THE REPORT

MARCH 2018
ISSUE 83

The Magazine of the International Institute of Marine Surveying

IMO speaks exclusively to The Report as it turns 70

DIESEL BUG: WHAT YOU NEED TO KNOW

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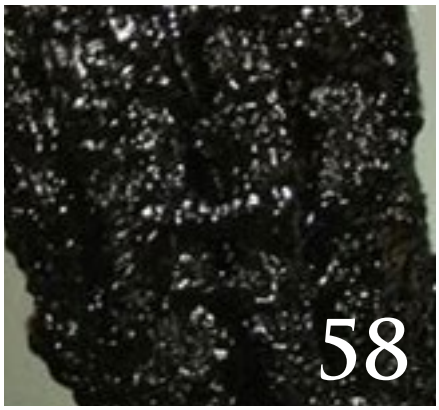

Editor's Letter

Dear IIMS Member

On an almost daily basis over the first few weeks of 2018, I have been shocked at the maritime news stories flowing in describing loss of life in yet another incident or accident. I am reminded of the essential role that marine surveyors and others play in preserving life at seas - yet the loss of life remains stubbornly high.

Welcome to the first edition of the Report Magazine of 2018. Milestones come and go, but later this month, the International Maritime Organization (IMO), the global standard-setting authority for the safety, security and environmental performance of international shipping, is set to celebrate its 70th anniversary. That is some accomplishment indeed. I was delighted, therefore, that IMO chose to speak exclusively to The Report Magazine to mark this auspicious occasion in a special interview (turn to page 30).

This issue contains more than just a nod and a glance towards the new technologies and digital processes that are currently engulfing the marine sector. Digital certification, it seems, has crept up on us and is now here as DNV GL explain in their article on page 54 with the announcement of the end of paper certification. What does this mean in reality? This article will give you the answers.

Continuing in a similar vein, I am also grateful to DNV GL for granting permission to reprint an article about their drone squad. This in depth account demonstrates just how common drone use is becoming and explains how they are making the best practical use of this ingenious bit of kit, replacing some of the more dangerous activities previously undertaken by a surveyor with it. Read the article starting on page 60.

Keeping abreast of new technologies has never been more challenging for a surveyor than now it seems!

It is always sad to mourn the passing of an IIMS member, but two deaths have reached me in recent month. The obituaries for Peter Green and Terry Reynolds can be read just after member news.

No apologies for me for taking a fresh look at report writing. Many surveyors continue to be tripped up not due to their lack of technical knowledge, but by poor report writing. IIMS continues to receive far too many complaints as a result of ineffective report writing. See page 41.

With no London Conference in 2018, the spotlight shifts to our IIMS gathering in Sydney, Australia from 31 July to 3 August. The first two days are dedicated to the eCMID accreditation scheme and the other two specifically aimed at IIMS members. Do turn out to support your Conference and Workshop. More details soon.

Also with the aim of furthering the cause of the surveying profession to a wider audience, there are two exciting initiatives to report on. The first is a press release that was sent to 40 top boating and yachting magazines in mid-January, some of which have already published. The release speaks about the worth of a marine surveyor and the fact that you are a professional doing a professional's job. The release, which caused a positive stir, is published in full in this edition. And I would like to introduce you to the Marine Surveying International Fest 2018 scheduled to take place on 12 through into 13 September. This online extravaganza will present one new presenter and topic each hour on the hour – twenty four in total for one entry fee. Read about it in Members' News.

Survey well.

Mike

Mike Schwarz
Chief Executive Officer
International Institute of Marine Surveying

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The President's Column

Dear Member

I suppose all Presidents wake up one day and realise that their tenure is almost at an end.

It's been 18 months since I accepted the President's chain in London, and a lot of water has passed under the bridge since then, personally and professionally. For me the period has been marked by my family and me moving States (to paradise - Tasmania), founding a rapidly growing new survey company and assuming the President's role. So all in all a pretty low-key period.

The next logical step is a stocktake and to see what's been achieved over the last 18 months. Have I done enough to further the aims of the organisation, and where to next?

With one egomaniac in a Presidential role elsewhere, I think that quota is full; so I'll start this column by unequivocally stating that personally I doubt that my contribution has been significant, but that collectively we have made massive strides in the right direction as an Institute over the past 18 months.

Most of you are operating remotely and have not held office (yet) and you probably have little understanding of the nature of the hard work and the dedication the head office team and the Directors put into your Institute. The more I've worked with them the more impressed I have been with the range of experience and surveying nous this group has, and how freely they share it for the greater good of our profession. Our CEO Mike is leading our small head office team superbly and feedback I'm getting from around the world is just how increasingly good the team is to deal with.

My view remains that our diversity is our strength. Please do put your hands up for office or committee work - no matter where you are in the world. You will easily get as much out of it as you give, and the Institute will be the stronger for it. I dial in to Board meetings after work here given the time zone difference, which seems to work well; and I'm having a glass of red wine whilst the rest are having morning tea - result!

We need to be around all perspectives - those of us in, or on, the doorstep of Asia are seeing the rapid approach of the much flagged Asian century. We need, if we are to remain relevant, to anticipate and work within this new paradigm. We need to increase our presence and influence in this important area and I cannot see any other surveyor organisation in a better position to do so.

This is certainly driving our thinking and is the reason why we are proposing re-constituting the former New Zealand and Australian Branches into a more regionally focussed entity. Those of you who can get to Sydney (2/3 August 2018) around the time of the Boat Show in August this year will have the opportunity to influence this matter, as well as attend the Southern Hemisphere conference and do your eCMID training and seminar. Keep your eye out for the marketing material which will be coming your way. We would love to see you here.

And so on to a legacy. On the back of many giants of our profession's shoulders I think we are launching into our second 25 years in excellent shape. We have a clear strategic direction and a great line up of talent ready to serve. We are a maturing profession with increasingly good 'brand' recognition. When professional organisations in the UK get to this stage they often seek a higher status which is what I think we should do. For example, a Royal Charter would set us out from the crowd and I'll be raising this item at the next Board meeting and would be a fitting recognition that we are truly the largest, most professional and prestigious marine survey professional association in the world.

Enjoy another excellent Report magazine.

Mr Adam Brancher *President*
International Institute of Marine Surveying
Email: adambrancher@kedge.com.au

IIMS Organisation & Structure

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IIMS MEMBER CARRIES OUT TONNAGE MEASUREMENT ON SEABREACHER

A senior and long standing member of IIMS got a welcome surprise recently when he was instructed to carry out a tonnage measurement on a unique craft, one of the most eyecatching vessels we have seen.

The Seabreacher X is one of the most advanced submersible watercraft built to date and looks more like a small aircraft than a boat! Seabreacher X also steps up the performance with a 260hp supercharged engine. The new patented fully vectored thrust system mimics the tail articulation of real aquatic animals like sharks and dolphins.

The Seabreacher represents a dramatic breakthrough in recreational boating. Over ten years of meticulous engineering and extensive testing have resulted in a very safe and stable watercraft that can endure the continuous punishment of the marine environment. Each Seabreacher is hand built to the individual customer's desired specifications.

Unlike conventional watercraft that only operate on a two dimensional plane, the Seabreacher operates more like an aircraft with full three axis of control – pitch, roll, and yaw. This allows the vessel to carve left and right, jump over, dive under, and cut though the waves. The latest model is even capable of 360 degree barrel rolls on the water!

All models are approved for recreational use and sale, and can be registered as a conventional inboard powerboat in most countries. Please note, the Seabreacher is not considered a submarine or jet ski.

The Seabreacher is only meant to dive just beneath the surface for brief durations. You typically do not go lower than 5-6 feet, and it will also depend on your level of experience as a pilot.

More information: **https://seabreacher.com**

AQUA NARROWBOATS SET TO MOVE AND EXPAND

Boatbuilder Aqua Narrowboats is to expand its operations into a new purpose-built factory. The company, currently based at Mercia Marina in Derbyshire, has been granted planning permission to build the 7,500sqft factory a short distance away in Foston.

The facility, which will include a 40 tonne crane and boat testing tank, will enable the business to increase production allowing two boats to be built simultaneously – both narrowboats and widebeam boats.

As part of the development a dedicated reception and showroom will also be built, providing space for boat build customers as well as customers of the Aqua Furnishings business.

"This is a fantastic opportunity for us and the whole team are keen to move in so that we can continue to be progressive and innovate the inland boating building industry," said Aqua Narrowboats MD Justin Hudson-Oldroyd.

The company is due to move into the new facility in September 2018.

BOAT SAFETY SCHEME CERTIFICATION CHARGES SET TO RISE AS PART OF NEW FOUR YEAR BUSINESS AND INVESTMENT PLAN

The Boat Safety Scheme (BSS) Management Committee has agreed a new four-year business plan to resource its work to 2022 and invest in improvements that will have an even longer-term benefit. The plan also includes the first price rise in certification charges for eight years.

BSS Examiners will pay a new price of £36 (excluding VAT) for each certification they issue to a boat, which is a £7 rise that they will likely choose to pass onto customers.

The new price will apply from 1 April 2018 and the Scheme intends holding it for at least the whole of the four-year business plan period, which is designed to coincide with the four-year lifespan of BSS Certification.

The Scheme acknowledges that times are tough and boaters face other price increases associated with their boating activity, so we will remain committed to continued effectiveness and efficiency to hold down costs while delivering more results.

Certification income represents almost 90% of the Scheme's revenue all of which is invested into the work underpinning the BSS Examination service, risk research and review and the promotion of boat safety advice.

Commenting on this news, Graham Watts, the BSS Manager said, "The Scheme's track record on keeping to a business plan and controlling costs has been good with the resultant freeze in the BSS Certifications price for the last eight years, but having considered all options, a price change now cannot be avoided.

"Predicted inflationary pressures rising over the next four years means the BSS needs to invest in its information technology and training in order to maintain the efficiency gains we have already achieved.

BOAT SAFETY SCHEME

Go Boating - Stay Safe

ADMINISTRATORS APPOINTED TO OYSTER MARINE HOLDINGS LIMITED

Administrators have been appointed to Oyster Marine Holdings Limited, the holding company of UK luxury yacht brand, Oyster Yachts.

The firm, which has its headquarters in Southampton, and also trades from Wherstead in Suffolk, has two employees, and holds the Oyster Group's interest in the intellectual property of the technical drawings and moulds used in the production of the yachts in the Oyster range.

In a statement, KPMG Restructuring said no other companies within the Oyster group form part of this particular administration.

This includes Oyster Marine, Oyster Brokerage and Oyster Palma.

Neil Gostelow, partner at KPMG and joint administrator, commented: "Late last week, the company directors confirmed that they had been unable to secure the financial support they needed to continue to trade the business. Our immediate priority will be to seek a buyer for the business and its assets and would encourage any interested parties to contact us as soon as possible."

In the notice, Oyster CEO David Tydeman told employees that the company had "been unable to secure financial support to enable it to continue to trade at this time and it is now facing entering an insolvency procedure imminently.

"After considering all possible options, the Company has concluded that there is a risk that it will be unable to continue to provide work for all of its employees at all locations and that it is likely that it will have to make all of its employees redundant," continued the notice.

"The Company has run out of cash and is unable to pay employees for work. The Company decided to close all operations (for the immediate future) to prevent or minimise all loss to employees and all other creditors".

AUXILIARY ENGINE DAMAGE IS MOSTLY CAUSED BY HUMAN ERROR SAYS SWEDISH CLUB

The majority of all auxiliary engine damage takes place immediately after maintenance work according to an investigation by The Swedish Club. A key finding in their investigation is that 55% of casualties occur within only 10% of the time between overhaul corresponding to the first 1,000 hours or so of operation after overhaul. In most cases, the damage occurs only a few hours after start up, the Club noted.

The report, Auxiliary Engine Damage, also finds that container vessels have a significantly higher claims frequency due to the larger number of installed engines on these vessels. In addition, these engines have considerable output, leading to higher repair costs compared with other vessels.

Investigation findings

- Auxiliary engine claims account for 13% of the total machinery claim costs and 16% of the volume, with an average claim cost of USD 345,000.
- The frequency for auxiliary engine claims is approximately 1.2% and has been relatively steady for the last few years.
- Container ships have a higher claim frequency and cost in relation to fleet entry.
- Approximately 50% of all auxiliary engine damage occurs immediately after maintenance work.
- Incorrect maintenance and wrongful repair are the most common causes of damage.
- Poor lubrication oil management is also a major contributing factor to auxiliary engine break downs.

Full story: **http://bit.ly/2DdOLAD**

BERTHON SET TO CELEBRATE THEIR CENTENARY IN 2018

The May family is celebrating 100 years of Berthon Boat Company and Lymington shipyard ownership. Frank Aubrey May brought Berthon from Edward Berthon in 1917. He partnered with his brother Harry, who bought the lease for the Lymington shipyard in 1918 from Courtenay & Sons, closing the Romsey premises of Berthon and moving it to Lymington.

Harry May subsequently developed a diverse business in dinghies, racing yachts, commercial work and admiralty contracts. Over 30 West Solent One Design yachts were built, including an export order of five to Yacht Club Argentino. The company's Gauntlet class was designed in 1934 and won fame after winning a race with a competitor brand. 33 models were built in total.

World War II saw the yard turned over to Admiralty work with 215 boats built, including MTBs, fast motor launches and minesweepers.

Harry's grandson, David May, took over the Lymington shipyard business in the 1950s and was an active yacht racer who built numerous winners.

Modern guise
In 1967, David May updated Lymington by dredging the shipyard foreshore and building the marina. Berthon's Lymington Marina was officially opened in 1968.

David's sons, Brian and Dominic May took over in 1990 and still own and run Berthon today.

NEW REGULATIONS FROM THE DANISH MARITIME AUTHORITY FOR OPERATING PERSONAL WATERCRAFT COME INTO FORCE

Following the launch of new regulations from the Danish Maritime Authority, effective from 1 January 2018, operators of personal watercraft must complete a theoretical as well as a practical test.

As part of the Danish Government's efforts to enhance the safety of those using the sea for recreational purposes, the Danish Maritime Authority will now require operators of personal watercraft and the like to hold a special personal watercraft license.

Everyone who wants to operate a personal watercraft must have passed a theoretical as well as a practical test to acquire a personal watercraft license. However, persons who already have a certificate for yachtsmen will only need to pass the practical test.

If you already hold a valid yachtsman certificate that entitles you to operate a personal watercraft, you can continue to do so. However, you have to pass the practical test for operators of personal watercraft and acquire the personal watercraft license within a period of two years in order to continue to operate your craft.

More details information about the new regulations
- Personal watercraft licenses are introduced from 1 January 2018
- You must have turned 16 years to acquire the license

The theoretical test must include knowledge about:
- The distribution of responsibility on board
- The obligation to give way
- Local navigational provisions
- Behaviour and safety on and around the craft

The practical test must include the following:
- Preparing for operation
- Leaving and approaching land
- Using safety equipment
- Using navigational regulations
- Taking precautions in case of falls over board
- Operating at different speeds
- Making evasive manoeuvres and emergency stops
- Displaying safe behaviour and continuously evaluating risks

MARITIME UK

MARITIME UK HAS ESTABLISHED A TASKFORCE TO INCREASE THE NUMBER OF WOMEN WITHIN THE UK MARITIME SECTOR

The Taskforce brings together leaders from across the maritime sector to identify practical steps to increase the number of women in maritime, and crucially within senior roles across its shipping, ports, marine and business services industries.

Achieving a balanced workforce at all levels in the maritime sector will undoubtedly improve culture, behaviour, outcomes, profitability and productivity.

The Taskforce will make a series of recommendations and utilise best practice from other sectors that have taken similar action.

Sue Terpilowski, Chair of the Taskforce, said:
"The need for fairness, equality and inclusion is clearer than ever and the maritime sector must embrace diversity because it's the right thing to do.

"There are women of all ages and abilities wanting to be a part of our maritime future and we must make sure we don't waste any more time in not addressing this issue."

David Dingle, Chair of Maritime UK, said:
"I welcome this new Taskforce and look forward to its recommendations. The entire maritime sector needs to do much more to address gender imbalance.

"Of the 14,350 officers in our country, only 3% are women. Only 4% of our technical officers are women. Of the 6,500 engine officers, only 1% are women. It means that talented women could be missing out on careers in which they could best use those talents."

"Maritime UK will be leading by example, too, and urging members to nominate women leaders to sit on the Board."

Read more at: **http://bit.ly/2EAS69m**

MILESTONE IN POLAR RESEARCH SHIP BUILD

International heavy transportation and lifting contractor ALE has lifted the partly completed polar research ship RRS Sir David Attenborough from fabrication hall to slipway so construction of the bow can be completed.

The ship, weighing 5,000t was moved from fabrication hall 41 metres to the slipway at Cammell Laird's shipyard in Birkenhead.

"We're extremely proud to be so involved in such a landmark project, completing the engineering and execution of heavy transportation and load-out scopes of work," said Scott Fenwick, project engineer for ALE.

"We have found the best solution possible at each stage; designing bespoke transport frames and utilising transport beams to avoid welding to the vessel – which is costly and time consuming."

He said that in order to transport such a large and heavy piece, ALE utilised 216 axle lines of SPMT and 26 transport beams.

The RRS Sir David Attenborough has been commissioned by NERC, designed by Rolls-Royce and is being built by Cammell Laird Shiprepairers & Shipbuilders Ltd. It is a major UK Government investment in frontier science.

When completed, the vessel, which will be operated by British Antarctic Survey, will be one of the most advanced polar research vessels in the world.

PRINCESS YACHTS AND BAR TECHNOLOGIES COLLABORATE ON REVOLUTIONARY CARBON YACHT

Plymouth Princess Yachts has announced that it is working Portsmouth based BAR Technologies on a joint carbon fibre project which has been billed as an entirely new class of yacht.

The project is shrouded in secrecy to prevent any details being released before its official unveiling. Currently the only known fact is that its length is mid-30 foot (approximately 10.6 metres). BAR Technologies covered the new-build in a camouflage hull wrap as it was recently transported out of its yard in Portsmouth.

BAR Technologies was established to share design knowledge, technical skills and resources built up through Land Rover BAR's involvement in the America's Cup programme.

Anthony Sheriff, executive Chairman of Princess Yachts, commented, "We are thrilled to be working on a brand new, fully carbon fibre yacht that will deliver an exhilarating experience through bold innovation and cutting-edge technology.

"While we cannot reveal more at this point, we are confident this entirely new class of yacht, which is one of the most exciting and revolutionary products Princess has developed, will become this year's most sought-after product."

BOOT DÜSSELDORF SETS NEW ATTENDANCE RECORDS

boot Düsseldorf has set new records with 247,000 visitors and 1,923 exhibitors across 16 exhibition halls.

"These figures are unique in the industry," said Messe Düsseldorf CEO Werner Dornscheidt. "No other water sports trade fair reflects the entire world market in all its diversity as completely as boot."

Large sailing yachts over 60ft long and sailing catamarans were of particular interest with manufacturers exhibiting more of these than before.

Generation shift
And Petros Michelidakis, boot director, explained that there was a generation shift with visitors younger than previously. The luxury yacht hall was also more popular than previous years – with both suppliers and visitors. The hall was a sell-out and Mr Michelidakis explained that the buyers of luxury yachts are becoming younger and younger, with more wealthy young people who want to invest in expensive boats and experience the freedom they give to enjoy their time out on the water.

Next year, boot Düsseldorf will celebrate its 50th birthday from January 19 to 27 January 2019.

(photo: Messe Düsseldorf/ctillmann)

THE WORLD LPG ASSOCIATION PUTS THE FOCUS ON MARINE IN A NEW REPORT

The World LPG Association (WLPGA), with its continued commitment to cleaner environment, has issued a report "LPG for Marine Engines – The Marine Alternative Fuel", dedicated to the use of LPG in the marine sector.

The WLPGA report aims to open the doors for LPG as the next marine alternative fuel. The report contains a wealth of information, data and compelling arguments in support of using LPG as the fuel of choice in marine vessels. It also promotes the understanding of the technical possibilities and market potential of LPG as a fuel in the marine sector. The report gives a comprehensive overview of aspects related to LPG as a marine fuel, including production and utilisation, engine technologies, markets, safety considerations, environmental performance, pricing, and financial feasibility.

LPG as a marine fuel is at least as attractive as LNG, already available almost everywhere, offering shorter payback periods, lower investment costs and less sensitivity to fuel price scenarios. LPG can be used in all sizes of vessels from the largest of ocean going ships, down to the smaller boats with inboard or outboard engines. On the basis of the recommendations of this report, significant additional activity is now ongoing, in particular targeting the sector of large shipping and bunkering.

LPG can play a major role in this changing environment and re-establish itself in the position that it deserves as an ideal alternative clean marine fuel.

The report in full is available to read here at **http://bit.ly/2B622oY**

CLASSNK ISSUES WARNING OVER HATCH COVERS AND COAMINGS DEFICIENCIES

Port State Control inspectors have been frequently identifying deficiencies during inspections related to the securing devices of cargo hold hatch covers and hatch coamings, according to a recent warning issued by classification society, ClassNK.

Such deficiencies included seizing, damage or missing cleats, as well as damage or wastage of cleat crutches (saddles) and so on.

Port State Control inspectors often confirm not only the condition of the hatch cover gaskets, but also the condition of the closing devices. When a defective condition, as seen in the photograph, it should be pointed out as a deficiency.

Furthermore, it is entirely possible says ClassNK that such a deficiency might lead to grounds for detention due to a lack of an SMS implementation plan.

ClassNK recommends that visual inspection and maintenance of securing devices between hatch covers and coamings, including crutches, should be carried out for all ships at appropriate intervals to ensure there are no potentially serious issues developing.

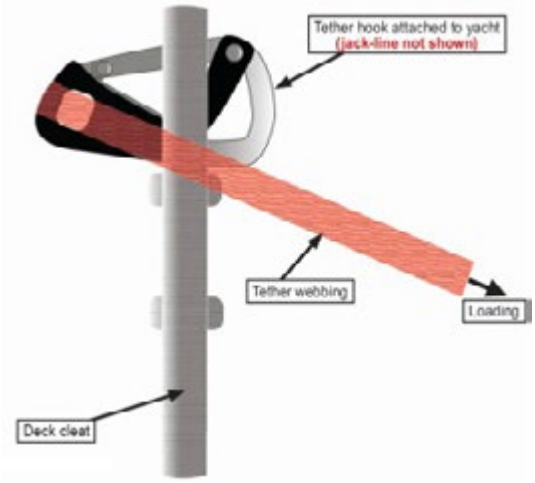
MAIB ISSUES SAFETY BULLETIN ON THE USE OF SAFETY HARNESS TETHERS ON SAILING YACHTS

The sailing yacht CV30 was taking part in the third leg of the Clipper Round the World Yacht Race having left Cape Town on 31 October 2017 bound for Fremantle, Western Australia. At about 1414 local time on 18 November 2017, the yacht was in position 42°30.3'S, 087°36.3'E, approximately 1500nm from Fremantle, when a crew member, Simon Speirs, fell overboard. He was attached to the yacht by his safety harness tether. The hook at the end of the tether that was clipped to a jack-line, deformed and released resulting in him becoming separated from the yacht. Simon Speirs was recovered unconscious onto the yacht but sadly could not be resuscitated.

Initial Findings

Simon Speirs was using a three-point webbing tether attached to the integral harness of his lifejacket that allowed him to clip on to the yacht with a short or long tether. A safety issue identified during the investigation was that the hook on the end of Mr Speirs' tether had become caught under a deck cleat (see image), resulting in a lateral loading that was sufficient to cause the hook to distort and eventually release. The harness tether was certified under ISO12401 (Small craft – Deck safety harness and safety line – Safety requirements and test methods), which is the international standard applicable to this equipment.

The standard contains detailed testing requirements that assume the tether and its hooks will be loaded longitudinally rather than laterally. The tether hook was of a conventional design and quality of build and was commonly used by manufacturers of safety harnesses and tethers that were certified under ISO12401. When loaded longitudinally, the tether can withstand a load of over 1 tonne. However, when loaded laterally a tether hook will deform at much less load. It is important that tether hooks remain clear of obstructions and are free to rotate to align the load longitudinally.



Safety lesson

To prevent the strength of a safety harness tether becoming compromised in-service due to lateral loading on the tether hook, the method used to anchor the end of the tether to the vessel should be arranged to ensure that the tether hook cannot become entangled with deck fittings or other equipment.

THE IMPORTANCE OF CARGO VENTILATION NEWS BULLETIN ISSUED BY JAPAN P&I CLUB

The Japan P&I Club has recently published a news bulletin. It highlights the importance of cargo ventilation, the introduction of air into and through the cargo space and the exhausting of the in-hold air.

Cargo ventilation may be needed in order to ensure that there is a sufficient oxygen supply for safe personnel entry into the cargo space. In addition, ventilation can remove poisonous and flammable gases which could give rise to a dangerous situation.

These gases might be produced by the cargo itself, e.g. evolution of carbon monoxide from a heating coal cargo, or they may originate from another external source, e.g. phosphine gas evolution during cargo fumigation.

Regardless of the case, cargo ventilation requires the measurement of the gases present in the air until such a time that they can be considered to have returned to normal or 'safe' levels. It is not primarily concerned with the care of the cargo.

Apart from the above safety reasons, cargo ventilation aims to minimise condensation, or so-called 'sweat', forming inside the cargo space.

This is an important aspect of caring for a particular cargo while it is in the custody of the master of the carrying vessel, because a failure to do so may result in cargo damage and thus a cargo claim at outturn.

Moreover, when deciding whether or not to ventilate a cargo compartment to eliminate/minimise sweat formation, it is crucial that the crew measures and compares the external air temperature with that of the cargo itself, or the air inside the cargo space.

Finally, Japan P&I Club outlined the cargoes that face the most risk.

Namely, cargoes that are more susceptible to damage caused by sweat are those that will deteriorate in some way when in contact with water.

These cargoes may be either hygroscopic or non-hygroscopic. Hygroscopic cargoes are those which have an inherent moisture content that can interact with the air. Non-hygroscopic cargoes are those that do not have an inherent moisture content, or at least not one which can interact with the air.

MCA ISSUES MGN 578 ABOUT CONDUCTING OVERSIDE WORK ON YACHTS AND OTHER VESSELS

The UK Maritime & Coastguard Agency has published a Marine Guidance Note – MGN 578 – about the use of equipment while undertaking work on commercial yachts, small commercial vessels and loadline vessels.

The aim of Marine Guidance Note MGN 578 is to provide guidance on the use of "rail and trolley" and similar systems while conducting overside work on yachts and other vessels. The key points are the following:

- To ensure that new systems comply with the current BS/EN Standards,
- To ensure that existing systems have been checked to an equivalent standard,
- To ensure maintenance is carried out to the manufacturer's advice.

In addition, Annex 1 outlines the following Regulations which are relevant to overside working:

The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 (S.I. 1997/2962);

The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Provisions and Use of Work Equipment) Regulations 2008 (S.I. 2006/2183);

The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Lifting Operations and Lifting Equipment) Regulations 2008 (S.I. 2006/2184);

The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Work at Height) Regulations 2010 (S.I. 2010/332);

Finally, Annex 2 gives details of the testing and operating procedures, while Annex 3 contains the requirements for single person systems.

MCA AMENDS ITS CODE OF SAFE WORKING PRACTICES

The UK Maritime & Coastguard Agency (MCA) has published an updated version of the 'Code of Safe Working Practices for Merchant Seafarers'. The amendments give advice on improving health and safety of seafarers, primarily for those on board UK registered ships. But surveyors should also take note.

The Code provides guidance on safe working practices for the many and numerous situations that occur on ships.

However, it should not be considered a comprehensive guide to safety and its advice should always be considered in conjunction with the findings of the operators' risk assessment, and any information, procedures or working instructions provided by the manufacturer, supplier or any other source should be followed, UK MCA notes.

Safety risks onboard can lead to death, permanent disability, temporary disability or reduced work capability. Occupational health and safety risks may arise from work-related hazards or from the general living and working conditions on board.

If some risks are cannot be avoided, appropriate control measures should be used to minimise the hazards that may cause injury, disease or death. Harmful exposure may have short-term or long-term adverse health effects.

The above risk risks include, but are not limited to, the following:

- Ambient factors, like noise, vibration, lighting, ultra-violet light, non-ionising radiation and extreme temperatures.
- Inherent hazards, such as the vessel's structure, means of access, ergonomic hazards and hazardous materials such as asbestos.
- Hazards arising from work activities, such as work in enclosed spaces, use of equipment and machinery, working on and below deck in adverse weather, dangerous cargo and ballast operations, and exposure to biological hazards or chemicals.
- Health risks, such as fatigue and impacts on mental occupational health; and the emergency and accident response.

The new code can be found at **http://bit.ly/2GPvh3r**

UPDATED GUIDELINES FOR THE CARRIAGE OF CALCIUM HYPOCHLORITE IN CONTAINERS

The International Group of P&I Clubs (IG Clubs) and the shipping line members of the Cargo Incident Notification System (CINS) have issued a revised version of the guidelines for the carriage of calcium hypochlorite in containers.

The Guidelines were first issued in May 2016, with version 2.0 of the Guidelines issued in January 2017 to take account of the package limit of 100lb drums under US measurement as well as the package limit of 45kg net weight.

The revised version 3.0 of the Guidelines seek to provide continuity in terms of the referencing of the package limit and provide clarity as to the nature of the guidelines.

At normal temperatures calcium hypochlorite decomposes very slowly and releases heat. However, at higher temperatures the rate of decomposition increases and if the heat is not able to escape from within the material then its temperature increases, along with the rate of decomposition.

A self-accelerating reaction can result in a violent decomposition of the calcium hypochlorite releasing heat and oxygen. This has resulted in serious fires and explosions.

The packaging and quantity can have an impact on self-accelerating decomposition.

The United Nations Manual of Tests and Criteria provides self-accelerating decomposition test (SADT) methods for determining the properties of substances classified as self-reactive. These tests can also be used to evaluate oxidizers such as calcium hypochlorite. The International Group of P&I Clubs advice in this paper is also based on the critical ambient temperature (CAT) method used to determine self accelerating properties.

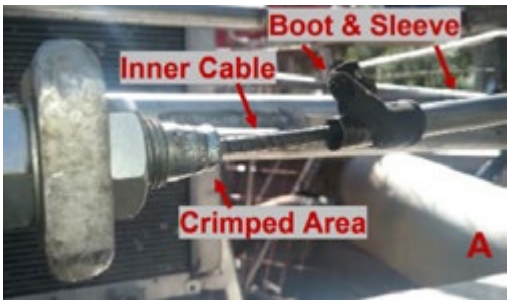
Download the new guidelines at: **http://bit.ly/2EUVjR8**

ACCIDENT PREVENTION CAN BE AIDED BY PROPER MAINTENANCE IS THE SUBJECT OF A USCG SAFETY ALERT

USCG has released a Safety Alert using the example of a commercial airboat incident which lost steering and hit a tree, resulting in a few serious injuries. The Safety Alert aims to remind operators and marine surveyors of the importance of recognising risks and ensuring proper maintenance and repairs.

In this case with the airboat, a deformed connection was the cause. Namely, the end of the body of the steering cable is secured to the vessel and locked in place by two nuts. See image A.

Attached near this fitting is a sleeve which covers the final end of the enclosed cable. The end of the sleeve is inserted into the end of the main cable body which is then crimped inward.



A rubber foot covers this joint, in order to prevent dirt and debris from entering into the cable body and interfering with the enclosed cable's movement. The crimped connection allows for some angular movement at the end of the cable.

Over time, the crimped connection can become deformed due to the stresses occurring at the joint. In the above mentioned case, the parts separated and the end of the cable lost its linear rigidity, putting slack into the control cable and causing a loss of control of the steering foils.

As a result of this information and other similar instances the USCG recommends operators, with the maintenance of these and all vessel types, the following:

- To develop an operational paradigm where maintenance and repair items are evaluated carefully, recognizing the potentials risks associated with their operation should the repair or maintenance item not be properly performed or achieved in a timely manner.

- For airboat operators specifically: Operators of airboats that use flexible type steering control cables are reminded of the need to thoroughly inspect cables before use, including areas under the dust boots. Due to the forces encountered on airboat applications, owners are also encouraged to ensure these cables are properly maintained and to immediately replace a worn cable. Operators are discouraged from attempting to repair a factory crimp.

Read the full article and download the safety alert at: **http://bit.ly/2DjSCry**

TRANSPORT CANADA UNVEILS NEW ARCTIC SHIPPING SAFETY AND POLLUTION PREVENTION REGULATIONS

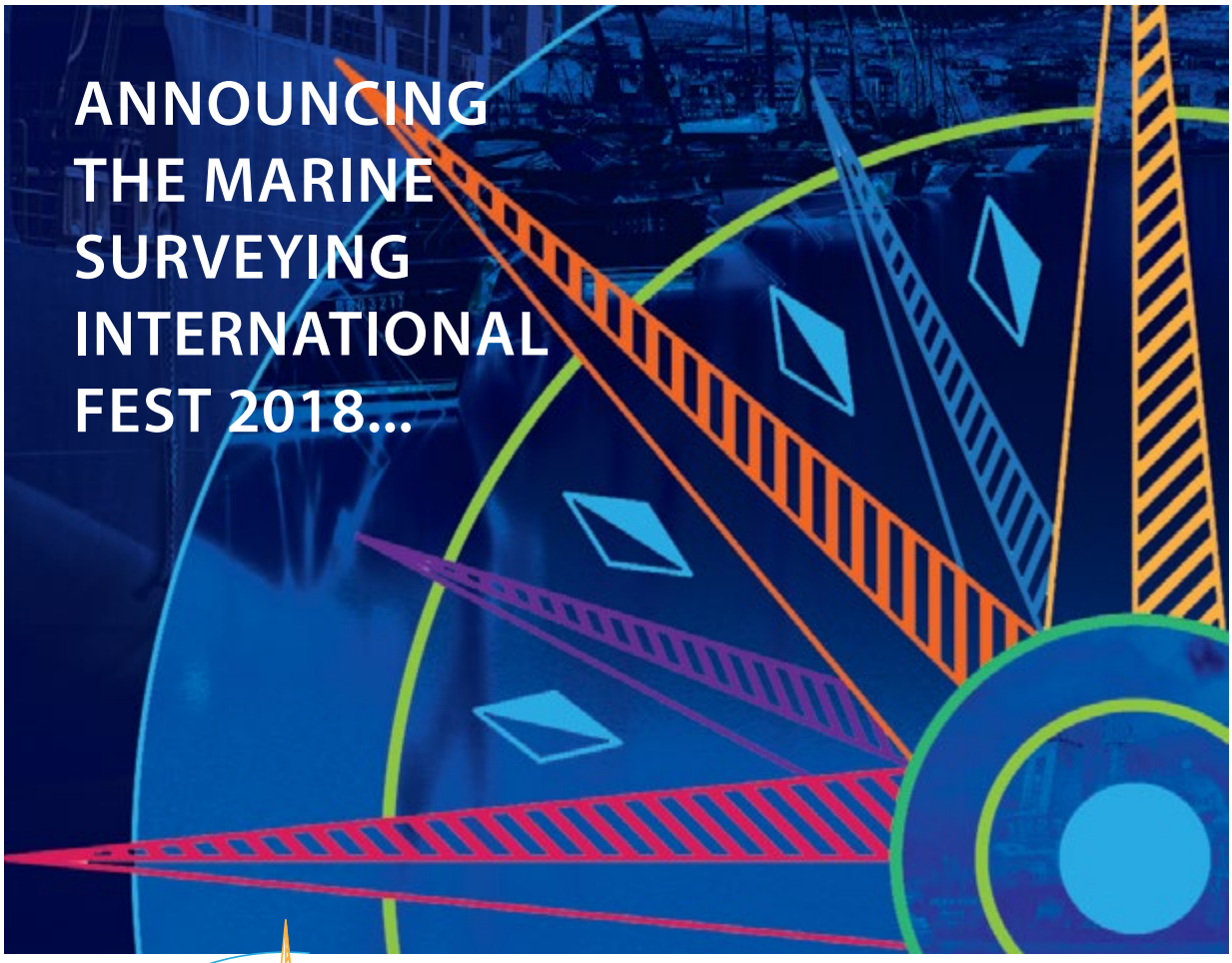
To uphold the Government of Canada's high standards for marine shipping in the north, Transport Canada has introduced new Arctic Shipping Safety and Pollution Prevention Regulations. The regulations incorporate the International Code for Ships Operating in Polar Waters (the Polar Code) into Canada's domestic legislation.

The Polar Code addresses the unique hazards encountered by certain vessels that operate in the Arctic and Antarctic. The Polar Code and Canada's new regulations include a variety of safety and pollution prevention measures, including those related to vessel design and equipment, vessel operations and crew training. Drawing from decades of experience as an Arctic regulator, Canada played a key leadership role in developing the Polar Code at the International Maritime Organization.

In addition, Transport Canada is taking action to protect the Canadian coasts and support safe and responsible shipping in Arctic waters through the Oceans Protection Plan. The Honourable Marc Garneau, Minister of Transport, announced in August 2017 more than $175 million in funding to help protect Arctic waters.

As part of the Oceans Protection Plan, the Government committed to reviewing the Pilotage Act to support the delivery of safe, efficient and environmentally responsible pilotage services. The ongoing review addresses a wide range of topics including governance, safety, labour models, tariffs, economic considerations and emerging issues, including pilotage in the North.

ANNOUNCING THE MARINE SURVEYING INTERNATIONAL FEST 2018...



Marine Surveying International FEST 2018

All you need to know about surveying, and more, in just 24 hours

Organised by the International Institute of Marine Surveying in conjunction with **Constellation Marine Services**, Dubai and **The Nautical Institute**

Most professions and activities increasingly recognise their own special international days. Three such examples are World Radio Day, World Puppetry Day and International Firefighters' Day. And of course a little closer to home, there is World maritime Day.

It is high time that marine surveyors have their own day – a day that celebrates the importance of their work and profession.

So, IIMS has decided to create the International Marine Surveying Fest 2018, a 24 hour celebration of marine surveying. The date for this innovative and eye catching event, in association with Constellation Marine Services and Nautical Institute, is Wednesday 12 into Thursday 13 September, depending on your time zone!

IIMS will be preparing a major PR offensive ahead of the event, not just for the benefit of those in the surveying profession, but also for anyone who touches the sector, or engages with surveyors on any level to promote the art of marine surveying. International Marine Surveying Fest 2018 is an online only event and will start on 12 September at 12 noon and run until 12 noon the following day. Each hour on the hour, a new presentation will be delivered live by a presenter somewhere in the world on a surveying topic. For one fee, you can join the Fest taking advantage of as many of the 24 presentations over the 24 hours as you wish. And if you miss any presentations because the time does not work for you in your location, your fee gives access to the entire content after the Fest, which will be videoed. The programme is being put together now and more details will be announced soon.

ANNUAL WESTERN MEDITERRANEAN LYSCWG ON 26-27 APRIL

As in previous years, IIMS is hosting an event around the Palma Superyacht Show on the island of Majorca on Thursday 26 to Friday 27 April for large yacht and small craft surveyors. In recent years the event has gone from strength to strength and the agenda for this year looks equally appealing.

On the first morning the group will meet outside the Superyacht Show entrance to be transported the few miles to take a look at the METALNOX facility at Calvia.

Meet at 08.45 – Transfer to METALNOX by bus

Amongst other things to be seen at METALNOX is the Prop Scan computer system which measures the size and shape of the propellers of ships and yachts internationally. Prop Scan is the first certified ISO system for the correction, reconfiguration and optimization of propellers.

13.15 – Lunch back in Palma

After lunch the group will meet in the classroom adjacent to the Superyacht Show for a series of specially prepared presentations.

14.30 – Karen Brain: Understanding your insurance cover. What do Marine Professionals need?
15.30 – Phil Duffy (topic to be confirmed)
16.30 – Bob Hoghton: Mini ISM
17.45 – Close
19.15 – Dinner

A prompt start on the second day within the show itself gives Mike Schwarz, IIMS CEO, the opportunity to bring delegates right up to date with what has been happening in and around the IIMS family over the past few months.

The group will then transfer by bus for the second facility visit, this time a trip to Oscar Sierra before returning to the Superaycht Show. At that point the training event officially concludes and delegates can then enjoy the show for the rest of the afternoon courtesy of a free VIP pass from IIMS.

Oscar Sierra Safety Equipment S.L. is one of the leading marine safety specialists in the Mediterranean.
They are both manufacturers and distributors of marine safety equipment. The group will focus on looking at lifesaving and firefighting equipment during their visit.

The cost of the event is €190. This includes training and bus transfers on both days, plus a complimentary VIP entry ticket to the show which can be used over the weekend too. Lunch and dinner is at the individual's cost. Attendance at the event also attracts 5 CPD points.

To register your place at the event please email Cathryn Ward at **education@iims.org.uk** or call her on + 44 23 9238 5223. We will invoice you.

IIMS FORMS AN INLAND WATERWAYS WORKING GROUP

INTERNATIONAL INSTITUTE OF MARINE SURVEYING
INLAND WATERWAYS WORKING GROUP

In response to interest expressed recently by IIMS members, a decision has been taken to form a new inland waterways group. IIMS member, Chris Williams, has agreed to head up the group (supported by several others) under the auspices of Large Yacht & Small Craft Working Group Chairman, John Excell. The initial intention of the group is to meet formally twice a year for training days around the UK and to communicate and network through various social media channels to share information and best practice. The first practical training event is planned for Thursday 19 April 2018 at Croxley Green, Watford at the P&S Marine Yard on the Grand Union Canal hosted by Ralph Kitts and Tom Pattle.

The schedule for the day is as follows:

09.00 – 10.30: Practical welding session and inspecting good and bad welds

10.30 - 10.50: Coffee

10.50 - 12.30: Surveying a narrowboat, to include ultrasonic testing and where to take readings. Hammer - where to hit the vessel. Pitting. Welds.

12.30 - 13.45: Lunch at the Rising Sun (included in the delegate fee)

13.45 - 14.45: How to translate the survey results into a report.

14.45 - 16.30: Overplating discussion including a presentation from Jeffrey Casciani-Wood with a view to creating some guidance notes

The cost of the training day is £120 to include lunch at The Rising Sun, tea, coffee and a copy of the introduction to manual metal arc stick welding. Reserve your place online at: **http://bit.ly/2ogBXiu** or call Cathryn Ward on +44 23 9238 5223 or email her at **education@iims.org.uk**.

IIMS 2018 ANNUAL GENERAL MEETING DATE ANNOUNCED

There is no London Conference planned for 2018, but IIMS is bound by its Constitution to hold an Annual General Meeting for its members. For the convenience of those wishing to fly in to the UK, it has been decided to hold the AGM at a hotel adjacent to Heathrow Airport. The date is 26 June 2018 and the meeting will be held from 13.00 to 15.00. Tea and coffee only will be available on arrival. There is no requirement to pre-register for the Annual General Meeting if you plan to attend in person and there is no cost. The agenda, procedure for postal and proxy votes and various Directors' reports will be made available to members to view and read one month prior to the meeting.

The details of the venue are: Hilton Garden Inn London Heathrow Airport, Eastern Perimeter Road, Longford, Hounslow, Middlesex, UK, TW6 2SQ

Members are welcome to attend in person, but for the first time the Annual General Meeting will also be broadcast live via Zoom.

CLOSING DATE TO SECURE YOUR CPD FOR 2017 FAST APPROACHING

The window for claiming your Continuing Professional Development points for 2017 is still open, but it will close on 31 March 2018. You still have time to log on to the IIMS CPD App to secure your points. Remember, in some instances you will be required to supply appropriate evidence to substantiate your claim via the App. IIMS reviews every claim personally, but if there is no supporting evidence where it is required, your claim will be rejected. So please take care when submitting your points claim to avoid disappointment.

You are required to obtain just 10 points to be CPD compliant for 2017. Using the IIMS CPD App means it has never been easier to claim your points. The reward for those who successfully claim their CPD points is a specially commissioned CPD Compliant roundel, which will be applied to the IIMS web page listings of those members who qualify. If you experience technical issues using the App, or simply do not know what to do and how to use it, do not hesitate to contact the IIMS head office by email at: info@iims.org.uk and they will ensure you get the necessary technical support and advice you need to resolve things and get you started. See here for details: **http://bit.ly/2vrA5tu.**

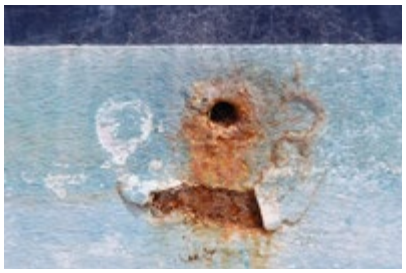
IIMS is delighted to welcome some new faces as members in the first couple of months of 2018 as follows:

Contact	*Country*	*MemberShip Status*	*Membership Number*
Mr Mark Nicholas Bulteel	United Kingdom	MIIMS	1229
Mr Woo Young Byun	South Korea	MIIMS	1236
Mr Ishaan Goel	Canada	AffilIIMS	1202
Mr Eun Seog Jeon	South Korea	MIIMS	1226
Mr Si Won Kim	South Korea	MIIMS	1233
Mr Sung Hyun Kim	South Korea	MIIMS	1224
Mr Jung Min Lee	South Korea	MIIMS	1225
Ronan Richard	France	TechIIMS	1242
Aidan Tuckett	United Kingdom	MIIMS	1231
Mr Romaric Pagning Gad	Cameroon	AssocIIMS	1216
Mr Rafiu Aliu	Nigeria	AffilIIMS	1214
Captain Sudipta Mukherjee	India	AffilIIMS	1161
Mr Medhat Altawil	Canada	MIIMS	1206
Captain Michael Antony Clegg	UAE	MIIMS	1217
Mr Samuel Campbell	Northern Ireland	MIIMS	1211
Mr Thomas Pattle	United Kingdom	SupplIMS	1210
Mr Markku Sandell	Finland	TechIIMS	1237
Mr Michael Lyness	United Kingdom	MIIMS	1218
Captain Marx Marion Quebral	Philippines	MIIMS	1209

IIMS is also pleased to announce that the following students have recently completed their studies through the IIMS distance learing programme.

Miss Tari Van De Merve has been awarded the IIMS Professional Qualification in Commercial Shipping
Mr Lee Wilkes has been awarded the IIMS Professional Qualification in Commercial Shipping
Mr Anthony Jones has been awarded an IIMS HND in Marine Surveying.

We wish all three students good luck for a long and successfully career in marine surveying.



PLANNED TRAINING EVENTS FOR 2018

23/24 March 2018: IIMS North America Training, Baltimore, USA

26 March 2018: LYSCWG - Rig training day, Southampton, UK

19 April 2018: Inland waterways training day, Watford, UK

26/27 April 2018: Western Mediterranean LYSCWG training event at the Palma Superyacht Show

14 May 2018: Tonnage classroom and practical training IIMS head office, Portchester (limit 15 delegates)

15 May 2018: Certifying Authority Spring training day

26 June 2018: Annual General Meeting, Heathrow, London

31 July - 3 August 2018: IIMS & eCMID South East Asia Conference & Workshop at the Australian National Maritime Museum, Sydney

12/13 September: Marine Surveying International Fest 2018

October 2018: Eastern Med LYSCWG training event, Malta

15 October: Inland waterways training day - Surveying LPG on boats

29 October 2018: LYSCWG 'super' training day Portsmouth

12/13 November 2018: LYSCWG Scotland, Glasgow

27 November 2018: IIMS and British Stainless Steel Association - Marine Corrosion and its Prevention in Amsterdam

Check the web site and future news bulletins for more details on these events as the programmes and the venues are announced and for details of how to reserve your place. See: **http://bit.ly/2niVUFS**

HOW TO CONDUCT A COMPLETE MAST AND RIGGING SURVEY COURSE

Join tutor, Kim Skov-Nielsen, real time or online (morning only) for a comprehensive classroom and practical based training day taking place in Southampton, UK on Monday 26 March 2018 that will explain how to carry out a complete mast and rigging survey. In the morning session, Kim will give a 3 hour classroom presentation and will provide a checklist for delegates.

In this session, he will talk about:

- how to inspect the mast and rigging
- when to inspect the mast and rigging
- what to expect
- what to look for

In his presentation, Kim will cover all types of rigging from rope to galvanic to carbon, as well as looking at different types of masts too. The morning session only is also open to online delegates.

In the afternoon session delegates will head over to The Rig Shop. How many and what type of rigs are available will be determined on the day. Working in small groups, those present will look at and survey the laid out rigs, noting their comments and coming up with a list of faults and issues for later group discussion before close.

Kim Skov-Nielsen MIIMS, or KSN to his friends, is a larger than life individual. He is a well-known and experienced marine surveyor who knows his subject. KSN has worked full-time in the marine industry since 1979, initially as a yacht skipper and ocean racer and then as a marine surveyor. KSN has sailed almost 150,000 blue water miles worldwide, amassing a wide range of valuable experience – from building boats to sailing them around the world.

Non IIMS members and students are welcome to attend. Full details about the day long course and how to reserve your place are available at: **http://bit.ly/2DhGdJ2**

REPORT ON THE IIMS AND BRITISH STAINLESS STEEL ASSOCIATION ONE DAY SEMINAR

A combined audience of nearly 50 real-time and online delegates assembled on 23 January near Portsmouth UK for the first joint IIMS and British Stainless Steel Association training day under the guidance of tutor and course author, Dr Mike Lewus. The topic of the day? 'Marine Corrosion and its Prevention in Small Vessels'. There was plenty of hard science, interspersed with practical reviews and discussion around particular types of corrosion, from pitting and crevice to stress cracking corrosion using photographic and anecdotal evidence.

Mike and his team produced a fabulous, comprehensive and very thick course manual for delegates a copy of which now sits in the IIMS library at head office.

The content of the day was themed and structured by Mike as follows:

1) Corrosion: Fundamental Principles
2) Forms of corrosion in 'marine metals'
3) Corrosion above the waterline
4) Corrosion below the waterline
5) Corrosion prevention strategies
6) Failure analysis and case studies

Feedback from those who attended has been hugely positive. As a result, IIMS and BSSA have agreed to run another identical day's training in Amsterdam on 27 November 2018. Watch out for further details on the web site. Many thanks to Graham Haines and Cygnus Instruments too for their generous support on the day.

Mike Lewus is happy to take calls from IIMS members on any aspect of corrosion and, if he can, is happy to help and advise. He can be contacted by email at mike.lewus@bssa.org.uk, or call him at the British Stainless Steel Association by telephone on + 44 114 292 2637.

IIMS AND ECMID SOUTH EAST ASIA CONFERENCE, SYDNEY

The International Institute of Marine Surveying is joining forces with its subsidiary, the Marine Surveying Academy, to deliver a four day conference and workshop training event in Sydney, Australia from 31 July to 3 August 2018 around the Sydney Boat Show. The venue is the splendid Australian National Maritime Museum, set in the heart of Sydney.

Details of the event and speaker programmes are being put together now, but in brief the daily agendas are:

Tuesday 31 July: eCMID AVI validation course

Wednesday 1 August: eCMID essential one day seminar for AVIs and others interested in the scheme

Thursday 2 August: IIMS classroom and practical based training and workshops

Friday 3 August: IIMS classroom and practical based training and workshops

INTERNATIONAL INSTITUTE OF MARINE SURVEYING 2018 BALTIMORE CONFERENCE

Entitled "Tools & Rules", the IIMS 2018 Baltimore Conference will take place on Friday 23rd and Saturday 24th March at The Marine Conference Center, MITAGS (Maritime Institute of Technology and Advanced Graduate Studies), 692 Maritime BLVD, Linthicum Heights MD 21090.

The programme and agenda, to include ship simulator tours throughout the day on Friday, is:

Friday 23rd March 2018

08.15 Registration and Coffee
08.45 Mike Schwarz, IIMS CEO: 'An Introduction and Explanation of eCMID-Common Marine Inspection Document and Accreditation Scheme.
09.15 Joseph De Remer, Beacon Marine Service: 'Corrosion reasons for and modern prevention of'.
10.00 Brook Stevens, Sea Keeper: 'Latest Technology in Gyroscopic Stabilization'.
11.00 Coffee and snacks
11.15 Gerald Zingale, M. R. Wolfe & Company: 'Procedures and precautions involved in inspection of bulk fluid, in this case Caster Oil'.
12.15 Lunch in the Mess Hall lower deck of the facility. Lunch is included in the cost of of the program.
13.30 Lloyd E. Griffin III, Frigate Marine Services and Coastal Thermal Imaging: 'Metal vessel damage investigation and repairs by the numbers - NVIC's, NAVSEA codes and standards'.
14.30 James Renn Sr., Marine Forensic Technicians: 'Propulsion emissions and the "Tier" system. Potential for Surveyor profit center. LNG regulations for propulsion systems'.
15.15 Coffee Break
15.30 David DiQuinzio, Annapolis Hybrid Marine: "Electric propulsion systems and alternate new build and repower solutions'.
16.45 Close for the day

Saturday 24th March 2018

08.30 Registration
09.00 John Cavenner, Cavco/Boat Canvas University: 'Boat Canvas University Mini Courses in estimating by general rule Canvas Losses, Top Frame Costs and Types of Clear Enclosures Material and life spans'.
10.15 Erich Black, Black and Associates: 'Most up to date Infrared, Photo Camera and Moisture meter combination with updates to new technologies'.
11.15 Coffee and snacks
11.30 Fredric Wise and William Stahlgren: 'The rebuild from frames up of a 1965 43' wooden sailing vessel. Vessel was built of old growth yellow cedar in the Pacific Northwest by Thaddeus Pierce. This project which has taken years to complete has taken the vessel very nearly apart and brought her back to what will be Bristol condition'.
12.30 Lunch in the Mess Hall.
13.45 James (Tripp) Ewers III, Center of Effort Marine Services: 'An explanation and understanding of commercial and recreational sailing vessel rigging per NVIC 0216 (note by the that date that this is a very new standard). Explanation of cited maintenance and inspection procedures'.
14.30 Coffee and snacks
14.45 Richard Parks, ARP Instruments: 'Explanation of a state of the art soluble salt and conductivity with regards to ISO 8502-6 and 8502-9. Description and demonstration of a metering system-Hedon N and how the procedures relate to standards and NAVSEA'.
17.00 Conference closes

The Conference site is just minutes from BWI Airport and there are many hotels in the area and in nearby Baltimore.

To reserve your place at the Conference, or as an online delegate, please complete the online form at **http://bit.ly/2EFgFlK**, or call James Randy Renn on 410-490-0216, or email him directly at **iims.usa@aol.com**

News has reached IIMS of the death of two full Institute members in recent months. IIMS would like to pay tribute to both individuals through obituaries written by close friends of each man.

OBITUARY
PETER GREEN MIIMS

Written by his close friend of many years, Simon Parkinson

My first encounter with Peter was around twenty years ago in Palma, Mallorca. My work partner and I had been asked to remove some sub-standard filler on the keel of a boat on the hard in one of the local boatyards. In our normal cavalier fashion we decided on the rather unorthodox method of attacking it with some axes we had lying around in the back of our van. Much to our horror, thinking there was nobody around and aboard, we heard shouts coming from inside the boat. This large, jovial faced man appeared on the deck, laughing and exclaiming that in all his years in the industry he had never seen anyone working on a boat with a felling axe! From that moment onwards we became firm friends and reminded each other of this incident for many years to come.

The best way to describe Peter was as a large man with a great love of life and all things nautical in particular. He was passionate about sailing and owned many sailboats throughout his life. Peter took me under his wing and was invaluable to me as I was able to take advantage of all the knowledge he had acquired in all aspects of the nautical industry.

I know of several young surveyors, still wet behind their ears at that time, who have Peter to thank for getting them on their feet.

Sadly, several years ago, Peter suffered a stroke while on a surveying job in Pisa, Italy. He lost the ability to walk unaided and his speech became badly affected. After many weeks in hospital he was nursed by his loving and amazing wife Margret, who single-handedly looked after him. Margaret assisted this bear of a man in all his daily movements to and from rehabilitation, through to countless other things. Before the stroke Peter and his wife Margret were one of the most active couples I knew, always with projects on the go and travelling to far flung corners of the globe. After Peter's illness, his handicap sadly put an end to most of this, but he was still able to get down to his beloved sailboat in Holland and with a little help get out on the water.

To the very end Peter never once complained about his situation or lost his joie de vivre. The world is indeed a lesser place without Peter; but I am convinced that somewhere in the great beyond he is sailing his boat on a flat calm sea with a stiff breeze.

Peter is survived by his wife Margret, his two daughters and three grand children.

OBITUARY
TERRY REYNOLDS MIIMS

A tribute to marine surveyor and IIMS member, Terry Reynolds, who passed away in late 2017 written by his friend of many years, Peter Dawson.

When approached to pen this tribute to Terry Reynolds, my first thoughts were: How do I fit a large life into a short article? How do I follow in words, the footsteps of a larger than life character in the marine industry?

I knew Terry first as his lawyer and then as his friend. He was one of the first and most loyal supporters of my then fledgling maritime law practice and we voyaged together through litigation that would have destroyed a lesser man.

Terry was the second child and only son of Gwen and Eric (Capt.) Reynolds. He was born on 3rd August 1950, and grew up with his sister Philippa on an apple orchard in Mariri, Tasman. At school he was a member of the shooting team, competed in rowing and successfully managed to

avoid playing rugby. He had a lifelong passion for shooting, gadgets and things that went 'bang'.

At the age of 15 his parents shifted to Whangarei and Terry started his life-long love affair with the sea. Knowing his son, his father wisely told him not to train on the deck side but to become an engineer. He served his apprenticeship at Whangarei Glass as a fitter/turner. His then boss, Owen Davies, who called him "Terence" when he blew it or played some prank on one of his fellow workmates, was to eventually become his father-in-law when he married Jean in 1984.

Terry was a recidivist traveller. As a youngster he travelled on horseback to various shows often with his lifelong girlfriend Chrisy. As a merchant seaman he travelled the world. As an engineer surveyor he travelled the length and breadth of New Zealand in his Landcruiser with a few overseas runs to remind him of how much he loved this country.

Terry started his sea-going career with a Swedish merchant shipping company as an oiler, and eventually, through hard work and perseverance with his exams, became one of the youngest chief engineers in the foreign-going merchant marine at the age of 32. Study for Terry was never easy, and it was only in the past two years that he was finally assessed and declared to be, what he termed 'special', with a spelling/reading age of nine, as a result of dyslexia.

His career took him to many countries in the world and he was known to say, "If it has a port I've been there". Japan was a favorite place, where he was heavily involved early in his career, with overseeing the build of large merchant ships. He loved the people and especially the food. On his last Friday he enjoyed a Japanese dinner with Jean.

Motor-sport was another of his many interests. In 1972 and 1974 he won coveted prizes for off-road racing. He drove his heavily modified 1952 series 1 Landover to victory on many occasions. His love of motor sport gave rise to a serious accident while motor rallying and damaged his back. This revealed the arthritis that brought him constant pain and caused his hunched appearance as his spine slowly fused. However, in all my years of knowing Terry, I never once heard him complain of his disability.

In 1983 he met Jean whilst visiting his former boss Owen Davies. They were married in 1984 and promptly set off with Jean's two girls, Leanne and Donnell, to live on board refrigerated cargo ships.

1986 saw the birth of his son Neil, and Terry decided to come ashore. In 1987 he began his journey to become an engineer surveyor by joining the Ministry of Transport Marine Division. Ironically, one of his first tasks in this role was learning all there was about the building, installation and running of lifts, a skill that ultimately cost him his life.

His first task in his new role was to clean up a large number of legacy problems with the Marine Division in the top of the South Island. It was around this time that the then government decided to get out of the vessel inspection business, and Terry and Jean started Survey Nelson Limited, which quickly became one of the largest safe ship management companies in New Zealand. However, in 2008, the then Director of MNZ commenced a process to remove Survey Nelson's right to operate as a safe ship management company. During this period, I had the privilege of walking next to Terry and Jean as they endured three high court actions, one Court of Appeal hearing and resisting an application to the Supreme Court, which is the highest court in our land. In the end the courts found what Terry and Jean knew all along, that the then Director's poorly articulated concerns about Survey Nelson and its directors were without foundation.

Terry and Jean were successful in having their right to operate as a safe ship management company restored. But it is testimony to the man that the very reason that made him

vulnerable to the actions of the regulator, was his desire to come alongside struggling fishing and marine businesses and guide and mentor them from noncompliance to compliance, from being indifferent operators to good operators.

During 2012 he underwent major heart surgery ('replumbing' was his description) but this failed to slow him down. After a few weeks rest and he was as busy as ever. He was a font of knowledge and support to operators across the length and breadth of New Zealand, and the industry felt it very keenly that a surveyor of his depth of experience and knowledge and empathy was excluded from the industry.

But lest I give you the skewed impression of the man, Terry was quick to inform those of his clients who let him down in pithy, and succinct terms as to where they had strayed ... and his background as a ship's engineer allowed him to come up with some very creative and colorful descriptions of people that he had little regard for. I cannot repeat his accurate and descriptive characterisations of some Maritime New Zealand staff, and those who crossed him. On the other hand, one of Terry's greatest compliments to someone was to refer to a person as "He or she is good people". High praise indeed from a man who left big footprints across the marine industry and who was in his own words 'good people'.

Ultimately Terry and Jean won the battle to keep Survey Nelson alive, but lost the war as the personal and financial toll on him cost him his safe ship management business and his connection to the people and vessels that he served so well.

Terry had a strongly developed and stubborn sense of justice and injustice which carried him through the Survey Nelson litigation. He also had strong opinions on everything (not all of which were correct) and was a natural leader and mentor. He exhibited a willingness to reach out and help others without counting the personal cost, and an un-swerving loyalty to his friends and colleagues.

Those very qualities allowed Terry to pick himself up off the floor after the Survey Nelson marine survey business came to an end, and start a very successful hazardous equipment survey business, including boilers, cranes, welding and the like. In this role, he continued to mentor younger surveyors in their profession and will be sorely missed.

He was taken too soon, and the maritime industry is a less colorful place for his passing.

Peter Dawson, Dawson & Associates, New Zealand

IIMS WEB SITE MAPPING – FINDING AN IIMS MEMBER JUST GOT EASIER!

Earlier this year, IIMS launched a new benefit for its members. With immediate effect each IIMS surveyor's web site listing can now be searched by geographic location using one of the new regional online maps we have created. The world has been divided into the following areas: Africa, Australasia, Europe, Middle East, Asia, United Kingdom, The Americas. So finding an IIMS member has become even easier.

From our research, it became apparent that often people use the search facility to find a surveyor local to them. This new innovation makes that simple to do. Every member is now represented on the maps with a unique red coloured pin by location. When hovered over, the pin shows the name of the member. When opened by clicking, it reveals the surveyor's telephone number and specialisations (where appropriate).

Africa: bit.ly/2kxKv3m
Australasia: bit.ly/2kuenxJ
Middle East: bit.ly/2z9vtWg
United Kingdom: bit.ly/2kweNDM
Asia: bit.ly/2CP86Dp
Europe: bit.ly/2kx4fEp
The Americas: bit.ly/2z8r4T7

WHAT A **MARINE SURVEYOR** NEEDS TO KNOW ABOUT

The growing series of IIMS self help handy guides

"What a marine surveyor needs to know about..." include the titles: Marine Surveying - An Introduction | Imaging Techniques Small Craft Metal Hulls and Ultrasonics | Working In Enclosed Spaces | Surveying Wood Craft | Small Craft, Ship and Boat-Building Terminology Yacht and Small Craft Report Writing | Knowledge Management | Dynamicaly Positioned Vessels | Business Management Skills Small Craft and Superyacht Valuations | Small Craft Engine Surveys | Surveying Metal Craft

BUY ONLINE AT: **iims.org.uk/education/buy-iims-handy-guides**

Or call +44(0)23 9238 5223 and pay by credit/debit card

What's a yacht and small craft marine surveyor worth?

In mid January, IIMS issued a hard hitting and significant press release to forty well known yachting and boating publications around the world. Since its release, several high profile magazines have published the article in full to educate their readers. The reaction from IIMS members on social media following the release was instant too - almost all positive and supportive.

Put simply, the aim of the press release was to remind anyone who engages a marine surveyor that they should recognise they are employing and instructing a professional, arguably no different to appointing an accountant or solicitor for example. The article enforces the point that as with any professional in any sector, an appropriate fee is payable for their services. The press release is published in full as follows:

"Pause for a moment and ponder this question. How much is your life and your safety at sea worth? Most people would say it is priceless and impossible to put a value on. And yet many people seem to misunderstand the worth, value and principal role of a marine surveyor, whose very job it is to ensure your safety at sea by surveying, inspecting and reporting on your expensive, potential new purchase. Instructing a marine surveyor to work on your behalf should never be seen as a distress purchase where price is the all-important factor.

So, if you are about to invest a five or six figure sum let's say, why would you be concerned about a few hundred pounds for a survey to be undertaken by a professional to ensure the vessel is sound and fit for purpose and worth its price? In reality a survey

is one of the best investments you will make as part of your boat or yacht buying process.

Let's explore further. Marine surveyors come in all shapes and sizes and from various backgrounds with a huge variety of different skills sets. However, as professionals they are bound by a common code of conduct, quite often accompanied by a passion for their work. By using his/her skills, knowledge and forensic expertise, he/she can determine if you are about to make a serious and potentially financially disastrous mistake, or not. So why would you not pay a fair price for this invaluable service?

As a provider of a highly technical, professional service, it could be argued that a marine surveyor is no different from professionals in other industry sectors who have learnt their trade; e.g. an accountant, a solicitor or a financial adviser. They provide excellent services and charge an appropriate fee for them; therefore you should not expect a marine surveyor to be any different. In many cases a marine surveyor has cut his/her teeth and learned their profession over many years.

So what tips and advice can be offered when you need to instruct a marine surveyor? There are plenty to choose from and individual standards vary for sure.

CHOOSING A SURVEYOR THAT'S RIGHT FOR YOU

Instructing and engaging a marine surveyor, even for an experienced and knowledgeable yachtsman, or boater, can be daunting, let alone for a first timer. Logically, many people, although by no means all, will choose a marine surveyor based on location. It pays to shop around too as prices can vary, but beware – someone who is considerably cheaper than the rest may not be the best and, as in most walks of life, you generally get what you pay for!

A good tip and starting point is to only engage a marine surveyor who is a member of a professional body, or specialist surveying membership organisation. There are several in the UK and around the world and some (although not all) vet their members prior to granting membership. It is probably wise to avoid those who are not part of a recognised marine surveying organisation.

It is essential to choose a marine surveyor who has the right skill set and competency to survey your particular vessel and to successfully fulfil your brief and instructions. So, for example, if you are planning to purchase a heritage, wooden boat, choosing a marine surveyor who specialises in modern, production, GRP yachts, will not be the right surveyor. A quick check on the marine surveyor's web site should give you an indication and a listing on one of the professional institute or surveyor membership web sites can also help. Ask about his/her experience of handling projects similar to yours. The sometimes misused phrase 'caveat emptor' - the concept that the buyer alone is responsible for checking the quality and suitability of the service before a purchase is made – most certainly applies here.

HOW CURRENT IS THE MARINE SURVEYOR IN THE MARKET?

Technologies are changing fast. New models come on to the market regularly, some boasting the latest technological developments. New composites and materials are being brought to market all the time too. Are you sure that your chosen marine surveyor is equipped to deal with these? The International Institute of Marine Surveying helps to make this a little easier. Those members who are up-to-date with their continuing professional development are highlighted with an approved roundel on their web site listing.

HOW MUCH SHOULD YOU PAY AND WHAT ARE YOU BEING CHARGED FOR?

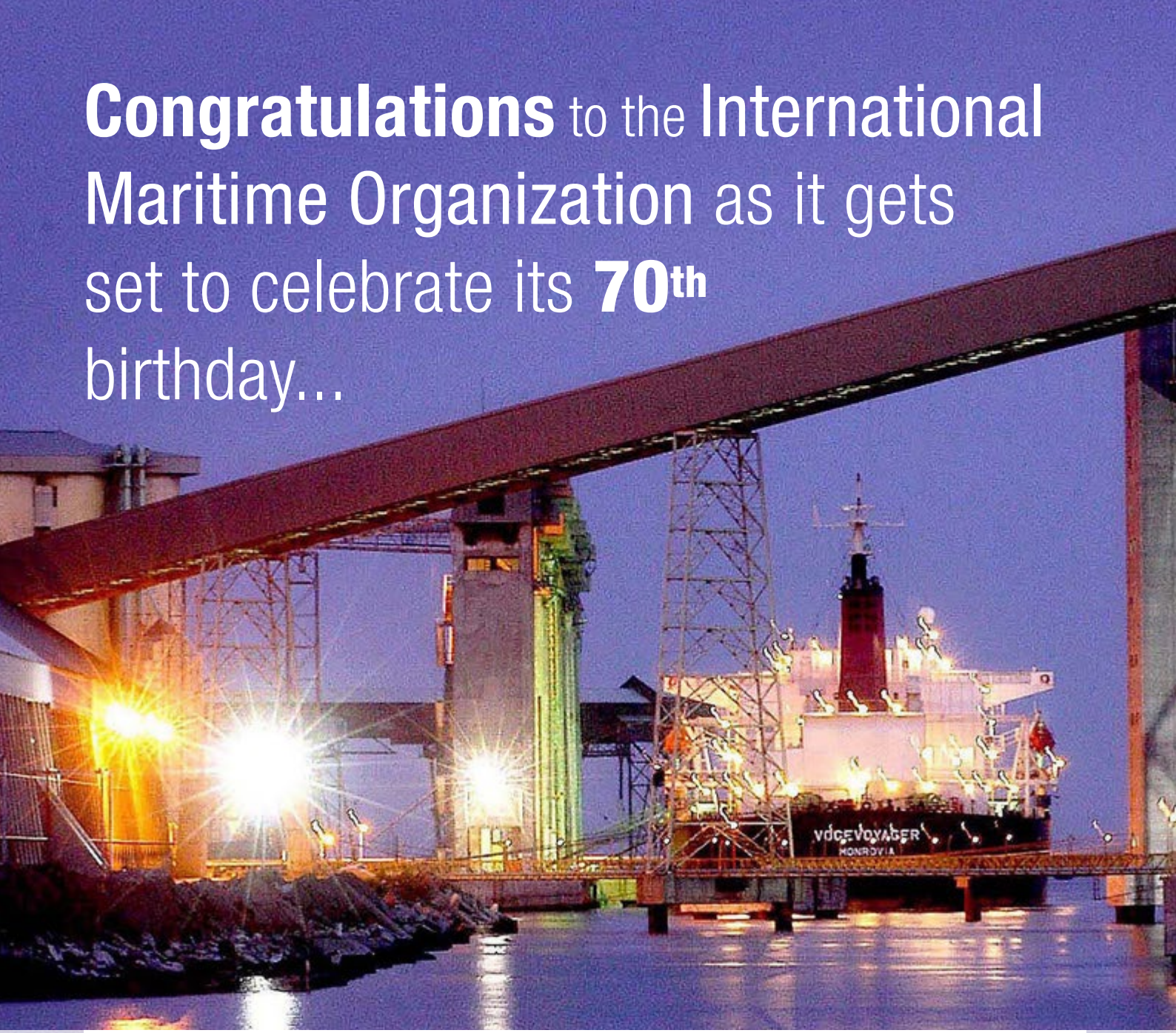
There is no fixed price for a survey and you will find marked variations from one quote to another. Sometimes you will be quoted a price per foot, or per metre. Others will quote a set price for the job. Every surveyor has their own methods and ways of working. One good piece of advice is to ensure that once the survey is underway, you and/or the vendor are not present as distractions may cause the marine surveyor to miss something. They need to concentrate and focus, so whilst it is understandable that you want to be on hand and are eager to know the outcome of the survey, the best advice is to remain absent and let the marine surveyor complete the job in isolation.

As a rule of thumb for a medium sized, production yacht, expect a marine surveyor to be on site for most of the day conducting an in-depth survey and gathering the data he/she needs to compile his/her report. Most marine surveyors will spend a further full day compiling their report and recommendations, ensuring its accuracy before submitting it to you. So, you are paying a professional practitioner for two days of his/her time.

IN CONCLUSION

Being a marine surveyor can be a challenging, tough and uncompromising job at times. Once instructed every marine surveyor will want to deliver the best possible survey and report on completion of the job. However, not always will you like their findings and recommendations, and as with any other professional in other walks of life, sometimes they must deliver bad or unpalatable news. But that is always preferable to knowingly letting someone put to sea in a vessel that is not fit for purpose, or which may not cope with the extreme demands of the sea, potentially jeopardising your life and property."

Congratulations to the International Maritime Organization as it gets set to celebrate its **70th** birthday...



IMO
OUR HERITAGE
BETTER SHIPPING
FOR A BETTER FUTURE
70

In March 2018, the International Maritime Organization (IMO) will celebrate 70 years since the Convention establishing the Organization was adopted.

IMO is a specialised agency of the United Nations, which is responsible for developing measures to improve the safety and security of international shipping and to prevent pollution from ships. IMO was established by means of a Convention adopted under the auspices of the United Nations in Geneva on 17 March 1948 and met for the first time in January 1959. The IMO's objectives can be best summed up by its slogan: ***Safe, secure and efficient shipping on clean oceans.***

IMO currently boasts over 170 Member States. IMO's governing body is the Assembly, which is made up of all the Member States and meets normally once every two years. It adopts the budget for the next biennium together with technical resolutions and recommendations prepared by subsidiary bodies during the previous two years. The Council of 40 Member States elected by the Assembly acts as governing body in between Assembly sessions. It prepares the budget and work programme for the Assembly. The main technical work is carried out by the Maritime Safety, Marine Environment Protection, Legal, Technical Co-operation and Facilitation Committees and a number of sub-committees.

Mr. Ove Nielsen (Denmark), the first Secretary-General from 1959 to 1961

Mr. William Graham (United Kingdom) served as Secretary-General from 1961 to 1963 (seen here with the IMCO Librarian, Miss Armstrong)

To mark this auspicious occasion and celebration, IIMS Chief Executive Officer, Mike Schwarz, poses the questions as IMO speaks exclusively to The Report Magazine.

Q 1. Congratulations on reaching the milestone of your 70th birthday as an organisation. Looking back in time what were the contributing factors seventy years ago that led to the coming together of nations and the Convention being established?

A. It has long been recognized that the best way to improve safety at sea is by developing international regulations that are followed by all shipping nations. From the mid-19th century onwards a number of such treaties were adopted. Several countries proposed that a permanent international body should be established to promote maritime safety more effectively, but it was not until the establishment of the United Nations itself that these hopes were realized.

In 1946, the Economic and Social Council of the newly established United Nations adopted a resolution creating a Temporary Transport and Communications Commission. This Commission advised that an international organisation should be established to deal with technical matters in shipping.

To determine what format should be adopted for this new body an international conference was held in Geneva between February 19 and March 6, 1948. The United Nations Maritime Conference, as it was called, was held at the invitation of the United Nations Economic and Social Council and concluded with the drafting of a convention establishing the Inter-governmental Maritime Consultative Organization (or IMCO as it would become known as) and adopted a draft agreement on relationships with the UN. It also established a Preparatory Committee to serve as an interim body for making preparation for the first Assembly.

This first conference was attended by representatives from 32 Governments together with four observers.

It took a further ten years for the convention to receive sufficient ratification to enter force, but this milestone was achieved in 1958. The first meeting of the Organization therefore took place in January 1959.

Q 2. What are the key challenges for IMO to consider to ensure it remains fit and relevant for the next 70 years in a rapidly changing marine industry?

A. Last year IMO adopted a new strategic plan for the six year period 2018 to 2023. Part of this was a mission statement, which confirms that IMO will "promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation", and a supporting vision statement which says IMO will "uphold its leadership role as the global regulator of shipping".

More specifically, the plan enshrined seven specific strategic directions, namely: improve implementation, integrate new and advancing technologies in the regulatory framework, respond to climate change, engage in ocean governance, enhance global facilitation and security of international trade, ensure regulatory effectiveness, and ensure organizational effectiveness.

The seven strategic directions are paramount but the Organization's strategic plan also refers to a number of other vital areas that will underlie its work in the coming period. These include the needs of developing countries, especially those of small island developing States and least developed countries, the competence and professionalism of personnel employed or engaged in the maritime sector, the needs and wellbeing of seafarers, the promotion of gender equality and the empowerment of women, achieving the 2030 Agenda and the Sustainable Development Goals and collaboration with other bodies in the United Nations system.

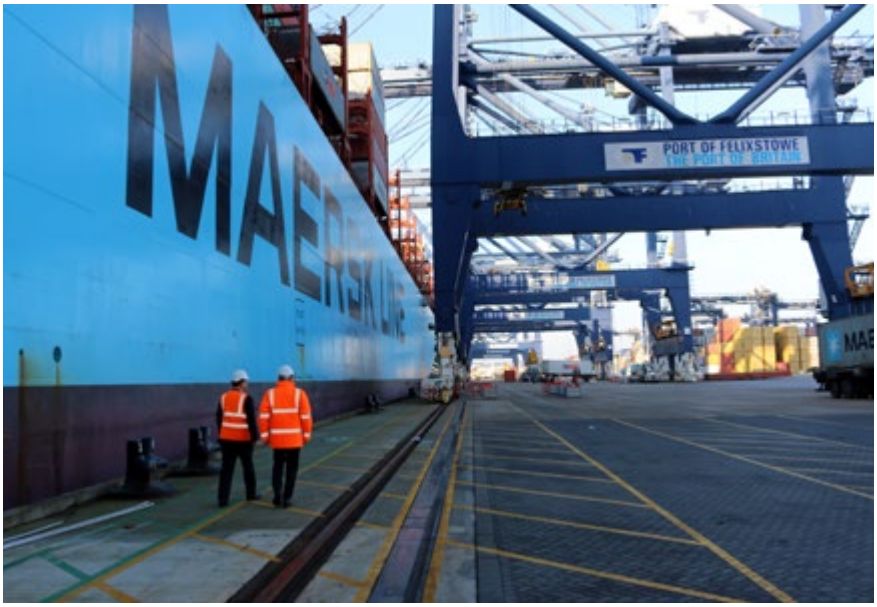
Q 3. Like most bodies of its type and partly because of its committee-based structure, IMO cannot respond in a flash to effect changes. How much of a hindrance and frustration can this be?

A. The structure of IMO ensures that all member states are equal when it comes to developing, adopting and amending measures. Each member has a single vote and none of these has any additional weight. The aim at IMO is to adopt measures by consensus. Consensus may take time to be established, but it has the advantage that measures adopted in this way have a far better chance of widespread implementation that those adopted by a vote. Another advantage of IMO's structure is that it avoids the possibility of "knee jerk" reactions, which experience suggests do not always prove to be the best. And when it needs to, IMO can respond very quickly to events. Perhaps the most striking example of this came after the September 11 attacks on the United States in 2001. In November 2001 the IMO Assembly adopted a resolution to review measures and procedures to prevent acts of terrorism against ships; during 2002, IMO convened an extraordinary session of the Maritime Safety Committee and two working groups on maritime security as well as two full meetings of the Committee itself. All this activity meant that a Diplomatic Conference was able to adopt several new measures, including the comprehensive International Ship and Port Facility Security Code, in December 2002 – a little over a year after the dreadful incident which triggered them.

1959 IMO Assembly

Her Majesty, Queen Elizabeth II, comes to Albert Embankment to officially open the building in 1982.

Sub-Committee on Ship Design & Construction (SDC)



World Maritime Day theme for 2017: "Connecting ships, ports and people".

Q 4. We continue to live in a disharmonious world in 2018. What measures, if any, can IMO do to bind countries together through the common bond of the sea and the continuing need for shipping?

A. As part of the United Nations family, IMO is actively working towards the 2030 Agenda for Sustainable Development and the associated Sustainable Development Goals (SDGs). This Agenda calls for action by all countries to eradicate poverty and achieve sustainable development by 2030 world-wide – and the SDGs are seen as an opportunity to transform the world for the better and leave no one behind. Most of the elements of the 2030 Agenda will only be realized with a sustainable transport sector supporting world trade and facilitating global economy.

Billions of people all over the world rely on maritime transport in their everyday lives – even though they may not realise it. As the most cost-effective and fuel-efficient way to carry goods, shipping forms the backbone of world trade. It provides a dependable, low-cost means of transport, facilitating commerce and helping create prosperity among nations and peoples. By providing improved access to basic materials, goods and products, shipping is expected to help lift millions of people out of poverty.

Shipping is an essential component of any programme for future sustainable economic growth. Through IMO, the Organization's Member States, civil society and the shipping industry are working together to ensure a continued and strengthened contribution towards a green economy and sustainable growth.

Q 5. What one single initiative that IMO has championed and driven through over the years do you feel has probably made the biggest impact on the maritime world and why?

A. Of course there is no definitive answer to this one. IMO measures cover all aspects of international shipping – including ship design, construction, equipment, manning, operation and disposal – to ensure that this vital sector remains safe, environmentally sound, energy efficient and secure. But, given how important the human element is in ensuring compliance and implementation, both on board ships and ashore, many people would point to IMO's collective

work in this area as being perhaps the most influential.

The International Safety Management Code, for example, provides an international standard for the safe management and operation of ships and for pollution prevention. And the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), sets minimum standards of competence for seafarers.

Another initiative that has had a big impact was the introduction of goal-based standards in our technical regulations. The ever increasing speed of computers has opened a new world for designers and researchers and, as a result, IMO Member Governments have started approaching safety from a completely new perspective – one that is goal and performance oriented, rather than the traditional prescriptive approach.

Prescriptive regulations tend to be a representation of past experience and, as such, become less and less relevant over time and can hold back ship designers, who are technically innovative, from being able to properly address future design challenges. As a result, safety regulations need to be frequently updated to keep pace with lessons learned and the latest technologies.

Finalizing the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers was the first step in that direction, establishing for the first time a genuine link between the ship construction rules of classification societies and the statutory rules adopted by IMO. This was not only followed by the Polar and IGF Codes, both written in goal-based style, but also used for the review of the SOLAS Convention.

Mission to Argentina, 5-7th November 2013.

Q 6. Clearly working at sea remains one of the most dangerous professions and almost on a daily basis, one reads about lives being lost at sea, or as a direct result of shipping. What more can IMO do to help to reduce the number of deaths at sea and in the wider shipping sector?

A. Shipping is already subject to a very comprehensive framework of IMO regulations, guidance and best practices designed to make it safer for both seafarers and passengers. As mentioned previously, there is almost no technical aspect of ship design and operation that is not covered. So, looking ahead, the emphasis will be firmly on effectively implementing and complying with this existing regulatory framework rather than developing new measures.

The human element is a complex, multi-dimensional issue that affects maritime safety and marine environmental protection and is always borne in mind when new regulations are developed. It involves the entire spectrum of human activities performed by ships' crews, shore based management, regulatory bodies, recognized organizations, shipyards, legislators, and other relevant parties, all of whom need to cooperate to address human element issues effectively.

A "safety culture" gives appropriate priority to safety and realises that safety has to be managed like other areas of the business. For the shipping industry, it is in the professionalism of seafarers that the safety culture must take root. That culture is more than merely avoiding accidents or even reducing the number of accidents, although these are likely to be the most apparent measures of success. In terms of shipboard operations, it is to do the right thing at the right time in response to normal and emergency situations. The quality and effectiveness of that training will play a significant part in determining the attitude and performance - the professionalism - the seafarer will subsequently demonstrate in his, or her, work. And the attitude adopted will, in turn, be shaped to a large degree by the 'culture' of the shipping company.

One area in which some real progress could be made is in the fishing sector. Fishing is one of the most dangerous professions in the world, yet the international convention developed by IMO to address fishing vessel safety has not received sufficient ratification to enter into force. IMO is currently undertaking a series of seminars and workshops around the world to encourage ratification and thereby enable the convention to enter into force.

Q 7. There seem to be a number of initiatives being proposed and undertaken to clean up the seas of waste, in particular limiting the discarding of plastic into the oceans is very topical. What are IMO's thoughts on this and how can the organisation help to make a difference in the area of cleaning up the seas?

A. Of course, IMO is very aware of this problem and is a partner in the Global Partnership on Marine Litter (GPML), which is managed by UN Environment. IMO is co-lead on sea-based sources of marine litter, together with the UN Food and Agricultural Organization.

Most marine litter, including plastic, originates from land-based sources. Indeed, IMO pioneered the prohibition of plastics' disposal from ships anywhere at sea almost 30 years ago. MARPOL Annex V, which came into force in 1988, prohibits the discharge of all types of garbage into the sea from ships, except in the cases explicitly permitted under the Annex (such as food waste, cargo residues, cleaning agents/additives that are not harmful to the marine environment).

Under the GMPL, IMO has developed a training package on MARPOL Annex V and port reception facilities and a review of plastics in the waste streams under another international measure - the London Convention and Protocol – which deals with dumping waste at sea.

Concern over marine litter was raised again at the IMO Assembly last year, and Member States were invited to submit concrete proposals to the appropriate IMO technical bodies.

Q 8. There would seem to be a decrease in piracy generally, but what is IMO doing to help to eradicate this most unpleasant and vexing activity?

A. IMO has a long history of addressing piracy and, while there is no room for complacency, the collective weight of our activities has undoubtedly helped to curb the activity.

Since the 1980s, IMO has collected and promulgated piracy statistics for analysis so that trends can be identified and appropriate countermeasures developed. In the 2000s, IMO helped broker a tripartite agreement between the littoral states of the Straits of Malacca and Singapore, and has fully supported the information sharing centre established in Singapore under the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP).

More recently, since the focus of piracy activity shifted from Asia back to Africa, IMO has developed guidance on the suppression of piracy for both governments and shipowners/operators, supplemented by industry-developed "Best Management Practices". Guidance has also been issued on investigating piracy incidents, calling on states to investigate and persecute suspected perpetrators, and on using privately contracted armed security personnel, leading to an international ISO standard being developed. IMO maintains close working relationships with naval forces engaged in counter piracy patrols and we also work closely with UNODC and others to help countries develop counter-piracy legislation. IMO has also authorised long range ship tracking data, known as LRIT, to be used by security forces for counter piracy off Somalia.

Regional cooperation among States has an important role to play in solving the problem of piracy and armed robbery against ships. In January 2009, an important regional agreement was adopted in Djibouti by States in the region, at a high-level meeting convened by IMO. The 20 signatory States to the Djibouti Code of Conduct [concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden] declare their intention to cooperate to the fullest possible extent to repress piracy and armed robbery against ships in the region. The scope of the Djibouti Code was expanded to address the full spectrum of maritime threats in January 2017.

Then, in 2013, a similar Code of Conduct for west and central Africa was formally adopted by a Heads of State meeting in Cameroon's capital Yaoundé.

Official photograph of current IMO Secretary-General Kitack Lim.

Q 9. What eye-catching plans and policies is IMO currently working on that will be released in the next three to five years?

A. Again, this is very subjective but undoubtedly one policy area that has already generated a great deal of interest, and will continue to do so, is IMO's work to mitigate the harmful effect of ships' exhaust emissions.

You can think of this as two separate but connected policy areas. One concerns reducing pollutants which can be harmful to human health and which are inherently linked to the sulphur content of ships' fuel and also the emissions of nitrogen oxides (NOX) as a consequence of fuel oil combustion. There is already a global cap of 3.50% on the sulphur content of ships' fuel oil, and a limit of 0.10% in certain designated areas. In 2020, the global cap will be reduced to 0.50% in a move experts have estimated will help save hundreds of thousands of premature deaths. Standards for NOX emissions from marine diesel engines have been made more rigorous, the strongest standards, like for sulphur oxides, being in designated emission control areas.

IMO Member States are also expected, this year, to adopt an initial strategy on greenhouse gas emissions, following the 2016 approval of a "roadmap" on this subject. This would be an important step leading to the adoption of a revised comprehensive IMO strategy on reduction of GHG emissions from ships in 2023. IMO has already adopted mandatory energy efficiency measures for ships, which entered into force in 2013.

Another "eye-catching" topic in the coming years is likely to be autonomous ships. In June last year, the IMO Member States decided to include this issue on the agenda of the Maritime Safety Committee, initially in the form of a scoping exercise to determine how their safe, secure and environmentally sound operation might be introduced in IMO instruments. So clearly the Member States see this as a development that needs to be addressed now. Submissions on the subject were invited to the next session of the Committee, in May this year.

Q 10. There are some hugely disruptive changes currently underway in the maritime world and more likely to follow. The most obvious example, as you have previously mentioned in your previous answer, is autonomous shipping which is moving inexorably in one direction it seems, but also the development and evolvement of green technologies and initiatives. How well placed is IMO to respond to such radical change?

A. Given its Membership of 172 countries (ranging from the most advanced economies to small island developing states), the additional input of more than 60 Intergovernmental organizations and more than 75 non-governmental organizations (representing a diverse range of interests including the maritime industry, seafarer groups and environmental organizations) it is hard to imagine any organization being better placed than IMO to respond to the changing landscape ahead.

IIMS wishes to thank IMO for their openness and willingness to share information and details for this exclusive 70th birthday interview.

IMO 70 OUR HERITAGE BETTER SHIPPING FOR A BETTER FUTURE

Get involved with IMO's events in 2018 to celebrate their 70th anniversary

To mark its 70th anniversary, IMO is hosting a number of events throughout 2018.

March 2018: A ceremony to mark the date when the IMO Convention was adopted will be held at IMO Headquarters.

15 May 2018: A high level forum will be held at IMO Headquarters to discuss the Organization's history, its future challenges and role within the global trade in a changing world.

25 June 2018: The annual Day of the Seafarer.

September 2018: World Maritime Day celebrated at IMO Headquarters and around the world.

During 2018: In conjunction with the International Congress of Maritime Museums a travelling exhibition will tour participating maritime museums.

Full details about these and other IMO events in 2018 can be found on their website at http://bit.ly/2FX9LZ0

Risks and Opportunities in Offshore Wind

BY **JONNY ALLEN**

Jonny Allen joined GCube in 2013 and heads the offshore wind underwriting team, covering all classes of project in Europe and beyond. In addition to underwriting he is active on the Risk Management side on secondment to European utilities and facilitating risk workshops within the industry, as well as chairing the EWTC. Prior to moving over to the London insurance market, his experience was as a systems engineer in oil and gas, in particular new drilling and exploration platforms. Jonny holds a Masters of Engineering from the University of Bristol, with his thesis focusing on Renewable Energy systems.

Installed Capacity in 2016, according to IRENA: **http://resourceirena.irena.org/gateway/dashboard/?topic=4&subTopic=19*

We are living in exciting times. Renewable energy is gaining momentum at a rate of knots, and meanwhile, the advent of new technologies is creating opportunities and cost efficiencies. This is nowhere more evident than in the world of offshore wind, a fast-developing sector forming 15.4%* of the UK's renewables market.

For maritime communities, the opportunities are boundless. Developers of offshore wind farms require the services of workboats, Crew Transfer Vessels (CTVs) and Offshore Energy Support Vessels (OESVs) to support and transfer engineers from shore to site, as well as Wind Turbine Installation Vessels (WITVs) – the purpose of which should be self-explanatory – floating cranes, cable-laying vessels and jack-up barges. Naturally, in addition to these practical considerations, wind farms require marine consultants, surveyors, insurers and other partners to ascertain that projects meet industry engineering and safety standards.

The rapid growth of the offshore wind industry is therefore creating a boom in demand for all of these support vessels, service providers and contractors, introducing a multitude of development and employment opportunities for the maritime sector.

However, with progress and innovation inevitably comes risk, and current threats to offshore wind demand acknowledgment – and engagement – from all those working in the sector. Calculated decision-making and collaborative thinking are required to ensure that the risks are minimised, allowing all to benefit from the 'windfall' of opportunities offered by offshore wind. A crucial factor in

achieving this will be recognising, and benefitting from, 'lessons learnt' – utilising knowledge and experience acquired from both early offshore wind projects and the oil and gas sectors.

FALLING COSTS

The most significant development facing the offshore wind sector in the past year has been that of rapidly falling costs, which represents both an opportunity and a challenge. Offshore wind made headlines in September 2017, when Contracts for Difference (CfD) auctions saw the cost plummet to £57.50 per MWh, close to half of the £92.50 / MWh promised to the contractors of the new Hinkley Point C nuclear power plant. The offshore wind world greeted this decline in cost jubilantly – and rightly so.

However, while falling costs are proof of the enormous strides in economy and efficiency which are being made in the industry, they necessarily pose a challenge to developers of offshore wind projects, who have to contend with squeezed margins. This cost pressure will inevitably be passed down to the supply chain, and it is likely that marine contractors – for example, owners of OESVs – may struggle as developers push for lower prices on contracted work.

From an insurance perspective, this introduces the risk that corners may be cut, or that quality standards may slip as a result of this pressure, resulting in a greater risk to projects. To combat this, it is essential that open and transparent communication is prioritised and encouraged between investors, developers, supply chain workers (including maritime contractors) and insurers. By sharing lessons learnt and communicating pain points, we can deal with these worries and risks, before they have the chance to damage this flourishing industry.

LESSONS LEARNT

Communication is particularly necessary to reduce the frequency of subsea cable incidents, which accounted for 77% of the total global cost of offshore wind farm losses in 2016. The occurrence of these incidents threatens to increase, as the decrease in offshore wind costs manifests itself in financial pressure on project supply chains.

As GCube discussed in our 2016 report Down to the Wire, the causes of cable faults can be grouped into three categories: environmental (for example, an encounter with unexploded ordnance (UXO) or a poor choice of cable route), equipment (for example, substandard design, manufacturing or materials) and installation.

This last category includes causes which are largely attributable to maritime contractors, and which account for the bulk of cable losses. GCube has estimated that 67% of subsea cable incidents are caused by contractor error, which can include anything from deficient planning, and lack of knowledge and skills, to inadequate risk identification and the development of cable loops while laying is taking place. Crucially, one cause is poor communication, highlighting the need for transparency and communication between all parties involved in a project, to ensure its success.

NEW TECHNOLOGIES

Meanwhile, the financial pressure on developers and supply chains is compounded by new, relatively untested, and increasingly ambitious technological developments. Take, for example, the move towards ever-larger

turbines. Turbine manufacturers are investing in R&D to increase turbine capacities, and ambitious offshore projects – such as Moray East, off the north coast of Scotland – now include turbines of 9.5MW capacity and more. And this is set to grow further; the renewable energy developer Ørsted (formerly DONG energy) stated in April 2017 that its zero-subsidy bids at Germany's government auctions were predicated on the assumption that 13-15MW turbines would be available by 2024.

Larger turbines naturally offer the opportunity to benefit from decreased installation costs and economies of scale. However, they also introduce risks as compared to their smaller counterparts, and require serious consideration of whether the infrastructure of a project site is sufficiently equipped to deal with them. This burden largely rests with the supply chain; harbours, ships, and installation contractors must all consider the potential for risk and reward which is inherently tied up with such developments.

For risk managers and advisors, this will also present the challenge of supporting the industry to develop, while minimising risk. Insurers must recognise the necessity of completing due diligence on new technologies and the exposures they introduce. Meanwhile, marine surveyors are likely to feel the strain of working with maritime contractors struggling to adapt to the new demands on their services, as well as a potential increase in the intensity of surveys requested, as these more ambitious projects prepare for construction.

FLOATING WIND

Aside from the pressures caused by increasing turbine sizes, a discussion of current technological developments in offshore wind would not be complete without the inclusion of floating wind technology.

Following six years of successful testing on a prototype off the coast of Norway, the first utility-scale floating wind, Hywind, came online off the shore of Aberdeenshire, Scotland, in late 2017. In the aftermath of this milestone, the market is only set to grow, as an increasing number of developers begin to recognise the benefits offered by floating technology.

Yet the ambitious nature and unproven status of the technology is naturally cause for concern. New risks range from the stability of the subsea platforms to environmental risk from tidal waves, and a lack of precedent has forced developers and engineers, as well as insurers, to apply fixed-foundation rationale to floating projects. This is likely to apply, too, to the marine contractors working on these first floating projects. While there are certainly many similarities between fixed-foundation and floating offshore wind, it is the differences which pose a threat – and which the entire sector needs to remain aware of.

Fortunately, the sector is in a good position to combat these risks – and, additionally, floating wind projects are in a unique position to benefit from lessons learnt in the oil and gas industries. Maritime contractors with half a century's experience servicing offshore oil rigs and drilling platforms will be able to apply their knowledge to floating wind platforms, benefitting from legacy knowledge which adds immense value to projects. From an insurance perspective, when determining premium prices, insurers consider not only quantifiable risks, but also 'soft' assets such as experience and track record. If project developers enlist the assistance of marine contractors with a successful record in offshore oil and gas, the project will be able to secure lower premium prices, loosening profit margins and alleviating cost pressure on the supply chain.

Ultimately, floating offshore wind offers a multitude of benefits, including – crucially – the opportunity to access deeper water sites. At GCube, we insured the very first floating pilot projects off the coast of Japan and Portugal and we're engaging closely with the fast pace of development. Through working to understand the technology, we will be able to support current customers, and new entrants to the market, to the best of our ability.

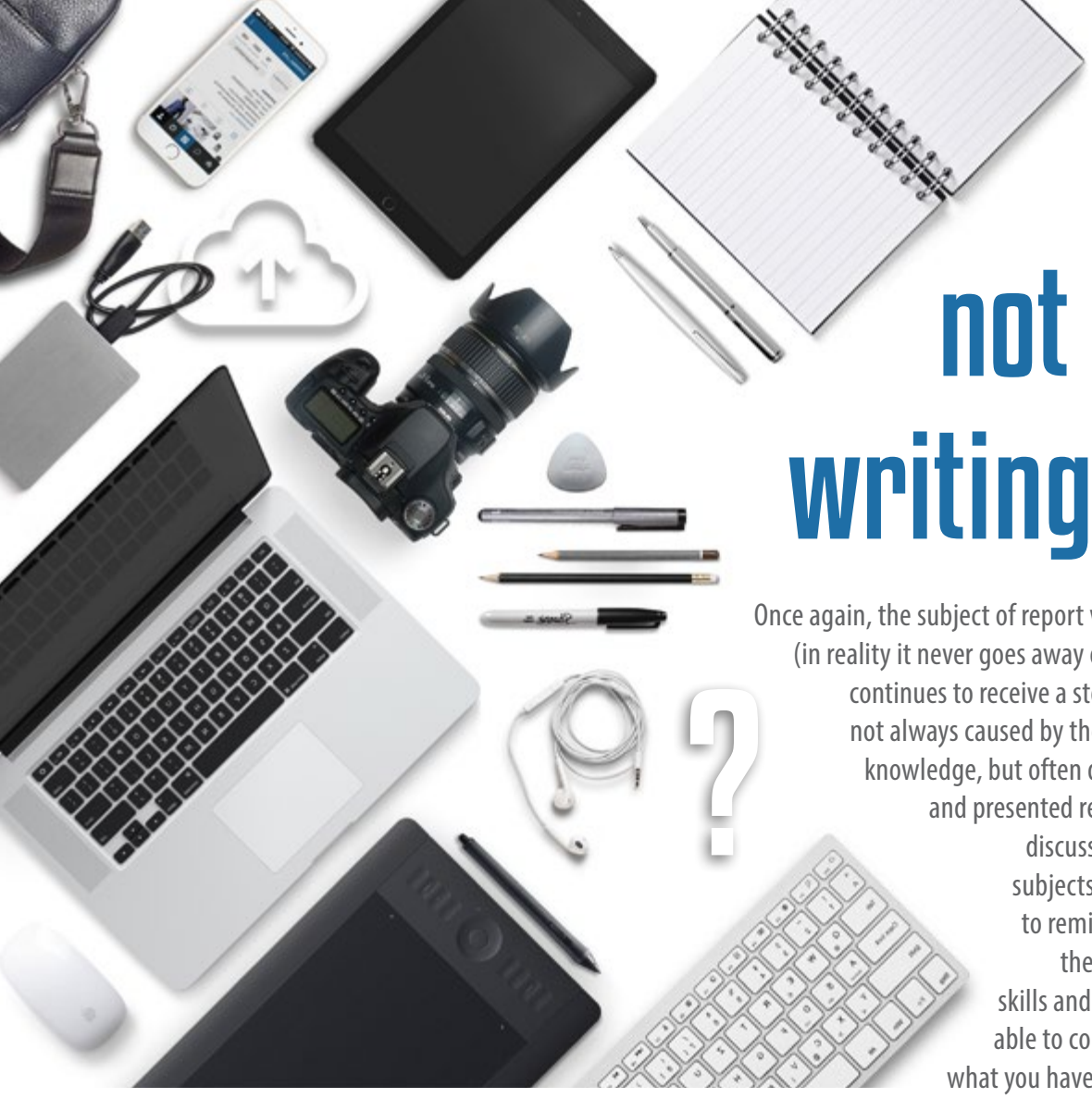
The next big generation of wind energy projects will be not only offshore, but floating, and solid communication between all parties is necessary to protect this nascent – and hugely promising – sector.

OPPORTUNITIES

While risks to the sector demand attention, the offshore wind industry is in a strong position, and has been building on the experience of the offshore oil and gas industries with success. For maritime contractors, the principles of engineering which have created service vessels for oil rigs and drilling platforms can now inform the development of the many vessels working in offshore, and floating, wind.

Crucially, the risks named above are all ultimately by-products of the exciting and ambitious development which is driving the sector forward – and which is simultaneously creating a multitude of opportunities for all those working in offshore wind.

These opportunities include the creation of many more jobs, the chance to expand and gain experience in other areas of operation, and the opportunity to alleviate the pain of job losses associated with the declining oil and gas industries. Assuming that renewable energy is indeed the future, vessel operators and maritime contractors must act on lessons learnt to be in a strong position throughout 2018 and beyond.



Oh no, not report writing again!

Once again, the subject of report writing seems to be topical (in reality it never goes away of course). Put simply, IIMS continues to receive a steady stream of complaints, not always caused by the lack of surveyor technical knowledge, but often due to a poorly constructed and presented report. So here we are again discussing this most important of subjects with some tips and advice to remind surveyors that only half the job is having the technical skills and the other half lies in being able to correctly articulate in writing what you have seen and found on survey.

Everyone writes their reports in a different way and IIMS recognises that each surveyor will do it to suit their own style. The aim is not to make every surveyor conform to an identical style. However, there are some guidance notes that everyone should consider when preparing for survey and then compiling the report.

What is a report?

A good description is: A report is a written document, produced for a clear purpose and to a particular audience. Specific information and evidence are presented, analysed and applied. The information is presented in a clearly structured format making use of sections and headings so that the information is easy to locate and follow.

But before you settle down to compose a report, know when you do your best 'creative' work and understand the importance of the comfort zone. Some people are highly creative early in the morning, whilst others are night owls. Your comfort zone is your psychological state and when you are at ease and in control of your environment. You are likely to have low levels of anxiety and stress and will perform at a steady level. However, familiarity and complacency can be a dangerous place and it is possible you may be prone to making errors, sometimes unwittingly, for the very reason that you are in your comfort zone.

It is possible you may prepare and deliver a better report as a result of stepping out of your comfort zone. Why? Because this raises your anxiety level and generates a stress response. As a consequence this can result in an enhanced level of concentration. Of course too much stress can have an adverse effect on your decision making and report writing ability. It is about getting the balance right. Some examples of being taken out of your comfort zone include a looming deadline, demanding clients and reporting on unfamiliar vessel types. OK that's enough of the theory, let's get practical.

Understand who you are contracting to and who your principle is. It may not always be quite as straightforward as it seems in the first instance. And remember you may unwittingly (and rather depressingly) be writing your report for a judge and jury some years in the future!

Your principle's instructions to you must be clear and concise. If that is not the case, you should not accept the job until they are and you know what is expected of you. Get a clear understanding of what the client is expecting to see from you in your final written report.

Set up good communication from the start, friendly yet professional and efficient at all times. You should ensure the client's expectations are managed from the outset and, crucially, you should be certain the job sits within your competency range and skill set. If that is not the case, the best advice is do not accept the instruction as working outside your area of competency is likely to lead to problems and complications.

Gathering your evidence on survey

Written notes are still considered by many to be the best system and at this time IIMS does not recommend, or endorse, report writing software. Having a scheme to organise your notes is important. Notes on a few scraps of paper are a recipe for disaster. Remember your notes could be admissible in a dispute in the future and may be used in court as evidence, so be sure to store them away safely. And if you are surveying in the rain, a good tip is to use a ziploc bag.

The use of photos in your report which is, remember, a written document, causes much debate amongst the surveying fraternity. Many surveyors use just one image to depict the vessel on the first page of the report and no others.

Taking photos is an excellent way to collect information, but less is more in your finished report. Remember that a photo can tell a thousand words and on occasions you may wish that was not the case with hindsight. Keep the hundreds of photos you have taken for reference and your personal use only in case you are later challenged. When used, photos should be reviewed carefully to make sure there are no issues showing that you have not identified in the report. You are recommended to use a proper camera and not a phone camera. Never edit your photos in any way as they may be required in a court of law as evidence and in that case must be in their original form. That means no cropping, no renaming of the files, and no change of orientation. Just keep them as you took them. And a final comment on photos. In recent months, IIMS has seen a number of reports that are more akin to a photo gallery rather than a written report.

A good, well written report should:

- Reflect your findings in accordance with your client's instructions
- Be well laid out, concise and easy to read
- Be written always in the PAST tense
- Not make assumptions on what may have caused the problem you have found
- State the FACTS only – and only the facts
- Include all relevant information
- Have word clarity meaning numerous photographs or diagrams are not required
- Not require further questions from the client

In your report you should not:

- Offer opinions unless specifically asked for
- Give rumours or hearsay
- Include off the cuff remarks
- Promote spurious information and waffle
- Deliver irrelevant and superfluous information

Recommended report lengths

It is recommended that a normal full condition or pre-purchase survey should run to 20 pages typically and a basic structural report might make 12 pages as a general rule. If your report is longer than this, it is likely you have overstated the problems, or have been waffling. Simple short sentences are all you need so they cannot be misconstrued.

Make sure you always date and sign at the end of the report. Your client is paying for a written report and it is a legal document. A pdf report cannot be used in court without proof of the original. And remember in the UK your client has up to 7 years to bring a claim against you.

Some points to remember

- Be careful in your choice of words and do not use words such as generally, apparently or appeared.
- Be precise. It is not approximately ...it either is, or it is not.
- Always write your report in the past tense.
- If you refer to Standards then you should include these in the appendices.
- Your report should be brief with no waffle.
- Write in good English.
- Beware if you use a previous report as a template as copy and pasting has caught many a good surveyor out in recent months!
- Always get your reports proofread.

Your report should include an executive summary and/ or conclusion. An executive summary is a short section

within a document that summarises the longer report in such a way that readers can quickly become acquainted with the whole report without having to read it all. It usually contains a brief statement of the content covered in the report, background information, concise analysis and main conclusions. It is intended as an aid to decision-making by busy people who may not read the whole report. Busy hull underwriters have been known to turn straight to the summary page!

Let's come back to proofreading in more detail and consider its importance. Proofreading is a skill all of its own. Before you click print or send the email, you must ensure your report has been carefully proofread for grammatical errors, spelling mistakes, punctuation and technical inaccuracies. Remember just one comma in the wrong place can change the meaning of a sentence and could have profound effects. An obvious point, but if you use spellchecker make sure it is the one for the country you are based in. You would be well advised to consider outsourcing the task to a skilled proofreader. You may not always spot your own mistakes, but someone else in your network might.

There is online proofreading software available, some of it free, which IIMS recommends. All can help to improve your text, spell checking, punctuation and will correct any grammatical errors in your reports.

www.grammarly.com/Proofreading

http://www.editorsoftware.com/StyleWriter.html

www.prowritingaid.com/Proofreading/Try-Now

Always present your report professionally as presentation matters and counts for a lot. If supplied in hard copy, spiral bind it - do not staple - and use a front

and back cover. Emailed reports should be in pdf format only that are harder to tamper with rather than a word document. If you do it right it will be the best and cheapest form of advertising you do. But another word of caution, use normal type fonts and not fancy, hard to read ones. The best and most popular options are serif fonts such as Times New Roman, Palatino, Georgia, Courier, Bookman and Garamond.

So what if it all goes wrong?

If your client is unhappy with the survey and/or report:

- Don't ignore the problem as it will not go away.
- Make a plan to resolve the matter quickly before a complaint reaches IIMS as is often the case.
- Contact your insurer immediately for advice.
- Talk to the client and consider mediation.
- Try to come to an amicable conclusion.

Good client care goes a long way and remember excellent communication and politeness is key to resolving issues. Making an enemy of your client can only result in one outcome. And returning your fee is always a better, more palatable and cheaper option than facing lawyers and an angry client in court when the costs truly start to mount up!

In the modern world in which we live in, social media is becoming ever more prevalent and at times a menace. These days your client could leave a damning Google review on your web site listing following what they believe to have been a poor report to vent their anger and publicise their discontent causing you potentially financial and reputational damage. Seems far-fetched? Well it most certainly is not. One IIMS member has had that happen to him recently and the review left was opinion based (not factual) and menacing warning anyone who should read it to avoid this surveyor at all costs. So in this instance, if it happens to you, what can you do and what options are available?

Firstly, you could invite the correspondent to withdraw the comment immediately, especially if it is not factually correct. You may consider writing directly to Google and asking for their help. Taking legal advice may be necessary and given that you will know the identity of the person who has left the bad review, you could threaten to sue them for defamation of character unless they withdraw it. And as a last resort you could remove your website from Google taking with it the bad review, but this is not recommended.

In conclusion, just remember this simple rule when writing your reports. Tell them three times.

Tell them what you're going to tell them (your introduction)

Tell them (the body of your report)

Tell them what you told them (your conclusion and report)

This article is an extract from the three-hour online Report Writing course, broadcast by IIMS two or three times a year. If you want to brush up or improve your skills in this area, watch out for details of the next one.

ESTIMATING A SMALL CRAFT'S STABILITY BY MEANS OF ROLLING PERIOD TESTS

BY **JEFFREY CASCIANI-WOOD** HONFIIMS

> "The metacentric height is the lever by which the sea rocks the ship."
> Kenneth Barnaby

When carrying out the survey of small craft for whatever reason, the marine surveyor must always bear in mind that, among the many factors that determine whether or not she is seaworthy is an adequate metacentric stability. To determine that accurately requires a full inclining experiment and a considerable amount of detail about the vessel's hull form that is generally not available at a pre-purchase or similar stability. This method described here gives a simple rule of thumb by which a marine surveyor may make a sufficiently adequate guesstimate of the vessel's stability from which he may make a decision as to whether or not he should recommend an inclining experiment. The evaluation of a number of inclining and rolling tests according to various formulae shows that the following gives the best results and that it has the advantage of being the simplest:

$$GM_o \approx (k_{RP}B_{WL}/T_R)^2 \quad \text{m} \quad (1)$$

where

B_{WL}	=	waterline breadth	m
GM_o	=	initial metacentric height	m
T_R	=	rolling period	s
k_{RP}	=	constant (the rolling coefficient)	-

The factor k_{RP} is of the greatest importance (it's about 1.25 for a narrowboat) and it should be noted that the greater the distance of masses from the rolling axis, the greater the rolling coefficient will be. Therefore, it can be expected that:

- the rolling coefficient for an unloaded vessel (*i.e.* for a hollow body) will be higher than that for a loaded vessel.
- the rolling coefficient for a vessel carrying a great amount of bunkers and ballast both groups are usually located in the bottom (*i.e.* far away from the rolling axis) will be higher than that of the same vessel having empty fuel and ballast tanks.

Experiments have shown that the results of the rolling test method get increasingly less reliable the nearer they approach metacentric height values of 0.2 m and below.

For the following reasons, it is not generally recommended that results be obtained from rolling oscillations taken in a seaway:

- exact coefficients for tests in open waters are not available.
- the rolling periods observed may not be free oscillations but forced oscillations due to seaway.
- frequently, oscillations are either irregular or only regular for too short an interval of time to allow accurate measurements to be observed.
- specialized recording equipment is necessary.

However, sometimes it may be desirable to use the vessel's period of roll as a means of approximately judging the stability at sea. If that is done, care should be taken to discard readings which depart appreciably from the majority

of other observations. Forced oscillations corresponding to the sea period and differing from the natural period at which the vessel seems to move should be disregarded. In order to obtain satisfactory results, it may be necessary to select intervals when the sea action is least violent and it may be necessary to discard a considerable number of observations. In view of the foregoing circumstances, it needs to be recognized that the determination of the stability by means of the rolling test in disturbed waters should only be regarded as a very approximate estimation.

Although a vessel may successfully pass a roll test the results of this type of test do not provide a full assessment of a vessel's stability and can, therefore, be misleading. Current MCA guidance on the methods that can be used to assess the stability of small fishing vessels, for example, is not sufficient to provide their owners with the information needed to understand the limitations of the various options available. Like fishing vessels of less than twelve metres registered length, pleasure craft are not required to meet any statutory stability criteria. However, in response to a number of accidents that have resulted in recommendations from the Marine Accident Investigation Branch, the Maritime and Coastguard Agency intends to introduce legislation which will require small fishing vessels of under twelve metres registered length to comply with similar stability criteria to that which already exists for small commercial vessels and the small craft marine surveyor should be aware of that fact. It is also important to appreciate that the virtue of meeting the criterion in only one loading condition does not ensure immunity against capsizing or absolve the skipper from his responsibilities. It has to be assumed that the vessel will maintain adequate stability throughout her whole voyage cycle and that will only be valid if best practices with regard to operation of the vessel, the use of consumables and the stowage of the catch and gear are followed.

The Rolling Period Method

As a supplement to the approved stability information, the initial stability can be approximately determined by means of a rolling period test. Vessels with a high initial stability are said to be stiff and have a short rolling period and conversely, vessels with a low initial stability are said to be tender and have a long rolling period. The following guidance notes describe the rolling period test procedure which can be performed at any time by the crew of a small vessel.

1. The test should be conducted in smooth water with the mooring lines slack and the vessel breasted off to avoid making any contact during the operation. Care should be taken to ensure that there is a reasonable clearance of water under the keel and the sides of the vessel.

2. The vessel is made to roll. That can, for example, be done by men pushing bdown on the gunwale when the boat is at the top of its roll away from them. As soon as this forced rolling has commenced the men should stop and place the vessel allowed to roll freely and naturally.

3. The timing and counting of the oscillations should only begin when it is judged that the vessel is rolling freely and naturally and only as much as it is necessary to accurately time and count these oscillations (approximately 2° - 6° to each side).

4. With the vessel at the extreme end of the roll to one side (say port) and the vessel about to move toward the upright, one complete oscillation will have been made when the vessel has moved right across to the other extreme side (i.e. starboard) and returned to the original starting point and is about to commence the next roll.

5. By means of a stop watch, the time should be taken for not less than six of the complete oscillations. The counting of these oscillations should begin when the vessel is at extreme end of a roll.

6. After allowing the roll to completely fade away, the operation should be repeated at least twice more. Knowing the total time for the total number of oscillations made, the time for one complete oscillation, say TR seconds, can be calculated.

If the measured value of TR, in seconds, is less than the breadth of the vessel in metres, it is likely that the initial stability would be sufficient, provided that the vessel carries full fuel, stores, gear, *etc.* Equally, if it is greater, then the metacentric height is suspect and, for safety reasons, the marine surveyor should recommend a proper inclining test.

The rolling period TR usually increases and the vessel becomes more tender as the weight of fuel, stores, gear, etc., decreases. As a consequence, the initial stability will also decrease. If the rolling period test is conducted under such circumstances it is **recommended**, that for the estimate of the initial stability to be considered satisfactory, the calculated value of TR, in seconds, should not be more than 0.8 times the waterline breath of the vessel, in metres.

The method is suitable for vessels up to about 70 metres length but may not be applicable to vessels with a hull shape that dampens the rolling, for example vessels with large bilge keels or vessels of an unconventional design, such as high speed motor boats.

Stability – Weight Creep

Flooding, foundering and capsizing are all associated with a loss of transverse stability and whether or not a boat has adequate reserves of stability when newly launched, they can be lost through overloading or

ill-considered modifications before she even leaves harbour. While at sea, stability may be lost through water ingress and ice growth on the superstructure may impose additional top weight. In many cases, it will be a combination of factors which will lead to the onset of unstable conditions and, possibly, the loss of the vessel. When working out the maximum load allowed, the marine surveyor must consider weight creep – a problem which is also known as stability creep. Owners also should be warned to guard against such unaccountable gain in weight of a vessel with time; a gain which is due perhaps to rust formation, timbers becoming saturated, coats of paint being added, extra spare parts, old spare parts kept just in case, sludge in ballast and oil tanks etc. It has been estimated that a vessel can gain as much as one per cent in weight and an equal reduction in KG for each year of its life with a consequent reduction of freeboard and loss of transverse metacentric stability. It is good practice, therefore, after a rolling test also to carry out a light weight check.

Light Weight Check

In order to carry out a light weight check it is necessary to measure the vessel's freeboard accurately when she is floating at rest in still water. To be accurate, the measurement has to be carried out directly on at least two clearly identifiable places along each side of the boat making a minimum of four measurements in all. The boat has to be in light condition i.e., with no fuel, stores, fresh water or personnel on board. Direct measurement with a steel tape will be found difficult as the slightest wind will cause the tape to flap about making the process next to impossible. It is recommended, therefore, that the marine surveyor make up a stave such as that illustrated in the Figure 1 below. The angle bracket is screwed to one side and the metre long steel rule screwed to the adjacent side. The bracket can then be rested on the vessel's deck or rail at the point of zero sheer and the height of the deck at side line at that point above the water read off directly. A large section of a translucent plastic bottle cut off and placed round the stave at water level will reduce the effect of any wavelets or ripples to nothing. To use the stave correctly it should be when the vessel is moored but afloat with the marine surveyor standing on the wharf. The offside measurement should be taken with the marine surveyor working from a small boat. Using the stave while standing on the deck and leaning over the side will give a false reading. The freeboard should be read on both sides of the vessel. If the vessel has a load line mark, then the freeboard to that line on both sides should be taken and recorded as well as the actual freeboard at the time of the survey.

It is further **recommended** that a rolling test and a lightweight check be carried out at a pre-purchase survey and a light weight test every five years thereafter and the results recorded in a formal report handed to the owner. A typical such outline report is shown below.

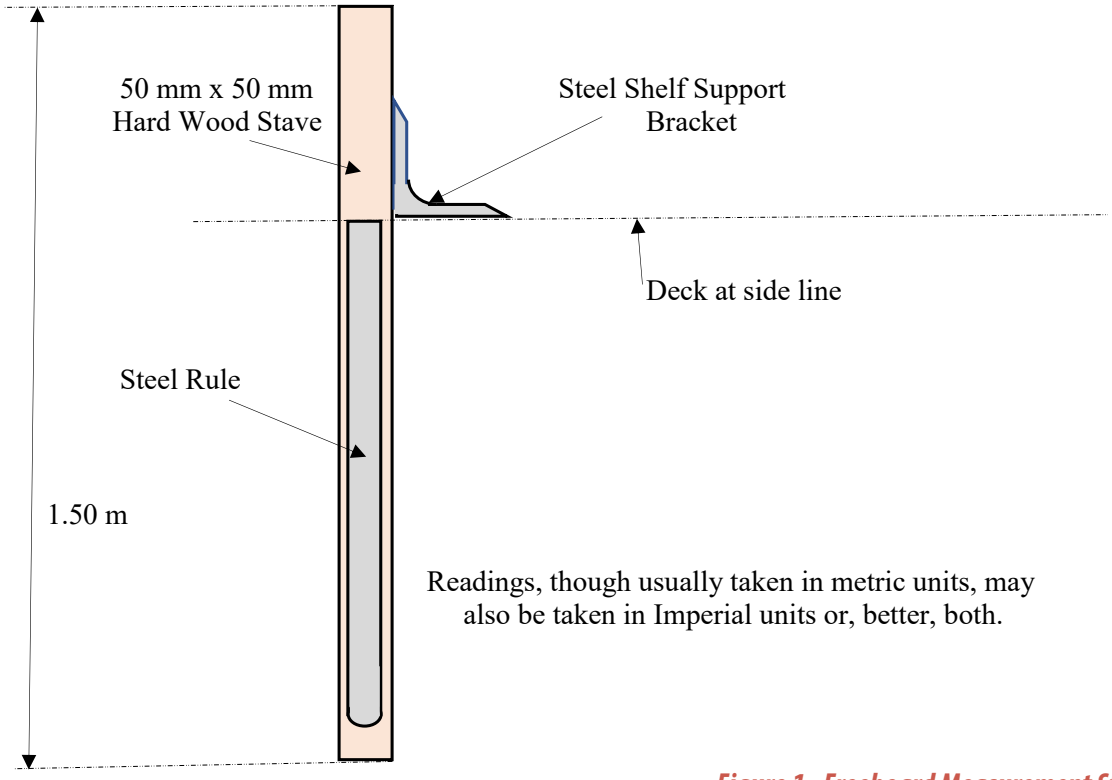


Figure 1. Freeboard Measurement Stave

A TYPICAL LIGHT WEIGHT CHECK REPORT

name and address date

LIGHT WEIGHT CHECK

This is to confirm that, at your request and in accordance with my Standard Contract of Employment and the Engineering Council, FEANI and similar Professional Society Standards of Ethics and Codes of Practice including those laid down by the International Institute of Marine Surveying and the Law Society's Code of Practice for Expert Witnesses and, where applicable, the Rules for Yachts of Lloyd's Register of Shipping Part 1, Chapter 3, Sections 2 and 7 and in accordance with the Health and Safety at Work Act and, subject to the conditions obtaining at the time, the undersigned attended the:

XXXXXXXXXXXX
O.N. XXXXXX

on the XXth XXXXXX, XXXX at the XXXXXXX XXXXX,XXXXXXX and there, in the presence of the owner, carried out a Light Weight check in accordance with OAN572 Revision 03.

Weather Conditions
The weather was fine and there was no wind. The water was calm with zero current. The vessel was moored first starboard side to but later remoored to port side to.

Ship's Condition

Fuel Tank	
F.W. Tank	
Sewage Tank	

There were no personnel on board.

The furniture and the above tank conditions were similar to those at the previous light weight check carried out on the XXth XXXXXX, XXXX.

Freeboard Measurements

The freeboards were measured as follows:

Longitudinal Position	Freeboard Port	Freeboard Starboard	Freeboard Mean	Mean Value XX/XX/XX	Difference cf XX/XX/XX
Forward					
Amidships in line with the centre of the freeboard mark					
Aft					

Conclusion
The freeboard readings taken at this light ship check correlate closely with those previously recorded at the XXXX test. The differences between the two sets of measurements are within the allowable limits stipulated in OAN572 Rev.03. There was no evidence of physical changes to the vessel that may significantly affect her transverse metacentric stability and it was, therefore, considered that the stability of the vessel may be accepted as satisfactory at this verification.*

Marine surveyor's signature *etc.*

*Delete or change as necessary.

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Imaginary checklists and defensive procedures

When safety tools serve another purpose

BY **NIPPIN ANAND** FNI
ØSSUR JARLEIVSON HILDUBERG

An accident happened because a procedure was not followed. This has become a popular belief when analysing accidents in the maritime industry. And the countermeasures to prevent accidents often invoke even more procedures. The underlying assumption is that procedures act as barriers between safe operations and accidents, and hence safety results from following the procedures.

However, we rarely ask why people deviate from the procedures, or how exactly procedures ensure safety. And what is the purpose of procedures in the first place? This paper is an enquiry into procedures, checklists and similar instruments of formal knowledge incorporated in the safety management system (SMS) and their contribution towards managing safety.

Procedures and checklists

The ISM Code requires ship operators to establish procedures, plans, instructions and checklists for all key operations. For the purpose of this paper we will focus on procedures and checklists only. A procedure is typically a message from the managers to the employees about 'How we carry out work in this organisation'. Examples may include procedures for maintenance of firefighting and lifesaving equipment, procedures for cargo operations, procedures for navigation, etc. A procedure may be anything from precise instructions for carrying out a task to a general policy statement; it can be specific or abstract; it can be of good or poor quality. A procedure may serve different purposes or even multiple purposes. It is critical to be aware of these differences when using procedures as a tool for managing safety, and to understand why procedures cannot always be followed.

A checklist, on the other hand, serves as a reminder to ensure that in undertaking a task the essential actions (or checks) have been considered. A checklist could also be seen as a 'precondition' to be met before initiating a task. In the hierarchy of formal knowledge within the SMS, checklists may be used to break down high level procedures into a group of tasks and sub-tasks. For instance, navigation procedures may include a checklist for port arrival and departure, a checklist for navigation with pilot onboard, a checklist for anchoring etc. A checklist is therefore an integral part of a procedure.

Even the checklist for a routine operation such as departure from port appears highly problematic (see case study, below and right). It is apparent that the document serves multiple purposes – an *aide-memoire*, a work instruction, an instrument for allocating responsibility and monitoring the conduct of seafarers, as a record and even as a tool for risk assessment. On the face of it, imperfect checklist design simply reflects the competence of those responsible for implementing the safety management system. However, careful examination reveals that the problem arises due to the multiple and conflicting goals of the safety management system.

Bridge procedures and checklists – a case study

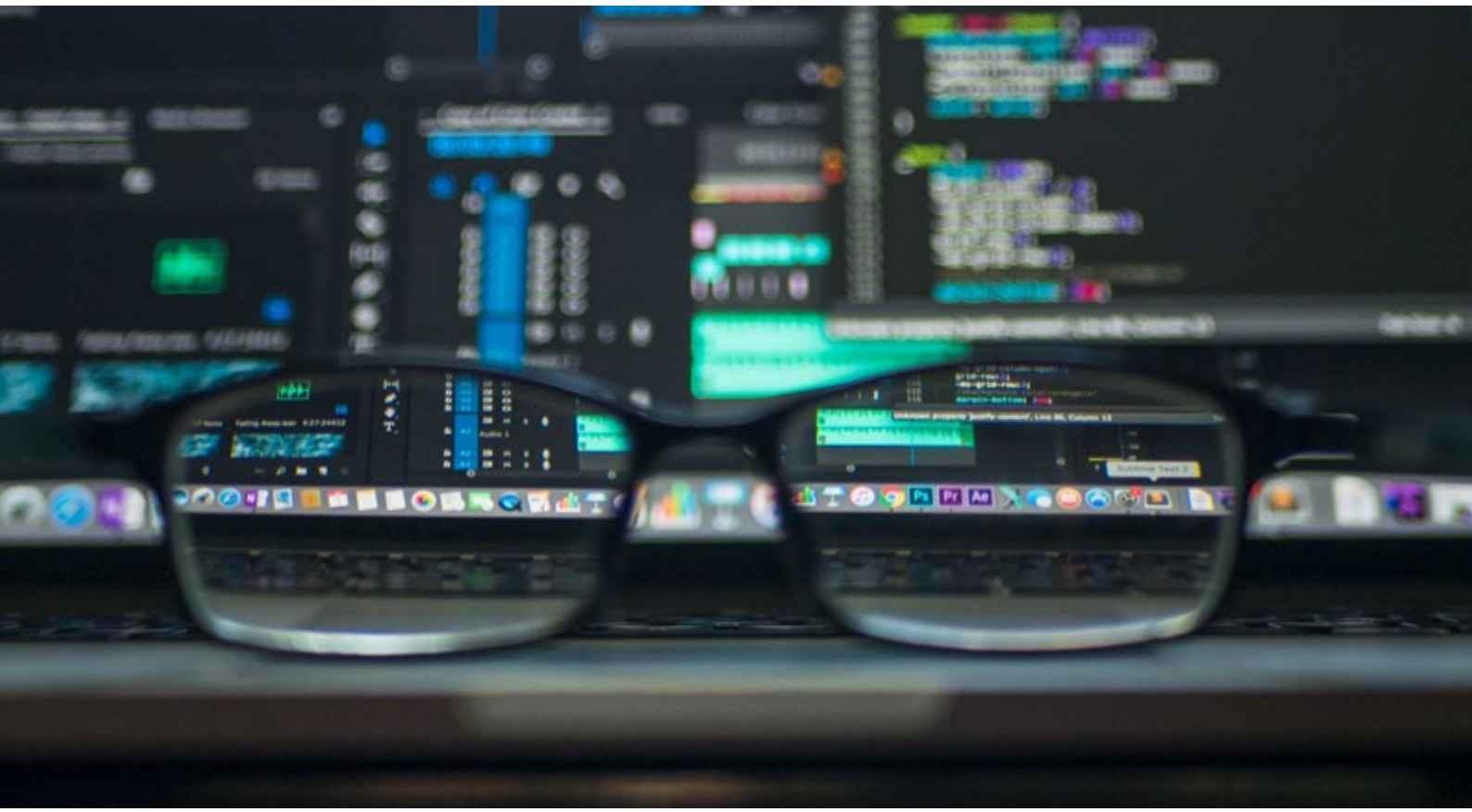
The checklist opposite was collected during an accident investigation involving a small offshore supply ship. It is representative of checklists used for navigation on ships by many companies. As such, it serves as an appropriate case for review and analysis.

The 'Bridge Checklist' shown here was a sub-document related to two procedures in the vessel's safety management system: 'Procedure for the start-up of bridge prior to departure' and 'Procedure for readying the bridge prior to arrival/port'. Both procedures were situated in the vessel safety management system section 7, 'Shipboard Operation', subsection 'Arrival, departure and mooring procedures', and referred to this checklist for arrival and departure from port.

Ideally, the checklist is to be used as an *aide-memoire*. However, in this case it appears that the entire description of starting up and readying the bridge has been transferred from the procedure to the checklist. Thus the checklist has been extended from an *aide-memoire* to a work description.

The checklist consists of eight categories. Not all checks are phrased in the same manner. While some checks specify actions (eg 'port notified', 'PAX boarding completed', 'AIS updated') others merely identify equipment (eg 'GPS', 'Log', 'NAVTEX' and 'Fire alarm and control panel'). There are only two options for completing the checklist – a tick or N/A (not applicable). If a task is not applicable, why should the action appear on the checklist in the first place? Furthermore, there is no room for recording negatively or commenting against an item in case of malfunction or underperformance. The purpose of completing the checks is also unclear. For instance, does the tick confirm that the instrumentation is functional, or is it merely to ensure that it is turned on? And what if the equipment is functional but not up to the required standards of safe operation (for example, the gyro compass exhibiting high error or a radar with questionable performance)? Is the checklist intended to ensure that the tasks have been completed or is it merely for the purpose of record keeping?

Notice also the difference in the nature of tasks included in the checklist. At one extreme, the checklist is intended to ensure that even minor details such as window wipers are included. At the other, the checklist includes a broad-brush statement to ensure 'risk assessment carried out'. Once a detailed procedure has been designed for a routine operation, what is the purpose of incorporating risk assessment? At the bottom is a section to ensure that a responsible person has completed and signed the checklist. What is the purpose of including this section? More specifically, how does this improve the safety of operations?



Bridge Checklist

Complete all sections with a ✓ or N/A

Navigation			
Charts and TECDIS route, *waypoints, and check for dangers*		Weather and Tide *weather forecast and tide table checked*	

Instruments			
Radars (2)		Navigation lights (main/backup)	
AIS updated		GPS	
Compass (Main/GPS)		Binoculars	
NAVTEX		Window wipers	
Echo sounder		Whistle/fog signals	
Log		Fire alarm and control panel	

Communication equipment			
MF/VHF DSC/Radio		PA system	
SAR finder		Portable VHF radios	

Risk Assessment & Toolbox talk			
Risk assessment carried out		Toolbox talk done	

Manoeuvring				
Engine	STB	PORT	Steering	
Main engines			Autopilot	
Aux engines/generators			Centre joystick in zero	
Lift fan engines			Starboard joystick in zero	
Main alarm/control system			Water jets/clutch	
Lift fan panel			SES system/panel	

Communications			
Port notified		Marine coordinator notified	

Passengers		Other	
PAX boarding completed		CCTV cameras	
Check PAX passport			
PA call to PAX		Landing light on foredeck	
Safety video for PAX		'Be seated' light in PAX lounge	

Departure: Date and time: _____ Checked by: _____

Arrival: I hereby Acknowledge that Status is unchanged since departure:

Date & time: _____ Checked/confirmed by: _____

The multiple goals of the SMS

Safety is often perceived as a standalone goal isolated from the wider activities and functions of the organisation. This is evident when designing a 'safety management system' as required under the ISM Code which is primarily focused on ensuring safety (and environmental protection). However, managing safety risks is not the end goal of any organisation. Rather, they are often looking to control the absence of safety for economic and reputational reasons. It is here we need to take a closer look at the ambiguous nature of checklists and procedures.

The paradox of self-regulation

A key purpose of the ISM Code was to move away from a prescriptive regulatory framework established by external authorities towards selfregulation. Instead, the ISM Code would allow companies to design a safety management system that was best suited for their requirements with minimum interference from regulatory and commercial bodies. Ideally this would mean that procedures and checklists were designed to reflect the specific nature of each ship and shipboard operations.

In practice, however, this is far from achievable. For example, the charterers may require a certain task, checklist or an entire procedure to be added to the safety management system. In the example checklist on the previous page, the requirement to carry out a 'risk assessment' or 'toolbox talk' may not be there for operational reasons, but due to a specific legal or contractual requirement. An increased number of checks may even be required in order to look good to the customer. Similarly, if a charterer has requested (but not mandated) a certain checklist or procedure, it may be included in the spirit of 'good customer relationships'. However, since the task was introduced for non-operational reasons, its presence may not always make sense to the seafarer.

This is the paradox of self-regulation, and explains why a safety management system designed to move away from prescriptive regulations and towards goal based self-regulation may not necessarily meet its original intentions.

Responsibility aversion

The ISM Code acknowledges the problem of allocating responsibility for the SMS to the Master of the vessel alone. The Code requires every company to appoint a Designated Person Ashore (DPA) with the overall responsibility of monitoring the safety of the entire fleet. But the allocation of responsibility becomes problematic when the end goal is to manage safety risks. In the event of an accident the decisions and competence of those responsible for managing safety ashore come under scrutiny.

One 'solution' to the problem lies in designing generic procedures and then leaving it up to the seafarer to decide between what is relevant and what could be left out as not applicable (N/A). There are practical reasons for this as well. Since procedures cannot always be designed for every conceivable situation, keeping them generic and open-ended allows companies to reduce the level of documentation within the safety management system. All this creates discretionary space for the end user of the procedure (in this case the seafarer) to manage the gap between what can be thought out and documented in procedures and what really happens in an uncertain, dynamic work environment.

In most cases the seafarer will succeed in bridging this gap effectively. However, in the event of an undesirable outcome such as an accident, the generic nature of procedures also creates ample buffer space for the shorebased office. The investigation inevitably points to the seafarer, demanding that they should make better choices within the same discretionary space, while leaving aside the capabilities and competencies of those responsible for the design and implementation of the checklist. The ISM Code is intended to ensure that the responsibility for safety management is effectively shared between the ship and the company. However, an undesirable outcome may lead to risk and responsibility aversion from the shore side, especially when safety risks are meshed with commercial and reputational risks.

> "When professional judgement is replaced with checklists, seafarers adopt a casual approach to these control measures"

The missing link

A careful examination of the sample checklist shows how responsibility is pushed downstream. While certain checks spell out clear expectations (for instance 'AIS updated'), others are ambiguous and open-ended, such as 'radars', 'GPS', 'auxiliary engines/generator', 'window wiper' and 'auto-pilots'. This missing text raises doubts over what is considered to be a 'completed check'. For instance, if the auxiliary engines fail to perform prior to departure from port, does this mean that the vessel will be held up in port until the problem has been rectified? And what if one of the window wipers does not operate? How is the seafarer expected to react to this situation given the limited options on the checklist – tick off or decide it is not applicable?

By swinging between the two extremities of ensuring that even minor details such as window wipers are included, and at the same time that an overall risk assessment is carried out, the shore based management aims to encapsulate the risk management of everything in one document.

When a seafarer puts their signature at the bottom of the checklist, this is not only an affirmation that they have completed the checks, but also that they take overall responsibility for the imperfect and ambiguous nature of the checklist. In the event of an accident, it is issues such as this ambiguity that become the subject of detailed investigation. The risks arising from an imperfect procedure are transferred to seafarers who may not have had much involvement in designing those procedures in the first place.

'Defensive proceduralism'

The problem is not limited to the ambiguous nature of procedures. It is also the volume of procedures, checklists and tasks that are introduced in the wake of an undesirable outcome. As one seafarer stated:

'We had a communication breakdown with the engine room while departing from port – and the next thing was that two more checks were added to the checklist. They never remove anything, only keep adding.'

On the surface this may appear like an appropriate move to limit responsibility and safeguard the reputation of the company. The danger arises when everyone from the top management down to the seafarer becomes concerned with managing their own risks, at the expense of everyone else's. All this creates a risk in itself.

When professional judgment is limited and replaced with procedures and checklists, seafarers respond by adopting a casual approach towards such control measures. Over time, checklists and procedures are met with a mere 'autotick' response. They move from facilitating the safety of operations towards being record-keeping for audit trails of risk management. Contrary to popular belief, the effectiveness of these documents in preventing accidents becomes questionable.

Barrier or catalyst?

We return to the original theme of discussion – an accident happened because a procedure was not followed. Starting from this point, we get into the mind-set that procedures are intended as 'barriers' (or deterrents) against accidents. We are therefore convinced that procedures should be followed. This paper was an attempt to initiate a discussion on this topic.

By examining a specific case this paper has highlighted that rocedures are not always introduced for safety reasons. Given the conflicting and competing goals of safety management system, procedures may be introduced for economic, legal, and reputational reasons. All this may turn procedures away from their original objective of managing safety risks. Delving deeper into the case, we find that where procedures are abstract and ambiguous, this may be a deliberate move to limit the risk and responsibility of the company. When accidents happen, the imperfect design of procedures becomes a source of individualised risk for the end user.

When the blame game combines with the risk game, the result could be a defensive attitude to both designing and following procedures. This may turn procedures into imaginary documents which have little to do with the realities of work. The role of procedures in such instances becomes even more questionable.

Procedures may be intended to manage several risks; their role in enhancing safety may not always be as straightforward. An accident happened because procedures were not followed. Could it also be that procedures could not be followed?

The checklist is intended to ensure safety – but does it?

ABOUT THE AUTHORS

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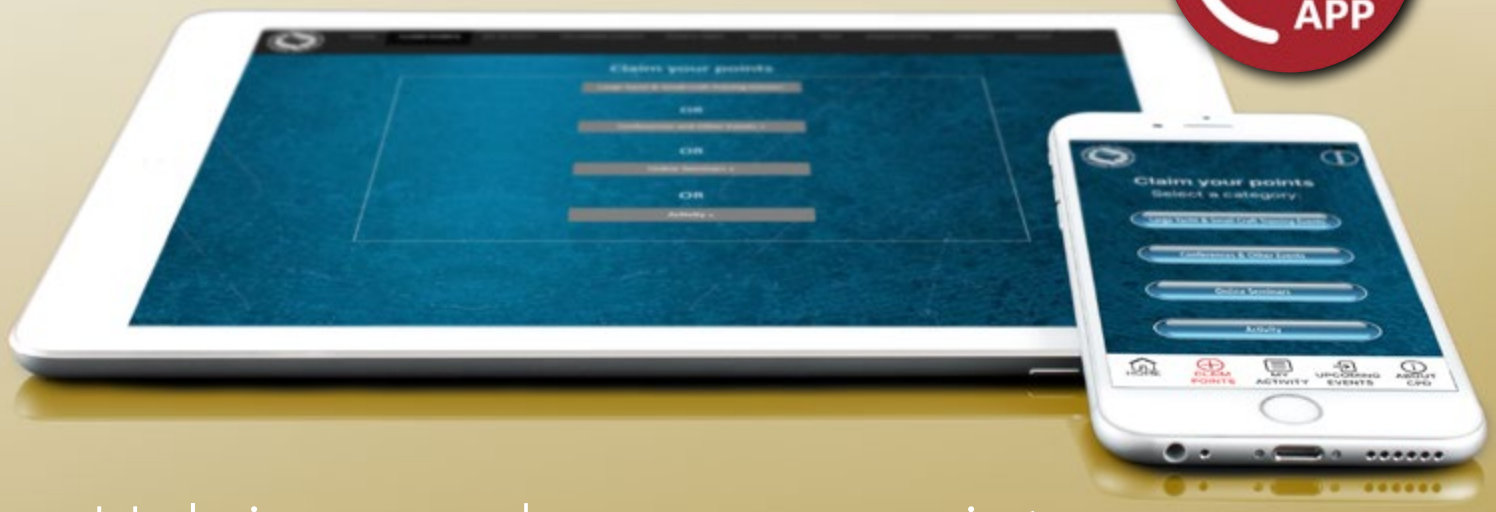
Øssur Jarleivson Hilduberg is Head of the Danish Maritime Accident Investigation Board.

The paper is an edited section of a recent report published by the Danish Maritime Accident Investigation Board (DMAIB) that undertakes a detailed investigation into the role of procedures in safety management system.

The full report can be accessed at **http://bit.ly/2bKdtvA**

The IIMS CPD App...



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Search '**IIMS CPD**' and install the app.
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Web version, the login panel can be found at:
http://cpd.iims.org.uk/CPDWeb/Private/Login.aspx

To see how easy it is to acquire points, you can view the CPD points table here:
https://www.iims.org.uk/membership/continuing-professional-development/

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THE PATH TO DIGITAL CLASSIFICATION

DNV GL is holding a steady course in the digital transformation of its classification services. The only unexpected surprise so far: the speed of the journey.

"We started looking into machine learning as a tool for modernizing classification in 2016," says Morten Østby, Senior Principal Consultant at DNV GL. "When we realized how important this could be, we implemented it in April 2017. Now it is in production."

Such a fast-track realization is fairly typical of the digital transformation sweeping DNV GL's classification business. "We want to move the customers over to a digital interface," says Østby, "where clients and vessels can stay up to date, get warnings, and take advantage of digital storage capabilities – and that's just the beginning."

Østby's ally in the push to modernize class, Principal Engineer Arun Sethumadhavan, emphasizes the main focus of the digital initiative: "We are striving for ease of access and comprehension for customers. Today that means mobile access and expanded functionality."

The jumping-off point for the journey through DNV GL's modern class universe is a personalized online portal that provides customized and secure access to all digital services and support resources. As of November they are embedded in DNV GL's new Veracity platform.

Simply efficient

"Smart survey booking is a major move in streamlining a previously tedious and often inefficient manual task," says Østby. The smart survey booking solution automatically finds the best window for a ship's annual survey, allowing for as many requirements and requests as possible to be covered in one survey to avoid multiple inspections.

"Based on this time window and a list of possible ports entered by the operator, the system also looks for the closest geographical location, accounting for the scope and duration of the survey, port capabilities and surveyor availability, and issues a recommendation. This minimizes both the time involved in booking the survey and the inconvenience for the vessel while keeping the costs down by helping reduce surveyor travel times," Østby says.

An automated version of the application is expected to be available before 2019. "The software will enable us to track ship itineraries and notify them in advance so they can order earlier, which leaves them with a larger time window for planning and owner preparation," Østby points out. A link to all DNV GL-approved service suppliers in the respective port will soon be added, along with a host of additional features designed to improve efficiency and keep the survey costs down.

Learning application

Many improvements are made possible by introducing machine learning, or ML, into the survey booking process. "ML is used to calculate the time required for each survey," says Østby. "When the scope and other parameters are set, the system outputs a time estimate based on historical data."

DNV GL has also incorporated ML into its DATE (Direct Access to Technical Experts) service where a customer's problem description transmitted by e-mail can make it challenging to assign the case to the correct category and expert or section for fast processing. "A discrepancy between the description and interpretation may cause the inquiry to be routed to the wrong expert," says Sethumadhavan. "Now DATE uses ML to vet cases based on historical data and quickly directs them to the proper expert. This cuts down on manual vetting and reduces time wasted on re-routing and finding another expert. We are already seeing that ML-assisted vetting is more than 80 per cent accurate, and it gets better every day."

Each ML-vetted routing receives a confidence rating before being enacted. Any inquiry that has not received a very high confidence rating is returned for manual vetting. "ML is chosen for category assignment only when the confidence level is very high," explains Sethumadhavan. "But by using continuous learning logic, the ML system is constantly refining its selection criteria and improving its hit rates quickly."

But there are other human factors that complicate the advisory process. "While we all use English only, there are different language patterns and rules in different parts of the world," Østby says. "We have had to teach the machines to accept compound words and different spellings. We can even teach them to vet incorrect language." >

REMOTE INSPECTION: EYES ANYWHERE

Ship inspection often poses a conundrum: The object may be a fairly straightforward structure or piece of equipment on board, but human eyes are still required to verify its state. Traditionally that means the human doing the looking has to be on board.

But that is not necessarily true anymore. Remote technology is enabling eyes to see the object of inspection from virtually anywhere in the world. Equipped with something as simple as a smartphone app, personnel on board can connect to the surveyor on land, and the survey is underway.

"The expert steers the input and evaluates the quality of the data," says DNV GL's Senior Principal Consultant Morten Østby. In other words, the "cameraman" on board takes instructions from the surveyor on land who acts as the "director". One key prerequisite: the surveyor must have actual on-board experience. "You have to have been there to be able to know what you are seeing," Østby confirms.

"But the customer must be willing to cooperate," he adds. "Proof of repair or remediation must be provided." For the time being the technology will be used on occasional surveys, not for certification, and possibly for selected follow-up items when the surveyor has left the ship.

Remote inspection could also be used for certification of materials and components. "The first steps have been taken. Many more will follow," Østby assures.

From his land-based computer the surveyor can instruct the personnel on board during a video survey.

> "We want to move the customers over to a digital interface where clients and vessels can stay up to date, get warnings, and take advantage of digital storage capabilities – and that's just the beginning."
>
> **Morten Østby**, Senior Principal Consultant at DNV GL

Reflecting updates
instantly, electronic certificates are accessible around the world.

> E-certificates wanted by many owners

DNV GL has been running pilots on electronic certificates for several years, achieving IMO compliance and winning the endorsement of many flag states. After rolling out e-certificates in mid-October 2017, the first ship with full electronic certification was the LNG carrier *Macoma* (see next page).

"This took some preparation, but it shows just how fast the technology can be taken into use once it has proved viable," says Østby. "Just six weeks after the rollout, 25,000 electronic certificates were issued for more than 3,000 vessels in operation, including many class entries and newbuilds, and the number is growing rapidly every day."

Customers benefit significantly, says Østby, by being able to share certificates globally immediately upon issue. "Ports, vetting organizations, flag states, charterers, buyers, insurers – everyone wants to see the certificates," he says. "Before, owners and captains had to keep track of the original while sending multiple copies to land. Manual updates were an overwhelming task, and the system was by no means secure. Now the signed original is secure but easily accessible in the Cloud."

Using an e-mail subscription function, each modification of an e-certificate triggers a warning to all involved parties, with the verified document attached. Documents are accessible through the DNV GL interface but access can also be granted via any secure public website using a unique tracking number, UTN (see box on next page).

"All transactions are in keeping with IMO guidelines," says Østby. While some flag states have been hesitant to accept the change, the overall response has been positive. "So far more than 80 per cent of statutory certificates have been approved for issue."

Embracing the new digital reality can also be a personal challenge, he notes, and DNV GL is willing to help those unfamiliar or uncomfortable with digital transactions to familiarize themselves with new methods and learn to trust the system.

On the other hand, many owners want e-certification for all their ships as soon as possible. "Owners see the benefit. Endorsements are verified and completed automatically, complex processes such as the frequent certificate updates are automated, and there is no human handling of documents," Østby sums up. "That reduces the quality assurance work to verify certificates."

He notes that the system can also be used offline: "A surveyor can complete the job without online access and issue the certificate when connectivity is available again, either when the ship is within range or when they return to land."

DNV GL is proud to be leading the fast march toward modernizing classification, bringing efficiency, accuracy, and security to certification and survey booking processes that had remained virtually unchanged for decades, if not centuries. **KG**

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Find out more:

on electronic certificates: dnvgl.com/EC

on smart survey booking: dnvgl.com/SSB

on Veracity: veracity.com

ELECTRONIC CERTIFICATION

FROM ROLLOUT TO REVOLUTION IN JUST FOUR DAYS

On 16 October 2017, DNV GL rolled out its IMO-compliant, fully electronic class and statutory certificates across its entire classed fleet – a historic first in the ship classification industry.

Just four days after DNV GL launched the solution, the LNG carrier *Macoma*, built at Daewoo Shipbuilding & Marine Engineering (DSME) in Okpo, South Korea, was delivered to Teekay Shipping with a full set of digitally signed electronic class and statutory certificates.

Hans-Olav Siebke, DNV GL Work Process Manager Newbuilding, said: "For the newbuilding regime, it was our goal to achieve a 100 per cent digital delivery following the rollout of electronic certificates. It was very encouraging and rewarding to see our customer's vessel delivered with a complete set of electronic certificates just four days after their release, realizing the full potential of the system."

Reflecting the owner's perspective, Philippe Wesel, Newbuilding Site Manager, Teekay, said: "We welcome the vessel to our fleet along with DNV GL's brand-new electronic certificate regime. We look forward to utilizing the IMO-compliant electronic regime and the additional DNV GL functionalities to the greatest possible extent to reduce the administrative burden on the ship and shore staff."

The LNG carrier *Macoma* was the first ship delivered with full digital certifications.

At another site in East Asia, Yo Hirokawa, Key Account Manager at the DNV GL Japan branch, was assisting in a class entry at the time of the rollout. With one exception, all certificates for the ship had been issued on paper. The owner had requested full electronic certification if possible.

Implementation lead Arun Sethumadhavan from DNV GL recalls the situation: "I remember very well writing the e-mail response to the owner's request of a complete set of e-certificates. We consider the new regime to be a big step forward, so I was extremely pleased to oblige the owner's wish to receive a complete set of electronic certificates for a class entry vessel within four days of the rollout."

Having received the confirmation, Hirokawa and his colleagues proceeded to reissue all the certificates in electronic, digitally signed format immediately.

On 19 October 2017, Arun Sethumadhavan was able to inform his project team that the first class entry with a full set of electronic certificates had occurred. His summary: "This historic event proves three things: the system works efficiently; it is as fast as we had hoped, if not faster; and our customers want it."

ACHIEVING A PAPERLESS CLASS

DNV GL is the first classification society to achieve full-scale production capability of IMO-compliant electronic certificates. This enables issuance of electronic certificates for the entire DNV GL fleet at the first periodical survey following rollout, subject to flag acceptance.

Shipowners and managers, flag states, port state authorities, vetting agencies and many other stakeholders can benefit from a paperless class and statutory regime allowing certificates to be managed, shared, stored and verified for authenticity anywhere at any time.

Main features:

- Reduced administrative burden saves owners and other stakeholders time and money
- Paper handling is eliminated (printing, scanning, archiving)
- Certificates can be shared with stakeholders using access codes
- Updated certificates are available on the My DNV GL service Fleet Status
- No risk of losing a certificate

Certificates are published on the My DNV GL service Fleet Status on veracity.com immediately upon completion of a survey or issuance by a DNV GL office. They can also be received by e-mail using the subscription feature on the platform or delivered in electronic format to the vessel. Documents are protected against tampering and carry a digital signature and a unique tracking number (UTN) for validity and authenticity verification using an online authentication service available via trust.dnvgl.com by entering the UTN and the ship's DNV GL ID.

Operators can share the secure certificate folder with selected stakeholders using a temporary access code generated on the My DNV GL service Fleet Status.

MICROBIAL CONTAMINATION IN THE MARINE INDUSTRY AND THE BLIGHT KNOWN AS DIESEL BUG

Globally, pressure is growing to increase the percentage of bio-fuel in diesel and to reduce its sulphur content. These dual factors increase the potential for microbial growth (diesel bug) as sulphur curbs bug growth and bio-fuel attracts additional water. The marine industry is now faced with lower sulphur fuel across the board and the potential inclusion of bio-diesel, depending on the source of their fuel.

Fuel systems are a perfect habitat for micro-organisms to live and grow in, which is why it is so crucial for sensible husbandry and regular draining to prevent the build-up of sediments. These harmful micro-organisms, if undetected, can cause blocked fuel filters, wear injectors and stop engines. If they are left for long periods without treatment the 'bugs' can literally eat through stainless steel. Some manufacturers recommend complete fuel tank drains and cleaning on a periodic, prophylactic basis. There are, however, a number of proprietary tests on the market to determine the presence of microbial contamination.

The speed at which diesel bug can multiply is incredible. Microbiological contamination stems from water content in fuel: if you remove the water you remove the breeding ground. It is very difficult to remove all the water from a system, and the industry operators describe

this as the "holy grail" of fuel maintenance. At present it is possible to control the problem with a combination of filtering, regular filter inspection, testing and treatment (including biocides, fuel polishing and mechanical cleaning). This can be time consuming and expensive, but is considerably more straightforward and cheaper than dealing with any resulting tank and engine damage. Testing before bunkering, to avoid taking contaminated fuel on-board, is now an option with the introduction of the new 10 minute FUELSTAT® test.

Being based on a scientific technique called immunoassay FUELSTAT® can be done on board by anyone with the minimal of instruction. There are no special measures that need to be taken for sterility, FUELSTAT® is only looking for microbes that thrive and do damage in middle distillate fuels such as Diesel.

FUELSTAT® also comes with free to download FUELSTAT® Result. Working with most IOS and Android smartphones all the tester does is hover the phone over the test and the result will be given instantly and sent to a secure portal for record keeping. Absolutely no doubt about result, and the possibility of any mistakes in reading test, and paperless record of results.

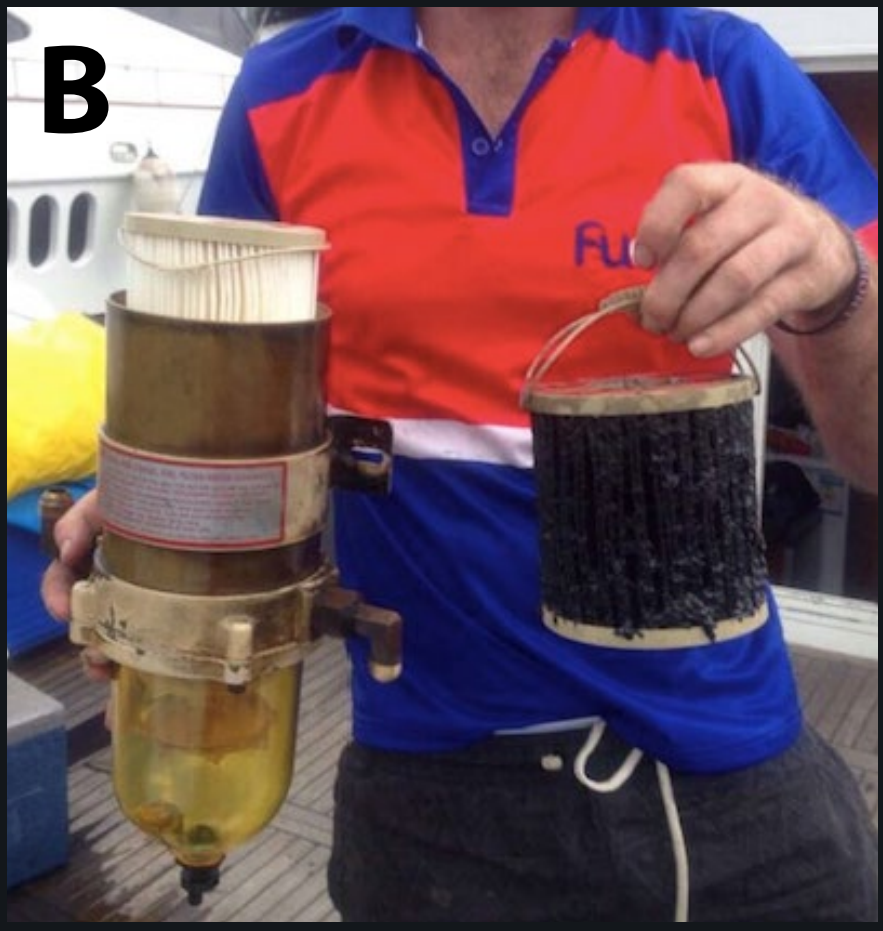
Conidia Bioscience is expanding rapidly into the marine diesel sector, with the FUELSTAT® Diesel Plus test. The onsite fuel test can be run wherever fuel is manufactured, stored, distributed or used and is capable of detecting all known organisms which grow in fuel and in fuel systems. The objective of this test is to provide rapid screening of fuel samples (water in fuel or fuel), giving a quick and accurate assessment of H Res, bacteria & other fungi including yeasts in the fuel tank. This test is unlike current growth-based tests which require a minimum of 72 hours to provide any results. The test measures the amount of active growth in the sample and provides action and alert levels.

Please feel free to contact the FUELSTAT® team on any matter regarding questions about management of microbial contamination of fuel.

GET IN TOUCH

Contact Conidia
on +44 1491 820 9102

Email: **info@conidia.com**
Web: **www.conidia.com**
Social media -
join the conversation ***#dieselbug***



A We thought we would share with you a couple of photographs taken from a marine vessel in Asia, clearly highlighting the issues of Diesel Bug. If it gets as bad as this then there is going to be a significant risk of something breaking down and leading to additional costs to repair. The Vessel was changing filters so often that they wanted a second opinion so requested FUELSTAT to do a test.

B This photo is also of another filter clogged with this diesel bug infestation.

For any further information regarding FUELSTAT Diesel Fuel Plus Fuel Test Kit please do not hesitate to contact my colleague david@conidia.com (Business Development).

CONIDIA

This article first appeared in MARITIME IMPACT 02/2017, reproduced here with permission from DNV GL

***Cezary Galinski**, Senior Principal Surveyor, is Head of the DNV GL drone squad based in Gdynia, Poland.*

THE DRONE SQUAD

With four drone types in its arsenal, DNV GL has adapted its survey technology to various ship structures. Recently DNV GL reached a new milestone with its first offshore drone survey.

12 October 2017 is a gusty day in Gdynia, Poland, and outside the DNV GL station Leszek Alba is waiting for the wind to change. Alba is one of DNV GL's 16 drone surveyors. Today, he is testing the Custom drone's stability in different wind conditions and the stability of the video transmission – an important factor during the inspection of remote structural components in tanks and cargo holds.

18 months after DNV GL carried out its first production drone survey in June 2016, it has become the leading provider in this field. "When we started out, we wanted to find a safer, more efficient and cheaper way of fulfilling the requirements of close-up surveys. During these inspections, a surveyor has to be able to touch a surface to check the condition of the material," explains Cezary Galinski, Senior Principal Surveyor and Head of the DNV GL drone squad. This global team is headquartered in Gdynia but also works out of Dubai, Shanghai, Singapore and Houston. "So instead of taking the surveyor to the component, we bring the component to the surveyor, on 4k, >

Photos: DNV GL

Photos: DNV GL

Wind conditions and the flying distances make offshore drone surveys a particular challenge for drone surveyors.

Watch DNV GL surveyors carrying out the classification society's first offshore drone survey on board Safe Scandinavia.
https://youtu.be/6eAaaRrwgZg

Get more information and contact at:
dnvgl.com/dronesurvey

Photos: DNV GL

DRONE TYPE INFO

FLYABILITY ELIOS

The Flyability Elios drone is enclosed by a round cage, making it particularly robust and collision-resistant. It is used in tight, confined spaces.

high-definition video," he adds. So far the team has conducted more than 25 drone production surveys around the world. Typical ships include tankers, bulkers and, more recently, semi-submersibles and jack-ups. "These are the vessel types that require close-up surveys," explains Galinski.

DNV GL has four drone types in its arsenal: The Custom drone, the DJI Phantom, the Mavic drone and the Flyability Elios drone – each with different capabilities and areas of application. What they all have in common is that they were modified in Leszek Alba's workshop. This cellar room, filled with carefully catalogued shelves, spare cables, batteries, soldering irons and a variety drones in different stages of construction, is where DNV GL customizes off-the-shelf drones to make them fit for inspection purposes.

Making a DNV GL drone

"Commercially available drones are built for users who fly them outside in open spaces and shoot footage of objects below. So, one of the first things we do is change the drone's software settings for adjusting the camera angle. This enables us to film objects that are in front of or above the drone," says Galinski.

Adding protective gear is the next step. "We have to fly the drones close to ship structures, therefore we developed a special cage for the DJI Phantom drone. And we equipped the Custom drone with a protective wire to shield its propellers, the camera and the lighting systems we attach to it to enable it to operate in dark spaces," says Alba. Galinski's team has also fitted the Custom drone with a zoom camera. This means that instead of having to fly within distances as short as one metre from the structure, the drone can take high-definition images from further away.

> "A surveyor has to be able to touch a surface to check the condition of the material. So instead of taking the surveyor to the component, we bring the component to the surveyor, on 4k, high-definition video."
>
> **Cezary Galinski**, Senior Principal Surveyor and Head of the DNV GL Drone Squad

DNV GL's first offshore drone survey

This is particularly important when surveyors fly the drone on the open ocean, and has proved to be incremental to the success of DNV GL's first offshore drone survey, which was carried out on the semisubmersible vessel Safe Scandinavia in July 2017 (scan QR code to watch the video). This tender support vessel (TSV) owned and operated by Prosafe supports Statoil's drilling operations off the coast of Norway. "It was a great opportunity for us to demonstrate our drone's ability to check the condition of remote external components in challenging offshore conditions. The inspection only required the semi-submersible to deballast. We flew the drone approximately 25 metres below the main deck to check the condition of the fairleads and their connections to the columns that hold up the TSV. With wind speeds of about 15 knots, this went very well and the survey showed that the fairleads and their connections were in a good condition," says Galinski.

It was a first for the owner Prosafe as well. "Innovation is one of our core values. We are very pleased to have chosen to try the drone survey, as it helped us optimize our survey requirements and allowed us to save significant amounts of time and money. >

Photos: DNV GL

DRONE TYPE INFO

DJI PHANTOM

The DJI Phantom drone can operate for about 20 minutes and is lighter than the Custom drone. It is used for external surveys but can also be flown inside spaces such as tanks. When fitted with its protective shield it is more resistant to damage.

> Normally this kind of operation would cause a disruption of several days to our client. The drone survey took only a few hours and was just as effective," says Ian Young, Chief Operating Officer at Prosafe.

The challenges

To get to this point, Galinski's team has gone through years of experiments, modifications and practice runs. And even after optimizing the technology, flying drones on maritime structures comes with its own set of challenges. "When inspecting the cargo hold of a large oil tanker, for example, you have to fly the drone about 30 metres away in the dark. In addition, the pilots are surrounded by thousands of tonnes of steel, which means that the drone's GPS and magnetic compass, which usually help it identify its position, don't work – nor does its positioning support. This makes its behaviour somewhat unpredictable," says Galinski. "If you fly a drone in your garden with the position-keeping function enabled, you can push it away and it will automatically return to where it was before. On a ship, any sudden input may cause the drone to become unstable and require the pilot to correct its position manually," he adds.

DNV GL drone surveyor *Leszek Alba tests the Custom drone outside the Gdynia office.*

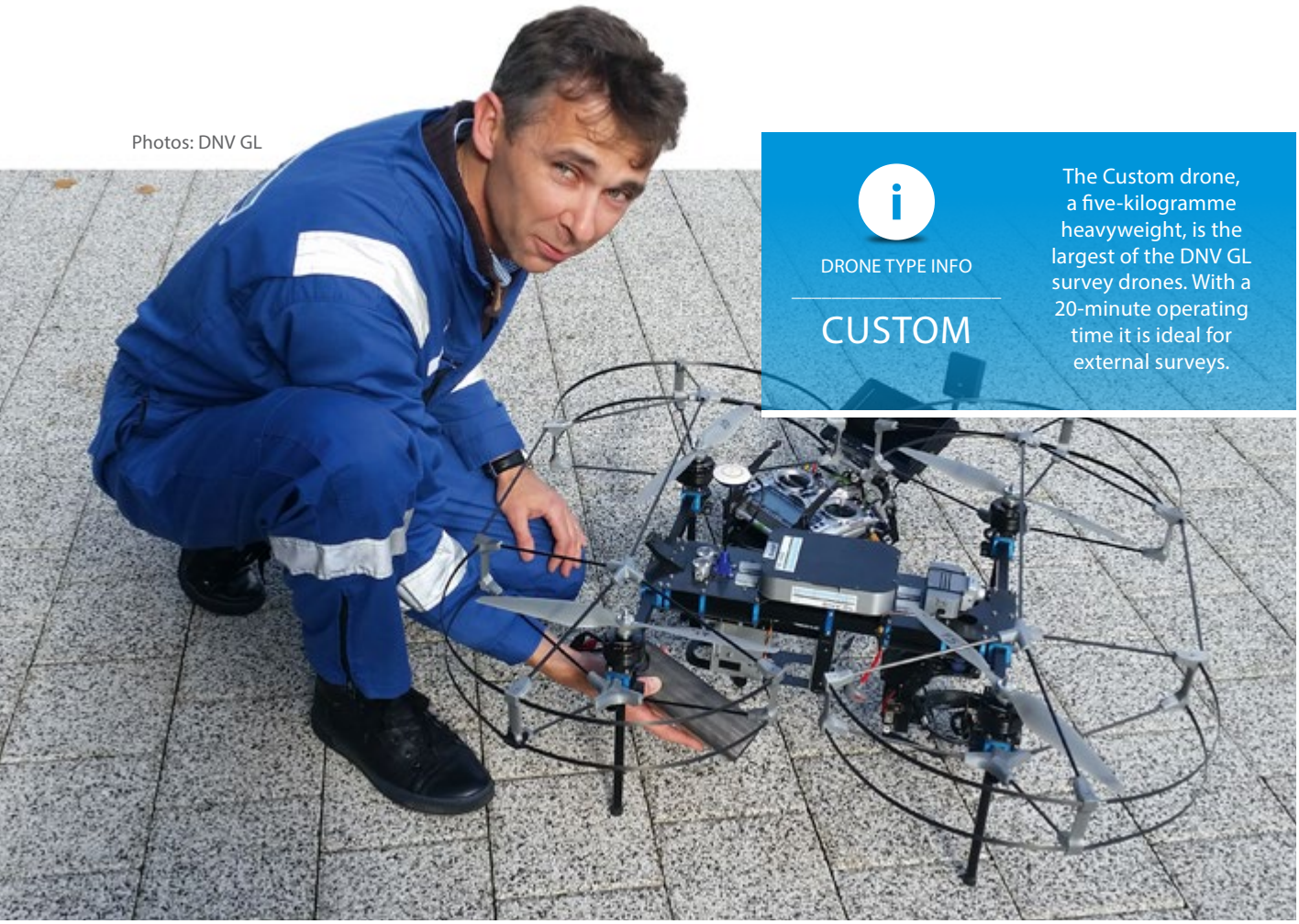
Photos: DNV GL

DRONE TYPE INFO

MAVIC

The Mavic drone is the DJI Phantom's smaller cousin. Its tripod mode slows down its operational speed considerably, making it ideal for slow manoeuvring and close-up surveys, where it gets as close as one metre to the structure.

Photos: DNV GL



DRONE TYPE INFO

CUSTOM

The Custom drone, a five-kilogramme heavyweight, is the largest of the DNV GL survey drones. With a 20-minute operating time it is ideal for external surveys.

During an offshore survey the pilots have to manoeuvre the drone along structures at distances of up to 180 metres. "In this kind of environment the wind is the greatest risk factor. We chose the DJI Phantom drone for the Safe Scandinavia survey, because it can be fitted with a cage. Protecting the drone was important, since we were operating it close to obstacles such as anchor chains and wires. What is great about the DJI Phantom drone is its compact size. It fits into a backpack, making it convenient to take offshore by helicopter," explains Alba. The successful survey demonstrated that the Custom drone was up to the challenge: it not only survived the inspection but also delivered valuable results.

The future of drone surveys

Looking ahead Galinski expects drones to revolutionize the inspection regime. "I am confident we will see the introduction of autonomous drones. This would open up many new possibilities. For example, they could be dropped into inerted compartments where humans cannot enter," he explains. The surveyor could stay outside while the drone would follow a predefined flight path to check the condition of the compartment. "This would enable us to carry out inspections without lengthy preparations, while keeping the surveyors safe," adds Galinski. In future, it might even be possible for an autonomous drone equipped with artificial intelligence to carry out a survey independently, monitored by the surveyor from the shore office using a virtual-reality headset.

For the time being, the autonomous functionality still requires further development. "Outside drones can follow a predefined flight path using a GPS signal. But for confined steel compartments we need to find an alternative approach," says Galinski. In a joint research project DNV GL and the University of Trondheim, Norway, are developing an autonomous drone. With several options under consideration, Galinski expects to see the first autonomous surveys of inerted compartments in the near future. "Two of our drone pilots have completed the BVLOS (Beyond Visual Line of Sight) certification, allowing them to operate drones beyond the line of sight. So while drone inspections remain a niche for now, more advanced models with AI capabilities could soon transform ship surveys. We want to be ready for this." **AJO**

DNV GL Expert, Cezary Galinski, Senior Principal Surveyor
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NEW PRODUCTS

Each quarter The Report brings you an update on some of the new products and innovations to hit the boating, shipping and maritime industry.

Lifecord - a kill cord you will never forget - launched by Landau

Lifecord is a newly designed kill cord providing the certainty and reliability of a tethered connection between a boat's engine ignition kill switch and pilot, ensuring the vessel's engine stops should the pilot be inadvertently thrown from the helm. However, unlike the typical passive kill cords commonly seen, Lifecord is a 'smart' kill cord incorporating detection technology designed to trigger an audible and visual warning alarm should Lifecord be connected to the boat's kill switch but not the pilot, similar to the seatbelt warning in your car.

Lifecord's uniquely designed Key and Clasp connector is comfortable to wear and can be operated easily even while wearing gloves. It also offers a secondary method of pilot connection using an ergonomically designed Lifejacket Key which can be permanently fitted to lifejackets. Pilot change and reconnecting Lifecord couldn't be easier or safer.

Lifecord ensures that should a pilot leave the helm when the boat's engine is ticking over in neutral, they are reminded to reconnect the cord when they return, also ensuring a pilot change results in the new pilot being reminded to connect. It alerts the skipper and other crew members alike, should the pilot not have connected the cord.

Website: **http://www.landauuk.com**

AIS ready lifejackets from Ocean Safety

Ocean Safety's revamped Kru lifejackets are AIS ready with a VHF radio/personal PLB1 clip and a newly-shaped scoop neck design designed to provide freedom of movement with no chafing.

General manager Alistair Hackett says the firm's expanding portfolio, as evidenced by its redesigned Kru range and the launch of Ocean SOLAS Ultralite life rafts, is due to greater synergies between the 3Si Group business units, or which Ocean Safety is part.

Mr Hackett concedes that while the inclusion of electronics in marine safety and the products they supply is crucial, so too is the understanding of the end-user: "Many of our lifejackets, man overboard equipment and life rafts are AIS ready, however the challenge is to ensure customers understand what they're purchasing and how and when this equipment is to be used."

New ultrasonic antifouling product from NRG Marine

NRG Marine's new ultrasonic antifouling product to protect equipment inside and outside the hull has had its production increased.

Soni8 uses ultrasonic antifouling technology to prevent marine organisms colonising solid surfaces that are exposed to raw seawater. With one panel and eight transducers, Soni8 is designed to protect all critical equipment inside and outside the hull.

Darren Rowlands, commercial director of NRG Marine, said: "Anti-fouling is usually associated with keeping the outside of the hull clean, to maintain performance and reduce fuel consumption. In commercial vessels and large yachts, operators also have to focus on maintaining the efficiency of critical onboard equipment, like box coolers, keel coolers and their associated sea chests, pipework and valves.

"If those clog-up with marine fouling, the engine cooling systems will start to fail, water pumps become overloaded and the owner can be faced with some very expensive main and auxiliary engine damage."

Ad Hoc Marine Designs unveils 41m SWATH Crew Transfer Vessel

Ad Hoc Marine Designs has introduced a new 41m Walk to Work (W2W) SWATH Crew Transfer Vessel (CTV), capable of being at sea for up to two weeks with 24 technicians onboard, accommodated in their own individual cabins.

The vessel designer said that the new SWATH CTV, which can also carry any combination of 4 ISO containers, gives operators a better alternative to ordering larger vessels, especially when servicing offshore wind farms built far offshore.

The new vessel is based on the company's Typhoon Class SWATH design that meets significant wave height requirements for future rounds of offshore wind farms in the UK, according to Ad Hoc, who explained that the 41m CTV can run in Hs=3.5m sea heights and adopts the same philosophy of MCS SWATH 2 by going quad drive with four CAT 3512C engines rated at 1,678kW each, giving 25 knots.

"The next round of windfarms and the future vessel requirements for higher wave height and being longer at sea is due to windfarms being placed further out to sea," said John Kecsmar, naval architect at Ad Hoc Marine Designs. "Our Typhoon Class SWATH design is the best one on the market to meet these requirements going forward."

Click for the full story: **http://bit.ly/2ok0ljq**

Smallest ever surface effect workboat

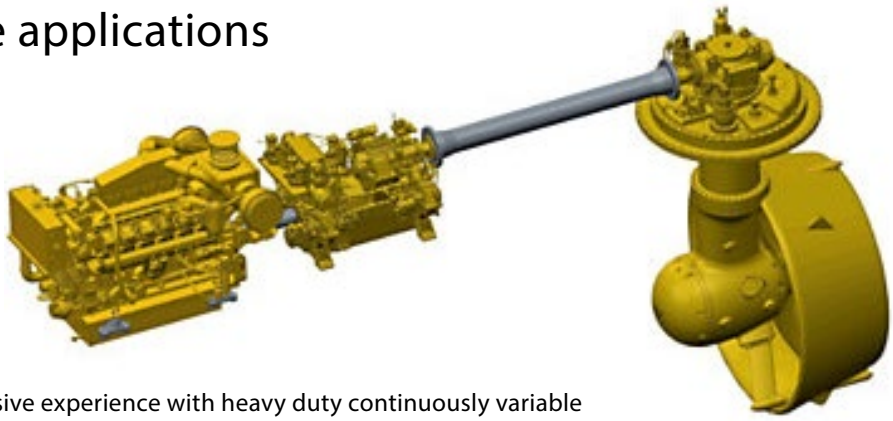
What is thought to be the smallest SES (Surface Effect Ship) workboat is being built in Denmark for operation on wind farms. At just 15.8 metres, this new SES is being built for operators Wind Partner who plan to charter the boat out to operators.

The design for Sea Puffin has been developed by naval architects Espeland & Skomedal (ESNA) of Norway and features a catamaran hull with fabric skirts enclosing the air cushion between the hulls. It is designed to be capable of being launched with a standard 15 tonne single point davit system.

The Sea Puffin is powered by a pair of 230 kW diesels that are coupled to water jets. These will give a speed of 25 knots and this speed can be maintained in sea state 3 with the designers claiming that the air cushion supporting the SES will damp out motions and give a comfortable ride. In addition to transferring technicians to wind farm turbines the SES will also be capable of carrying cargoes.

ESNA claims that in addition to its sea-going capabilities this new daughter craft will offer significant savings in fuel consumption. It will have a range of 150 miles and the vessel will be classed by Bureau Veritas.

Caterpillar Marine to develop advanced propulsion system for marine applications



Caterpillar Marine, partnering with Caterpillar Innovation & Technology Development Division (ITDD), is in the process of developing a proprietary advanced propulsion system for marine applications. The Cat® Marine Advanced Variable Drive™ (AVD™) is a patented system that leverages Caterpillar's extensive experience with heavy duty continuously variable transmission (CVT) technology, advanced controls and power system integration knowledge.

In this joint development, ITDD is leading a cross-functional innovation team to develop and validate a fully integrated marine propulsion system from bridge interface down to the propellers.

"Thanks to the flexibility enabled by the innovative Caterpillar AVD™ technology, the speed of the vessel's engines can be modulated and optimized independently from the speed of the fixed pitch propellers. The speed of the propellers can be varied continuously throughout their full speed range. In addition, the power of the main and auxiliary engines can be channeled independently or jointly to propel the vessel," said Igor Strashny, Caterpillar ITDD Engineering Manager with responsibility for Advanced Marine Propulsion. "These features provide superior vessel performance and maneuverability while facilitating significant improvements in fuel and operational efficiency.

Inspecting hull integrity remotely with a new submersible is now possible with Deep Trekker™

Deep Trekker™ has added to its fleet of portable, robust underwater drone robots; the DT640 Utility Crawler is designed to perform a multitude of underwater tasks.

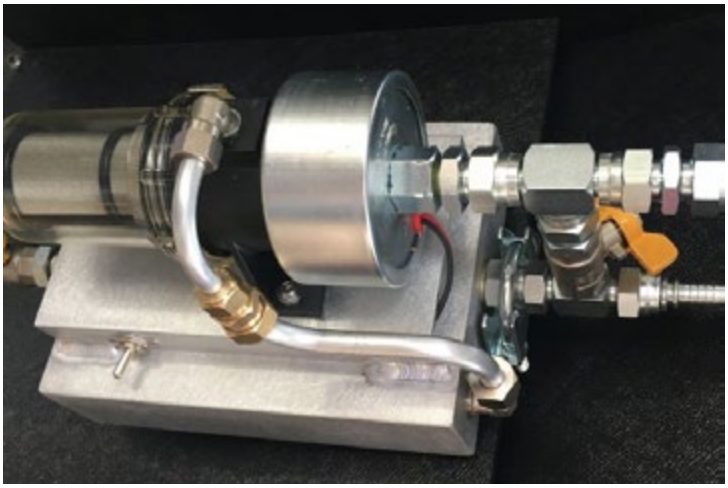
This is a brand new inspection and service robot and is said to be the first three-wheeled vehicle of its kind. Its modular construction allows for the unit to be equipped with multiple operative attachments making the DT640 more than just an inspection vehicle. The Utility Crawler can be outfitted with magnetic wheels, pressure washer, vacuum, thickness gauge and a dozer.

Fixed with an HD camera, magnetic wheels and a multitude of application-specific add-ons; the Utility Crawler is incredibly versatile and easy to deploy at a moment's notice.

The Utility Crawler, designed by Deep Trekker™, is submersible to 50 meters (164 ft.), and houses its own onboard batteries, making deployment easy and quick for tasks such as contraband inspections and testing hull integrity or thickness. Magnetic wheels and various add-ons permit diverse applications such as scraping away marine growth or power washing the hull or examining for invasive species while in port. The Utility Crawler has both military and municipality applications as well.

With magnetic wheels, the Deep Trekker™ DT640 Utility MagCrawler can crawl along vertical angles to inspect the integrity of ship's hulls even underwater. Instead of dry-docking or returning to shore, the crew can immediately inspect the hull if they fear something is wrong, via the live video on the handheld controller.

MarShip launches a static dewatering and fuel polishing unit



The Diesel Dipper removes free water and contaminants from the bottom of fuel tanks with a 12v DC pump. The water and sludge is then drained off in a tank separator before the clean fuel is returned back to the tank through a 40 micron washable stainless steel filter, which polishes the fuel.

MarShip said the unit is designed to keep fuel in good condition and prevent filter blockage. It pointed out that as sulphur levels in fuel fall, the risk of diesel bug increases. The pump operates regardless of whether the engine is running and is suitable for any size engine.

Norsafe launches new partially enclosed lifeboat

Norwegian life-saving systems manufacturer, Norsafe, has announced it has recently developed a modern partially enclosed lifeboat (PELB) that provides a secure and protected means of escape for persons on-board passenger vessels.

The 'Minima 88' is a SOLAS compliant compact 8.8m long boat with a width of 4.25m for 150 persons.

With its signal red coloured canopy, white hull and cool streamlined exterior, the design features a spacious cockpit in the middle, to provide efficient visibility during embarkation with a good view for the helmsman. The forward visibility is also good and a roof hatch in the cockpit provides vertical visibility towards the davits during launching/retrieval.

In addition, the large side doors aid the fast and efficient embarkation of the crew.

Autonomous subsea survey and inspection system launched

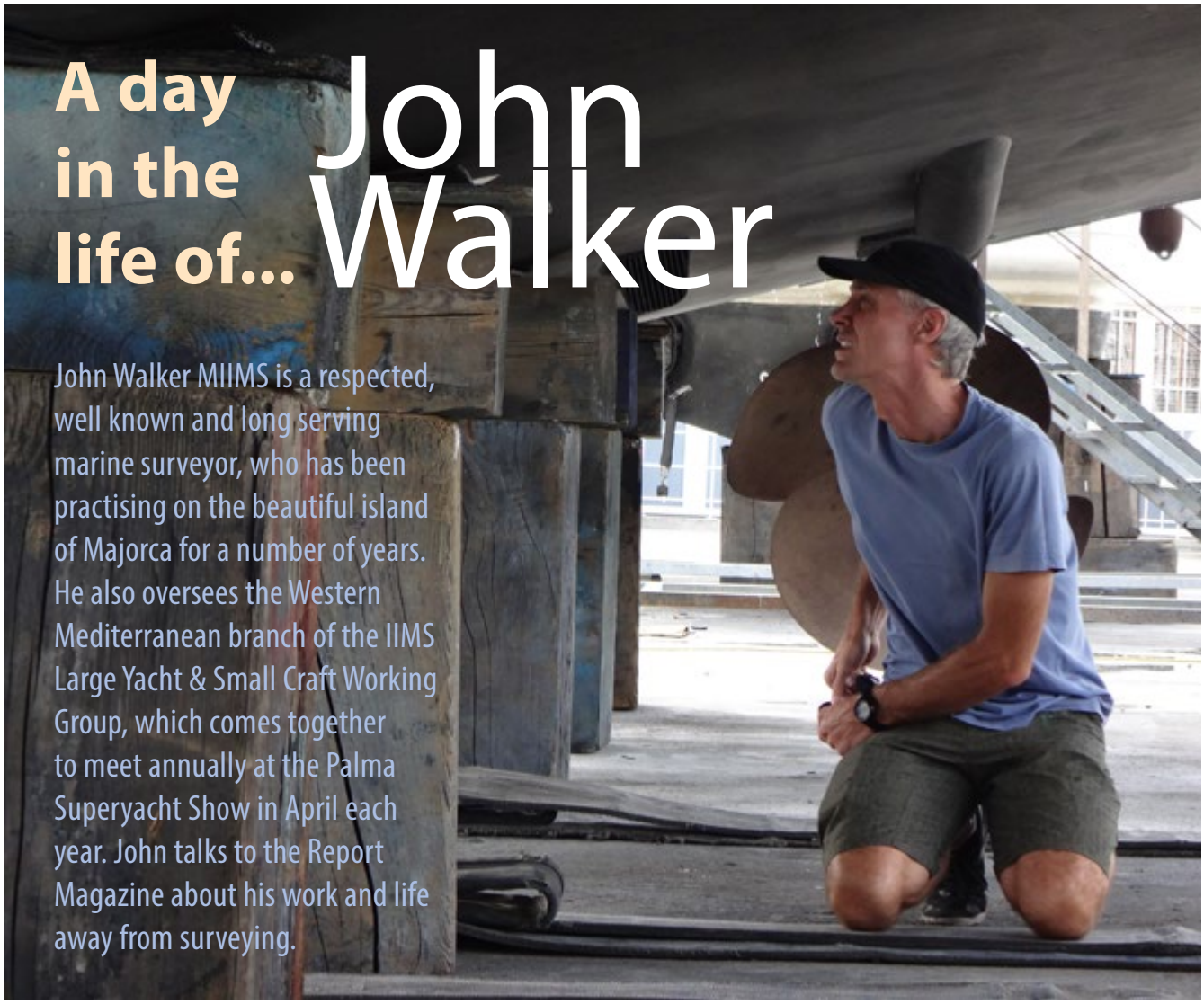
A Darlington, UK-based subsea specialist is developing a docking system to enable autonomous underwater vehicles (AUVs) to remain at offshore wind farm sites without a support vessel. The company claims that the move could shave £1.1billion from the operating cost of Europe's offshore wind farms and would be a world-first in the sector.

Modus Seabed Intervention, in partnership with Osbit Ltd and the Offshore Renewable Energy (ORE) Catapult, is currently trialling the AUV docking station. The design will enable vehicle re-charging, as well as the upload of acquired data and download of mission commands.

The use of AUVs to survey and inspect offshore wind farm subsea infrastructure is a relatively new cost-efficiency measure in this sector. Replacing support vessels with the AUV docking station could further reduce expenditure. In addition to the estimated £1.1billion saving across the current 11GW offshore wind farm fleet over the next 25 years, the scheme will also significantly reduce the need for staff to work in often hazardous environments.

"Since 2012, Modus has been focusing on the development of hybrid AUV systems to be deployed for subsea and seabed survey, and inspection," said Managing Director of Modus and project lead, Jake Tompkins. "Part of our vision is to see AUVs becoming field resident, offering significant cost savings and quality benefits to the markets and our customers."

A day in the life of... John Walker



John Walker MIIMS is a respected, well known and long serving marine surveyor, who has been practising on the beautiful island of Majorca for a number of years. He also oversees the Western Mediterranean branch of the IIMS Large Yacht & Small Craft Working Group, which comes together to meet annually at the Palma Superyacht Show in April each year. John talks to the Report Magazine about his work and life away from surveying.

Q. What is your surveying specialism and what was your route into marine surveying?

A. My first introduction to marine surveying was when I was a deck cadet with BP shipping. I was paired with a surveyor who was tasked with cargo tank structure inspections of the 270000 DWT VLCC I was on. It took us weeks and involved a lot of floating around in a rubber dinghy in the tanks. Hands up other people who have been – "in a boat….. in a boat"? Not many I bet. It was all very interesting of course, and mucky.

The next time I remember being curious about marine surveying was when a SUNSEEKER that I was responsible for was undergoing a pre-purchase survey. The methodology of testing, inspection and reporting meaningfully on such a complex piece of machinery began to fascinate me. I could not imagine the process, the knowledge base required or how to format such a report. Later, I was able to view several pre-purchase reports and then realised (A) that marine surveying was a profession, and that (B) I may have had some of the qualities needed for that profession. I met some of the local surveyors and was not terribly impressed by their competence; back then it seemed it wasn't necessary to be very good. I decided to go to an IIMS meeting shortly after that in the UK to confirm my idea that all marine surveyors were tweed jacket wearing chaps, perhaps little removed from reality, and got a big shock. These people were indeed professionals, hardly any with tweed jackets and if I was going to do this as a job, I realised I had a lot to learn! I signed up for the diploma course and enjoyed soaking up as much knowledge as possible.

Ten years ago I bought the marine surveying company BIMS SL from the French owners, the Heon's. Jacques and Francine stayed on for three years to keep me on the right track, trying to knock some French into me as with the company came a large portfolio of French clients.

Right now the company is in a position in which it carries out more damage evaluation work, usually for insurance companies. However, I feel our specialist field would be large yacht performance sea-trials. Core business as ever is pre-purchase surveys on sail and motor with reporting also in Spanish and French.

Q. When did you decide to set up business in Majorca and to make the island your home and what would you miss most if you moved?

A. I set up a yacht delivery and maintenance company in Palma in 1991 after meeting a young Spanish chica. I knew Palma and the Baleares from my time as a yacht skipper and thought it the place perfect for the business I had in mind and also an idyllic place to live. The chica became my wife. Another important factor was, and still is, that Majorca is a fantastic motor biking island. I am a very keen biker, now onto my bike number 19. It was only a few years ago I bought a car and that was to be able to move sails! Mallorca has great biking roads, especially in the mountains and lots of enthusiasts. I use my bike for work on a daily basis as the roads and marinas are simply too congested for me to get about otherwise.

Moving would be a shock and thinking about it I would probably miss the relatively low "crime" rate here which we take for granted. It is also a safe place to live and I would certainly miss the weather.

Q. Which one survey, or type of survey, over the years has given you the most pleasure and why?

A. One of the most satisfying was an insurance survey of a cargo vessel which had "lost steering" just before Christmas and had to be towed to anchor in Palma Bay. Fairly quickly it became obvious that the vessels rudder blade had fallen off. The vessel was then towed to the mainland and the stock and remains of the rudder removed. During the inspection of the remains I was joined by the Greek owner of the vessel. He and the vessel's crew were absolute gentlemen and were very patient and understanding. The ship was well run, in order, and had just been relaunched after important docking works including revalidation of her class certification. The cause of rudder blade failure was important as the insurance would not cover the costs of all failure scenarios – cover may have been applicable - depending on the survey results. For the owner this was a very expensive incident and the he could not easily have afforded the repair costs. The costs would have also have implications for the crew too.

Inspection of the remains of the rudder blade was like reading a well written book. The how, when and where were obvious – serious mistakes had been made during the recent docking. There was an entity responsible for the failure and insurance would cover the repair costs in the first instance. There was tangible proof which meant that cover applied and the ship could continue operating normally. When I explained the cause of failure to the insurance agent (my client) on the telephone that same day, there was a pause then he said, "Yes, well done for that, but just write the cause of failure down as "corrosion" – it's simpler for all involved you see". A quandary!

It took a few days of hard work on the telephone before I was able to get a direct contact to the claims handler of the insurance company – without the agent as mediator and it was agreed that I should submit the insurance report directly to them. The insurance agreed to cover the repair costs as per contract, and also my survey fees… the agent and I were not best of friends by then.

This assignment for me was very satisfying – dealing with a very interesting problem which had an obvious cause if you knew how and where to look, many challenges from all manner of directions, nice people involved who all kept calm (except the agent) and understood their place in the procedure. And finally justice was done.

Q. What has been the most challenging situation you have had to face whilst on survey?

A. Being kicked off a 40m tri-deck motor yacht by the owner. During full-lock steering sea-trials the red wine storage cupboard opened above the marble topped bar, smashing bottles over the deep pile snowy white full size saloon carpet.

"WHY DID YOU MAKE MY CAPTAIN DO THAT"!!!! GET OFF MY BOAT!!!

Q. What do you think are the key factors facing the modern marine surveyor and are they well equipped and knowledgeable enough to cope in an ever changing marine sector?

A. The young marine surveyor these days will struggle to get meaningful experience to be able to, for example, do a proficient pre-purchase survey. My peers and I were probably the last lucky enough to have been "hands-on" through a large range of marine related topics. I had part time jobs as a sailmaker, sailing instructor and in a small shipyard. I rebuilt petrol and diesel engines for fun. There was no health and safety back then which probably helped to educate the ones that survived. This is very good back-ground knowledge not possible to be replaced or replicated by classrooms alone. The young surveyor must be a practical person with a sound marine engineering background, be a listener and an apprentice for as long as necessary to learn the trade.

Q. How important is it to bring IIMS members (and other surveyors) together in Palma each year to network and what do you believe they get from these meetings?

A. The meetings are important to help keep abreast of marine tendencies, to hear what the institute is up to first hand and to meet and share information with colleagues. You also get to hear from your peers about mistakes that have been made and hopefully how to go about avoiding making the same mistakes. These type of meetings are essential and fundamental, especially for surveyors who are not placed in active marine centres and don't get to meet other members on a regular basis. The Institute must also make sure that their practising surveyors are of an appropriate professional standard through continuous professional development (CPD), if they are to represent the IIMS.

Q. Palma is becoming seen as an increasingly popular destination as a superyacht centre of excellence and refit destination. Why is this?

A. The geographical location is good. There is a particularly good marine infrastructure with many years' of experience. There is a lot of professional expertise here with fair competition between the companies. It must be one of the best refit centres in the world. Then again, possibly the main reason could be that the crews and their families also are comfortable here drawing the yachts back year after year.

Q. What has the resurgence in the Palma Superyacht Show in recent years done for the prestige of Majorca, the boating and surveying business locally?

A. The PSS has provided a useful point of focus for the mediterrean marine industry. The organisers have recognised the potential and have been able to come up with a vibrant format encompassing sellers, buyers, crew, shipyards. Almost everyone involved in the industry would find something of interest at the show. Another benefit not often mentioned is that politicians are forced to realise the importance of the industry to the local economy.

Q. What one piece of advice would you give a younger, up and coming surveyor?

A. Be an apprentice, listen and learn. Learn to respect the sea, preferably by sailing on it.

Q. The Report Magazine understands you are a keen sailor and enjoy nothing more than taking to the open sea. Please tell us something about your love of the sea and yacht racing.

A. I have a pretty full program of regattas, one design racing with the FLYING FIFTEEN which is a very technical boat on boat racing where every gain or loss of a metre during a half hour race is significant – great fun and thrills with a respectably sized fleet here in Mallorca. Also, I am beginning to sail a JEANNEAU SUNFAST 3200 in short-handed offshore races where in recent times computer generated weather routing has added another dimension to the sport of offshore racing. These boats are now fast, stable and safe and with the weather routing you should not sail yourself into nasty weather surprises, leaving you free and able to enjoy the challenge and the exhilaration.

Q. Apart from a love of sailing, what else might we find John Walker doing in his spare time?

A. I have just started athletics training to try and improve my running times which had stalled at 4m 36s/ km. Very interesting and enjoyable to be able to join in at my age, so let's see what happens!

Q. Should we find ourselves in Majorca next month for the Palma Superyacht Show, which restaurant in Palma ought we to head for?

A. There's this great off-the-beaten-track Spanish restaurant on the north coast overlooking the sea, great prices, but you don't actually think I would tell you where it is do you??

The IIMS Western Mediterranean Large Yacht & Small Craft Working Group two day training event takes place on Thursday 26 and Friday 27 April 2018. Members and non-members are welcome to attend. Attendance carries 5 CPD points. The cost of participation includes free entry into the Show. For more go to: **http://bit.ly/2BF52wj**

The Palma Superyacht Show takes place in Majorca's capital from 27 April to 1 May 2018: **https://www.palmasuperyachtshow.com/en/**

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