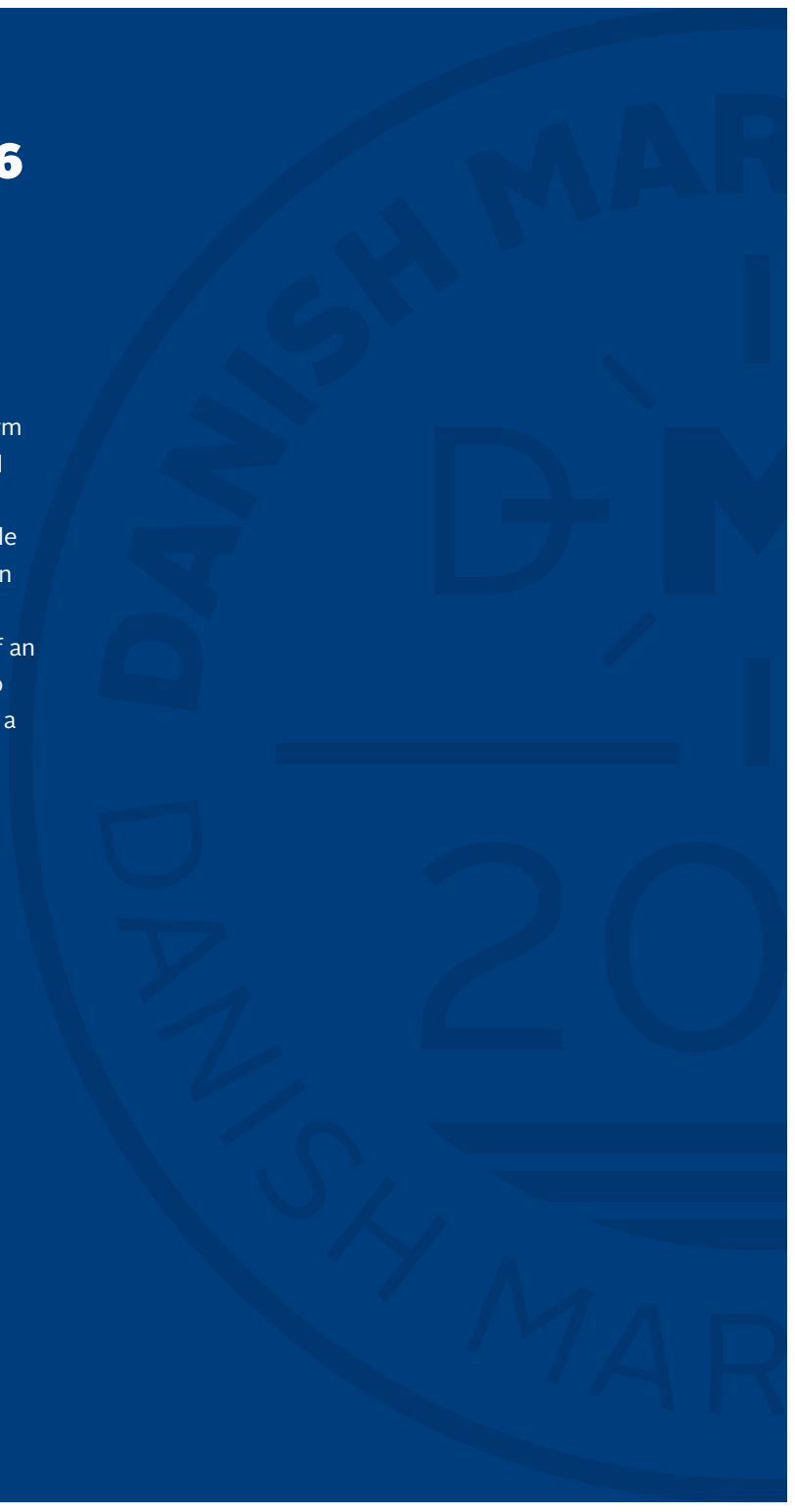
from Danish Maritime Days 2016



Snapshots from Danish Maritime Days 2016

From 24-28 October 2016 the Danish Maritime Days platform hosted around 50 independent events which were attended by approximately 7000 people. The events were structured thematically and participants had an opportunity to assemble a weekly program from among the themes: Innovation, Open Markets, Sustainability and Safety and Security.

The events were all organised independently on the basis of an open invitation and with the goal of finding new solutions to the most important challenges facing the industry. Here are a few snapshots from the week.



Welcoming Key Stakeholders from around the World

The official Danish Maritime Days Welcome Reception gathered around 500 key stakeholders from around the world in a celebration of the global maritime industry at Hotel d'Angleterre in the heart of Copenhagen. The Reception brought together representatives from all events on the Danish Maritime Days platform and all parts of the global maritime industry. In this way it was a unique opportunity to catch up with colleagues from around the world and to make new connections.

Organizer: Danish Maritime Days





Will the Maritime Industry Bend the Emissions Curve in Time – and how Radical are the Measures Needed?

In December 2015, shipping was excluded from the international climate agreement intended to limit global temperature rise to well below two degrees Celsius. As a result, shipping's emissions are still due to increase significantly over the next decade while the rest of the world takes steps to reduce its emissions. With this event, the organizers invited participants to engage in a discussion of what the industry needs to do to move towards a future that matches the ambitions of the UNFCCC Paris Agreement and effectively bend the emissions curve.

After setting the visionary scene for the maritime industry's future, a panel and the audience discussed multi-tech energy efficiency, financial incentive schemes, innovation and new technology, but also the industry's ability to innovate and use radical innovation as a means to bend the emissions curve. It was clear that major steps are needed to be taken if the industry is to truly decarbonize. Smart policy, thought leadership and certainty for investors are essential to ensuring such decarbonization. Policy makers need to take a visionary, long-term approach to create a stable and certain environment in which financiers can make sustainable decisions. Through creating this environment, technology and process innovators will be able to think creatively about how to reduce energy inefficiencies and our industry's dependence on carbon-intensive fuels.

Organizers: Carbon War Room, Green Ship of the Future, Blue INNOship, Danish Shipowners' Association and Danish Maritime



Blockchain as a Corruption Disrupter and Trade Enabler

Blockchain is on many people's mind but what is it? And how can it impact the maritime industry? This event was designed to contribute to the ongoing discussion about the role that blockchain technology can play in enabling global trade while addressing industry-specific sustainability issues such as corruption, fraud, carbon data and ship recycling.

Through presentations and conversations, the event aimed to explore the potential of blockchain technology by highlighting the mega trends and underlying principles of decentralized trust, transparency and new collaborative models, current use cases in other industries and their respective impact, and finally discussing the opportunity space for the maritime industry.

Participating professionals from maritime, consulting, academia, public and blockchain organizations identified a number of challenges and next steps. This included the need for a broader and better technical understanding of blockchain and where to use it, risk management of open and transparent information and finding and encouraging first movers within the maritime industry to share their experiences with blockchain.

Organizers: Blockchain Labs for Open Collaboration, Business for Social Responsibility, DareDisrupt and The Shared Value Company



How does Maritime Security Information add Value to the Shipping Community?

More than 90 experts from the maritime sector, governments, international organizations, navies, NGOs and academia participated in a conference about how maritime security information can add value to the shipping community. Through presentations, panel discussions, questions and participant contributions, the conference aimed to identify the preconditions for obtaining a valid level of security information, the challenges of getting quality threat data and how stakeholders from the maritime community can cooperate to improve maritime security awareness.

A main theme of the seminar was to explore how maritime stakeholders obtain, share, and use maritime security information to prevent or mitigate security threats. Both presenters and participants emphasized that accurate and timely threat information is important for operational decision making and risk mitigation. Furthermore, it was discussed that information sharing is key to ensuring accurate awareness of the extent of maritime security challenges. The participants expressed an urgent need to ensure that all stakeholders cooperate to strengthen trust and facilitate exchange of information between relevant government agencies and private organizations active on these issues.

Organizers: Danish Shipowners' Association, Oceans Beyond Piracy and Risk Intelligence



Looking at the Key Drivers Emerging in and from the Fourth Industrial Revolution

In 2016, 'The Fourth Industrial Revolution' is a catchphrase making the rounds in the global maritime industry. This industry faces a market with changing dynamics, where emerging technologies provide endless possibilities alongside unprecedented processing power.

The 2016 Danish Maritime Technology Conference looked at the key drivers emerging in and from this Fourth Industrial Revolution – the technologies, products and services driving this market change. Members of Danish Maritime are global market leaders in the maritime industry, and together with participating specialists they discussed their core challenges and presented their strategies to a game changing market.

The conference had more than 250 participants from all over the world and weaved together technical experts, executives and media from across the international maritime industry to explore how far we have come and to speculate on what lies ahead.

The conference was organized into four major themes: digitization, energy efficiency, ship design, and policy. The first session showcased the digital-human interfaces that provide advanced situational awareness tools for the bridge and the augmented realities being generated that allow for the re-prioritization of decision imperatives. The session included presentations on methods for predictive analytics that are delivering piston failure alerts 10 days before they happen; why \$10 multifunctional sensors that provide virtually limitless data and information are paradoxically worthless and game-changing; and how lifecycle digitization can change information flows and become sources of disruptive business models.



In the second energy efficiency session, the results of a benchmarking report and policy recommendations were presented to the conference delegates. This session also included presentations on how engines are becoming smaller, lighter, more digital, flexible, efficient, environmentally friendly, and powerful; the so-called anarchy in data collection and how standardized file formats can deliver a future that can free users from vendor lock-in; a reminder of the immense knowledge already implemented, and that a simple awareness of oil quality can make or break an engine and the bottom line. On the second day of the conference, the audience was taken into the future and encouraged to embrace change, and to keep one eye on core activities and the other on the technologies shaping that future. This was followed by presentation about 3D scanning and welding robots that are populating shipyards worldwide; multi-fuel engines designed to meet present and future demands; how the next generation of electrical systems are making their way aboard ferries; and how platform-based designs are becoming best practices. Government and policy were on the stage in the final session addressing shipping's emissions record and calling for change. This imperative was then addressed in a panel discussion that highlighted the potential of collaborative approaches between industry and regulators to deliver positive outcomes. At the conference, the Danish Ship of the Year Award was announced. The winner was Hvide Sande Shipyard's Arctic icebreaker, OV Bøkfjord.

Organizers: Danish Maritime and members of Danish Maritime



Danish Maritime Days
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A Time for Transformation

For the third consecutive year the Danish Maritime Forum convened leaders from across the global maritime industry in Copenhagen. Together they worked on unleashing the potential of the global maritime industry to increase long term economic development and human wellbeing.

This year's Forum was clearly marked by the fundamental shifts in the global economy, in international trade and in technology that the global maritime industry is facing, shedding light on an industry outlook that looks more uncertain than ever. The highly collaborative format of the Danish Maritime Forum was designed to inspire and engage participants in a dialogue about the risks and opportunities that this transformation presents for the global maritime industry.

A number of high-level panel discussions and keynote presentations featuring key business leaders, top government officials and prominent experts set the context and brought attention to the most significant challenges and opportunities that lie ahead not only for the industry, but for the wider economy as well. In four Think Tanks participants explored new research, technologies, ideas and concepts and considered how they will impact the global maritime industry. Based on these discussions, participants defined the 14 burning issues to tackle in interactive working groups, the outcomes which are summarized in the report: **The New Normal**.

From the discussions at this year's Danish Maritime Forum, as well as those of the previous two years, the following cross-cutting takeaways have emerged:

- The ongoing crisis - coupled with the forces of the disruption that the maritime industry is facing - is an **opportunity for transformation**. The industry should embrace emerging technologies as drivers of innovation. They are an opportunity to disrupt the existing structures and business models and to increase productivity, efficiency and value throughout global supply chains.





- The maritime industry can **learn from other industries**. For aviation and the automotive industry a deep crisis led to collaborations that allowed companies in these industries to collectively emerge stronger. The format of the Danish Maritime Forum is a first step towards cross-industry collaboration, where decision-makers from the entire maritime value chain work together, breaking down silos and allowing for a candid and creative exchange of ideas and possible ways forward.
- The **industry, regulators and other key stakeholders must work together**, whether it is to bring forward workable solutions to protecting the environment or to ensure that free trade works as a positive force for everyone.
- To fully unleash the potential of the maritime industry, it must be **proactive, agile, innovative** and transparent on how the industry contributes to the common goal – growth and prosperity for all. Navigating in the new normal of today demands an open and constructive dialogue across industry, with regulators and other important stakeholders.
- As such the discussions at the Danish Maritime Forum 2016 were consistent with the two previous years, where participants pointed out a need to **raise public awareness** of the importance and value of shipping and that there is still great potential to **increase the role and positive impact of the global maritime industry**.

The Danish Maritime Forum is an initiative of Danish Maritime Days, a not-for-profit public-private partnership between the Danish Maritime Authority, the Danish Shipowners' Association and Danish Maritime.



Danish Maritime Forum

Gala Evening





Danish Maritime Executive Closing Dinner

As the perfect end to the Danish Maritime Technology Conference 2016, Danish Maritime hosted an Executive Closing Dinner for 55 distinguished guests at the Tower of Christiansborg.

During the evening guests had the opportunity to see the view from the tallest tower in Copenhagen, which only two years ago was made open to the public. The tower is the property of the Danish Parliament, and it was the parliament members who took the initiative to grant access to the general public – to the pleasure of all those who live in or are visiting Copenhagen.

The evening also included a moving musical feature as guests were entertained with three beautiful arias.

Organizers: Danish Maritime and members of Danish Maritime



Challenges and Opportunities of Green Maritime Logistics

This workshop gave an overview of a broad set of green maritime logistics issues and approaches that have been developed to address these problems. The traditional analysis of maritime logistics is viewed through a prism of cost-benefit and other optimization criteria. Green maritime logistics brings the environmental dimension into the problem by analysing various trade-offs and exploring 'win-win' solutions. This workshop presented talks by a mix of academic and industry speakers on the issues that are at stake in green maritime logistics and on how one can balance the economic and environmental performance of the maritime supply chain. This event coincided with the 70th session of the Marine Environment Protection Committee (MEPC 70) of the International Maritime Organization (IMO). MEPC 70 had a remarkably green agenda. Among other decisions, the enforcement of the global cap of 0.5% sulphur in marine fuels in year 2020 was confirmed. By contrast, progress on greenhouse gas emissions and climate change was slow, with a plan to collect data on ship fuel consumption until 2023.

A key message was that the industry as well as politicians and policy makers dealing with the green agenda need tools that take a holistic approach and can assist them in the evaluation of policy alternatives.

Organiser: Technical University of Denmark, Department of Transport



Fair Welcomed Visitors from 71 Different Countries

The third edition of Danish Maritime Fair welcomed 4.600 visitors and decision makers from 71 different countries and showed that there is a base for an international maritime exhibition on Danish ground. The fair hosted 4 national pavilions from Finland, Germany, The Netherlands and Sweden. It also included a Blue Career Lounge with 10 educational institutions, a start-up & SMB lounge with 5 companies and a Shipowners' Lounge organized by the Danish Shipowners' Association and a number of the largest Danish shipowning companies. Overall, Danish Maritime Fair had 232 exhibiting companies spread across 133 stands and pavilions and roughly 2.000 m². The total venue of 10.500 m² also included meeting rooms and conference halls which hosted 45 independent workshops, conferences and social events.

Organiser: Maritime Denmark



What does Performance need Leadership for?

The purpose of this workshop was to give the participants an insight in the hands-on experience gained by Green-Jakobsen about how leadership can be developed and the understanding of how leadership can help shipping companies develop high performing crews.

Three hypotheses about leadership were presented:

- You are either a born leader or no leader.
- Through the years the authoritarian leadership approach has proven to be the most effective way of leading others on board.
- Management-level personnel both onshore and on board are committed to safety and good at defining and implementing safety improvement processes.

Each of these hypotheses were assessed by participants and deemed to be either true, partly true, or false with a discussion to follow. Following this discussion, Green-Jakobsen presented a range of tools and theories and real-life experience explaining the ways they work with the development of leadership – both on an organizational as well as on an individual level. Some of these subjects were: the leaders' self-awareness and role awareness; direct and indirect performance enablers; safety leadership; leadership and communication tools; overrating self-evaluation; working with strategic performance goals, and designing and implementing the performance evaluation process and system.

A case presentation illustrated how a performance appraisal system for a crew was developed. It was important to achieve a system that would provide a solid base for ensuring a fair and realistic appraisal of the crew, enabling the company to assess what measures should be taken (promotion, training, relocation, rewarding, etc.) in order to

improve overall company performance. The case described the significance of the so-called bell-curve, an instrument to ensure that the assessments are realistic, and also the rating system based on description of performance levels instead of a number system was explained. Having run the system for almost a year, a client was also able to give a short evaluation of the system which clearly shows that they are on the right track and that the system is useful in their organization.

Engaged and fruitful discussions took place throughout the workshop with participants having a good opportunity to network and put forward questions to both colleagues and experts.

Organizer: Green-Jakobsen A/S



Ship Inspection in the Future – Safety or Certification

This workshop about ship inspection in the future aimed to create awareness and debate whether certification and surveying actually increases safety on board ships.

The Danish Maritime Authority has developed a new survey on board Danish flagged passenger ships. During a survey, it must be confirmed that the crew members can prevent and manage accidents and secure that all persons on board a ship will return home safely. The risk-based survey is conducted by random spot-check of the technical equipment and through dialogue with crewmembers on both safety and the working environment.

Following a presentation of the approach, a panel debated whether certification is equal with safety and the development of the International Safety Management. The debate illustrated that there are different views on what a certificate stands for and the difference in division of responsibilities whether you are a Shipping Company, Authority, Classification Agency etc.

Organizer: The Danish Maritime Authority



Debating Product Liability within Shipping and Offshore

The law firm of Windahl Sandroos & Co. held a seminar that addressed product liability issues within maritime transport and the offshore sector. The presentations were highly interactive with cases and examples to illustrate the risks in product liability and possible solutions within maritime law and oil and gas law.

Speakers were industry leaders from shipping, bunkering and the offshore sector, as well as legal experts, with a focus on practical examples and the risks that are posed by product liability laws. Some of the most notable court cases in this area were also reviewed.

There was a lively debate during each of the presentations, where the attendants contributed with their experiences within production liability. The event was an excellent networking event in the center of Copenhagen, for managers and professionals in shipping, offshore and insurance.

Following the presentations, speakers and guests attended a networking reception.

Organizer: Windahl Sandroos & Co. law firm



Resolution of Maritime Disputes in Denmark

A substantial part of the world's maritime industry is based in the Nordic region and arbitration and mediation are well known means of dispute resolution within the industry. However, most maritime disputes are handled in London rather than in Denmark or any of the other Nordic countries.

To present the opportunities available in Denmark this event started with a presentation of the Danish Institute of Arbitration, DIA. DIA is a non-profit, independent institution that has been handling cases for more than 30 years. DIA offers different solutions such as arbitration, simplified arbitration, mediation and expert nomination. In 2015, DIA handled approximatively 120 cases. One third of DIA's case load is international, i.e. at least one party is non-Danish. The case load concerns many different industries and all aspects of commercial activity, including the maritime industry.

This was followed by a presentation of the challenges of competing against historical sites such as London. The biggest challenges presented were that most of the standard contracts used in the maritime industry propose London by default as the site of arbitration and that London arbitrators and judges are very experienced and specialized in the maritime field. The event then featured a presentation of initiatives that support the development of a regional arbitration alternative. The maritime arbitral community in the Nordic region has been in discussions to create a Nordic Maritime Arbitration Institute to increase the visibility of Nordic maritime arbitrators and to present an alternative to London. Having this specialized institute administered by an already well functioning arbitral

institute like DIA would ensure that the administration of the cases would be optimal already from the start when a Nordic institution is established.

The subsequent debate revealed that the costs of resolution of disputes and the duration of the proceedings, which are the two points most criticized in arbitration, would considerably decrease if handled regionally. However, without an established Nordic Institute and the support of all the actors involved in the industry, including the shipbrokers that are very often involved in drafting and closing the contracts in question, including the dispute resolution clause, it might be difficult to tip the balance in favour of regional institutions.

It was suggested that the discussions could continue during the International Congress of Maritime Arbitrators, ICMA from 25-29 September 2017, since DIA has been chosen to host ICMA in Copenhagen next year.

Organizer: Danish Institute of Arbitration



Building Stronger Ties between Danish and Polish Maritime Industries

Denmark and Poland have established strong business relations in their respective maritime industries. Earlier this year, the International Maritime Congress was held in Szczecin with Danish representation, and during Danish Maritime Days a Polish delegation and several presenters and directors joined forces at the Danish-Polish Maritime Networking Seminar.

From Poland, speeches were delivered by representatives from the Ministry of Maritime Economy and Inland Navigation; the Polish Embassy in Denmark; Remontowa, the largest Yard Group in Poland; the Polish Maritime Industries Forum; the Warsaw Exhibition Board, and also from the Szczecin & Swinoujscie Seaports Authority. From Denmark, speeches were delivered by the Director General of the Danish Maritime Authority and Danish Maritime.

Participants from both industry and trade organizations used the seminar to build stronger ties. The seminar brought relevant industry and business people together and proved fruitful for both Danish and Polish participants. It has already been decided to further build on the relationship through the common preparations for the Baltexpo 2017 in Gdansk, Poland.

Organizers: Danish Maritime and Polish Maritime Industries



Highlighting the Value of Interaction between Students and the Maritime Industry

Throughout October, 120 marine engineering students from the Copenhagen School of Marine Engineering participated in the Blue Innovation Challenge 2016. The course included a start-up day as well as a number of competition days in connection with Danish Maritime Days.

The competition days focused on the concept of “innovation by doing” and the interaction between students and the industry played a central role. Furthermore, to create actual value for both the participating companies and the students the process was based on innovation and entrepreneurship in the “real world”, hence innovation challenges were submitted by industry players representing shipyards, detection equipment and inspection drones.

The objectives of the Blue Innovation Challenge were to highlight:

- The value of utilizing creative tools and innovative methods;
- The value of utilizing entrepreneurial tools and methods;
- The value of interaction between students and the maritime industry.

All students went through the phases of research, idea generation, prototype creation and film clips - and for the finalist, pitching of the idea in front of a panel of judges. All solutions reflected responses to the challenges given by the companies and illustrated a process from blank canvas to mock-up prototype and presentation in just a couple of days.

Organizer: Copenhagen School of Marine Engineering and Technology Management



Approaching the Workforce of the Future

From 10-14 October the Danish Metalworkers' Union, Danish Maritime, World Careers, Danish Engineers' Association and the Maritime Centre for Excellence in Operations of Denmark (MARCOD), together with several local co-organizers hosted the event Workforce of the Future as part of Danish Maritime Days. This annual event targets pupils from 8th grade and focuses on the education and job opportunities which the maritime industry can offer the workforce of the future.

All together 46 maritime companies throughout Denmark invited approximately 1000 pupils to participate. During the visits, the pupils had the opportunity to see the day-to-day operations in a maritime company and the opportunity to meet and exchange experiences with the apprentices.

Within most locations, the morning program involved company visits whereas the afternoon programs were more dynamic and featured various runs, introductions to educational opportunities, demonstration of a ship simulator and boat excursions. The culmination of the visits was on 26-27 October at Copenhagen Skills, featuring an exhibition stand under the name of "The Blue Denmark". The exhibition stand was occupied by students and teachers from various relevant technical educations, and featured activities such as construction of a small wooden boat, sewing sails and contests with knots and wooden structures. The stand was very well attended and the whole Copenhagen Skills event had about 33,000 visitors during the two days.



Organizers: Danish Metalworkers' Union, Danish Maritime, World Careers, Danish Engineers' Association and in Northern Jutland MARCOD



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A Celebration of the Blue SDU and the Blue SDU Student Think Tank

Blue SDU, an interdisciplinary research group at the University of Southern Denmark, hosted a reception to celebrate Blue SDU, the opening of the Blue SDU Student Think Tank and to award prizes to the winning teams of the Think Tank Challenge 2016. The event aimed to create greater awareness of the new interdisciplinary research group and to bring together students, faculty and other stakeholders to network and develop creative solutions to current challenges facing the marine and maritime environments.

The Blue SDU network was launched in 2014 to enhance collaboration amongst the interdisciplinary faculty working within the marine and maritime field and to create a focused portal to the marine and maritime research at SDU. Blue SDU has already resulted in collaborative research at the faculty level, with a variety of research covering topics such as the Arctic, ballast water and piracy.

The Think Tank, inaugurated in October 2016, aims to bring this collaboration directly to both students and industry players. The 2016 challenge asked participants to meet a timely and complex challenge regarding the adoption of new technology and user integration, using interactive user manuals as a format. Different groups covered the technology platform, user experience, safety and operation plus maintenance and operations. The groups presented their findings on these topics in written reports and to an audience at the Speaker's Corner stage at the Danish Maritime Fair.

A general concern put forward by all teams was that based on research, interactive user manuals may not have sufficient

value added to justify costs. As a result, their investigations focused on the question 'Where could value added come from?' This question generated a number of innovative and creative ideas such as:

- Creation of an interactive maintenance web forum;
- Bio-monitoring integrated into ship monitoring;
- Promoting feasibility for "Big data" feedback to owner/users, firms, and industry;
- Personalization of manual's logs and tasks.

All solutions can be downloaded from www.sdu.dk/bluesdu. The participants of the 2016 challenge have now become the first alumni/ae and permanent members of the Think Tank. The Blue SDU looks forward to working together with them and the industry to design and initiate future activities of the Think Tank – including the next challenge – and to grow a network of talented, interdisciplinary students, faculty and alums in the maritime industry.

Organizer: Blue SDU, an interdisciplinary group of faculty at the University of Southern Denmark



The Ultimate Cocktail Party

For the third successive year, Bech-Bruun, Kromann Reumert, Hafnia Law, CMI, Gorrissen Federspiel and Skuld arranged a cocktail party during Danish Maritime Days. This has proven to be an excellent way of enhancing networking after a day of meetings, seminars, attending the Fair and the thirsty work of general conference participation. This year about 300 participants from the international maritime industry including shipowners, operators, insurance brokers, lawyers and government officials joined the cocktail party. Together they experienced an evening of excellent refreshments, music and dialogue with new connections and old acquaintances.

Organizers: Bech-Bruun, Kromann Reumert, Hafnia Law, CMI, Gorrissen Federspiel and Skuld



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Danish Maritime Days is a non-profit public-private partnership between the Danish Maritime Authority, the Danish Shipowners' Association and Danish Maritime. Our mission is to unleash the potential of the global maritime industry. Danish Maritime Days provides an open platform for stakeholders in the global maritime industry, all of whom are invited to plan relevant events as part of Danish Maritime Days.

Danish Maritime Days is supported by the Danish Ministry of Industry, Business and Financial Affairs, the A.P. Møller Relief Foundation, the Danish Maritime Fund, D/S Orients Fond // D/S NORDEN, the Hempel Foundation, the Lauritzen Foundation and the Torm Foundation.

The Danish Maritime Days Welcome Reception was kindly hosted by Ericsson.

The Danish Maritime Forum Gala Dinner was kindly hosted by the Maersk Group.

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