THE REPORT

The Magazine of the International Institute of Marine Surveying

DECEMBER 2017
ISSUE 82

INTERNATIONAL INSTITUTE OF MARINE SURVEYING

TO BE OR NOT TO BE ... AN EXPERT WITNESS

ROUND UP OF 2017

SURVEYING VANUATU - A NIGHTMARE!

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Editor's Letter

Dear IIMS Member

Welcome to the last Report Magazine of 2017. It has been quite a year, successful on the business front for sure, but one that will be remembered for many reasons! You can read my very personal review of the highs and lows of life at IIMS and MSA during 2017 elsewhere in this edition.

Feedback from the last issue of The Report was pleasing to read. In particular, some readers commented on the new layout of the news pages and how fresh and clean they look. Your feedback matters to us, so thank you.

November proved to be a busy month for training and conferencing. In the members news area you can read about the training that took place for yacht and small craft surveyors, both in Scotland and near Portsmouth. During late November we held a practical two day training event for Certifying Authority members when we clambered beneath a windfarm fast crew vessel in south Devon to conduct a workboat coding survey. Fascinating. And we wrapped up with the 5th Biennial IIMS UAE Branch Conference, held in the splendour of the Sheraton Jumeriah Beach Resort hotel, Dubai, just a few days ago. Check out the review from page 19. On the subject of training, you will find a provisional calendar of IIMS events for 2018 in this edition. Watch out as we flesh out the plans in full and I hope to meet you next year in person or online. In particular, I am excited to announce a four day joint IIMS and eCMID seminar to be held in Sydney, Australia from 31 July to 3 August around the Sydney Boat Show.

One of the joys of editing this publication and searching for content is that I encounter some interesting individuals who I would not usually meet. Rama Chandran, who I met in Singapore earlier this year, is one such example. What a mine of information he is. His article on hull machinery claims makes sobering but essential reading.

Peter Broad MIIMS, based in South Korea, is the subject in the Day in a Life of. He is engaged in some ground breaking LNG projects in the huge yards out there. He speaks openly about his life and work.

I make no apology for including three short articles relating to business management themes in this issue. Most surveyors I know, especially those who work alone, get so wrapped up in surveying that some areas of business management get overlooked. Whether we like it or not, there is some potentially onerous new EU legislation coming in May 2018. It is called the General Data Protection Regulation and you ignore it at your peril. It affects many of us, no matter if you are outside the EU or not. If you trade with EU organisations it affect you too. The fines are potentially crippling. See page 60.

The article on to be or not to be an expert witness is worth a read. This can be a lucrative area of business for surveyors, but are you sure what it entails? See page 49.

Some of us are older enough (just in my case) to remember the round the world sailing antics of Sir Francis Chichester in his beloved Gipsy Moth IV. I am grateful to IIMS member, Capt Mark Souter, who stumbled across the original Gipsy Moth, bought her and has written an article about his escapades. Read the article on page 46.

On a lighter note, we have pulled together fifty quotes with a nautical theme, some from famous people other not so. It seems there is plenty of wisdom!

Enjoy the other content not referenced here in my Editor's letter in what is another packed Report Magazine.

Survey well.

Mike Schwarz
Chief Executive Officer
International Institute of Marine Surveying

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The President's Column

Dear Member

My week started really well. Attending an Australian Maritime Safety Authority surveyors' workshop I discovered that an IT system they have worked on for about the last four years was going to impose an extra $63,000.00 (best estimate) of costs on my business year on year. Extrapolate this across the group of surveyors I work with (about 250 accredited persons in Australia including many IIMS members) and this is an extra $1.26Million per year of costs directly to surveyors.

This is on top of the survey fees we have to charge - a cost to industry which was not included in the recent 'consultation' they did; a consultation which quite rightly got roundly panned by industry and forced a delay in the system until July of next year. AMSA did not mention survey fees then, only that it needed c.$23 Mil to run its own bureaucracy, which was to be extracted from vessel owners and operators. More bureaucracy is just what the world needs right now. Don't even start me on the opportunity cost this imposes on me and the 250 surveyors nationally.

This awesome IT system would require us to fully populate a vessel record for an existing vessel, as apparently AMSA is unable to extract this information from current records they hold. Then every survey we conduct will have to be entered into a manual, on-line interface, much of which would then be manually checked by someone somewhere before survey certificates could be issued for vessels we have surveyed. In addition, we would have to upload a raft of horrendous forms… I had to look at my watch and double check the year we are in, because I was having flashbacks to the 1970's.

When we pointed out (as we had back in March) that we run a centralised QMS/administrative support system and that the system they had built did not allow anyone other than individuals to log in, we were told to work round it by sharing log in's and passwords, but just not to tell them about it. At this point my jaw hit the ground as you can well imagine.

AMSA is a government agency. I cannot imagine that an Australian government committed to red tape reduction and IT innovation would be best pleased with this approach by one of their agencies.

So, on top of running a business that in the last year did upwards of 1000 surveys, and personally actively surveying, (12 vessels this week as I have staff away), I'm forced into the fray to get the attention of the powers that be, the media and all other stakeholders and try and get this train wreck of a service delivery model properly configured.

In life you have a choice - to be a bystander or to be an upstander. As your President I could not be anything other than the latter.

Who says surveying is a boring job? Have a great holiday period everyone.

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

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HYBRID ELECTRIC VESSEL VISION OF THE FJORDS WINS AWARD

The iconic Vision of the Fjords has picked up an award

Hybrid electric vessel Vision of the Fjords has won an award recognising its accessibility and environmental achievements.

The 400-passenger capacity vessel, owned and operated by The Fjords DA, secured the Norwegian Centre for Design and Architecture (DOGA) Universal Design 'transport' award for its commitment to optimal passenger accessibility, experience and environmental sustainability.

Rolf Sandvik, CEO of The Fjords, said: "We ensured that the 'path' passengers use to ascend the ship, and really immerse themselves in the sensory delights of the nature here, is as accessible to those in wheelchairs, or of limited mobility, as it is to all.

"There's no stairs, no elevators, no obstructions, just a gently sloping surface leading everyone to unforgettable views."

BATTERIES SET TO REPLACE GENERATOR ON OFFSHORE VESSEL VIKING PRINCESS

A hybrid energy system has been installed on board Viking Princess making it the first offshore supply vessel where batteries have reduced the number of generators on board. Viking Princess completed sea trials and the system was handed over to Eidesvik Offshore on October 9, 2017.

She provides supplies to oil rigs in the North Sea and Barents Sea. The five-year old vessel runs on LNG-powered Wärtsilä engines. Depending on the ongoing task and weather conditions, the engine load varies between 90 percent and 20 percent.

With the Wärtsilä installed energy storage system on board, Viking Princess is expected to reduce fuel consumption by up to 30 percent in various operations and CO2 emissions are expected to be reduced by up to approximately 13-18 percent per year, depending on operational conditions and requirements.

Offshore supply vessel Viking Princess

SHIPPING SECTOR NOT READY FOR IMO 2020 SULPHUR LIMIT REGULATIONS REVEALS SURVEY

Some 70% of shipping companies surveyed say they do not believe the industry is ready for IMO's 2020 deadline, when a global limit of 0.5% sulphur will be imposed on marine fuel for vessels trading internationally. That was the headline finding of a new survey conducted by CE Delft on behalf of Exxonmobil.

The survey suggests that only 500 ships have been equipped with scrubbers. There has been something of a backlash against scrubber technology, most notably from Maersk and Klaveness, who have said they see the technology as being expensive and immature.

Lasse Kristoffersen, CEO at Torvald Klaveness, last year said scrub-bers are a costly investment, costing between $2.0 and $4.0m, which can sometimes be greater than the value of the vessel itself.

Other respondents to the ExxonMobil survey said they were concerned that shipping companies would cheat and falsify the sulphur content of their marine fuel. Could this be a tacit admission that port states do not intend to or will not be able to enforce the 0.5% cap in their own waters?

Read the story in full: **http://bit.ly/2yxQ222**

AKZONOBEL'S INTERLINE 9001 CARGO TANK COATING WINS ICIS INNOVATION AWARDS

AkzoNobel has scooped two prestigious honours at the recent ICIS Innovation Awards for the Interline 9001 ultra-performance cargo tank coating supplied through its International brand.

As well as being awarded with the overall Innovation Award, Interline 9001 also received the Best Product Innovation Award from ICIS, the trusted information provider for the global chemical and energy industries.

Interline 9001 cargo tank coating has won two awards for AkzoNobel

The awards recognize the impact the new coating has had on the chemical tanker industry, specifically how it tackles the issue of absorption from aggressive cargoes, such as methanol, acetone and ethylene glycol. These issues can often result in cargo cycling restrictions, increased risk of subsequent contamination and the need for repeated resource and time-intensive washing procedures.

MAIB RELEASES MGN 564 TO REPLACE MGN 458 DESCRIBING HOW MARINE CASUALTIES AND MARINE INCIDENTS SHOULD BE REPORTED

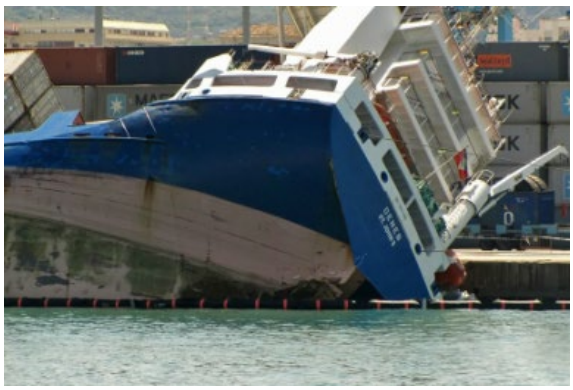
On 20th March 2017, the MAIB opened a consultation to stakeholders to gather views on a new Marine Guidance Note (MGN) to replace MGN 458. The MGN provides guidance on the legal obligation to report marine casualties and marine incidents to the MAIB, as contained in The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012. It describes the process and the information required for reporting.

The draft new MGN was divided into sections, designed for quick reference, being:

- A brief introduction
- Who Must Report
- What to Report
- When to Report
- How to report

The result is a new MGN to replace MGN 458.

Read the new MGM at **http://bit.ly/2yCaWMM**



80 YEAR OLD BOAT BUILDING HERITAGE CELEBRATED IN GREECE

A traditional boat of the type that disappeared from the Greek seas 80 years ago, is now preparing for her maiden voyage. The vessel, named Medon-Pleioni, has been constructed at the boat building yard Neososikos in Glyfa, Halkida.

The project is the initiative of the "Proteas" Non-profit Organisation for the Preservation of Traditional Shipbuilding & Heritage, and of the sailing enthusiast and primary consultant from the municipality of Vari, Voula and Vouliagmeni (southeast coast of Attica), Dimosthenis Dogas.

Research, design and construction of the heritage vessel was by Nikolaos Vlavianos. He said, "It is for us a truly great and historic responsibility. Bearing this in mind, we began the construction of a boat with sakoleva sails from a ??sailboat plan from 1835 with traditional methods and practices to the slightest detail. It is the first of its kind to be built in about 80 years."

SEAGULL MARITIME PUBLISHES A GUIDE TO BALLAST WATER MANAGEMENT TO COINCIDE WITH CONVENTION CHANGES

On the 8th September 2017 the International Convention of the Control and Management of Ship's Ballast Water and Sediments (BWM Convention) entered into force. With a few exceptions, it will apply to all ships in international trade beginning in 2017 and fully implemented in 2024.

Complex in parts, there are a number of conditions that officers must meet in order to avoid problems in relation to topics such as Port State inspections. In essence, existing ships MUST comply with the convention. This means that the ballast water must be exchanged on the journey if a treatment system is not installed.Vessels must also be equipped with a International Ballast Water Management Certificate (or statement of compliance) and an approved ship-specific Ballast Water Management Plan.

Read the guide to Ballast Water Management at **http://bit.ly/2yBodDE**

BUREAU VERITAS JOINS DRONES PROJECT FOR INSPECTING STEEL STRUCTURES IN ENCLOSED SPACES

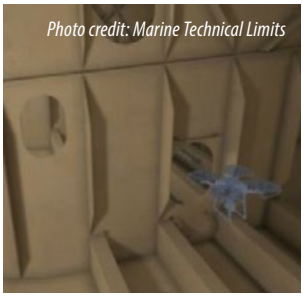


Photo credit: Marine Technical Limits

Bureau Veritas has joined RECOMMS, a joint investment project, that is aiming to develop drones with the capability to inspect steel structures in enclosed spaces. The joint investment project's primary objectives are to develop a steady, stable and reliable drone capable of following programmable flight paths, either pre-determined by 3D imagery software or flown by a pilot, using 3D simulator ship specific training programmes developed in unison with the drone design. This will lead to the development of a complete and marketable inspection drone when delivered with the required software package.

Jean-François Segretain, Technical Director, Bureau Veritas, Marine & Offshore, said: "While a lot of work has been done with drones nothing yet released has led to drones meeting specific requirements for marine classification close up surveys. This project addresses the specific needs of our survey requirements and other inspections."

In the first phase of development, the drone will be designed to carry an unobstructed HD camera, as well as lighting and batteries with suitable strength, durability and longevity to perform structural and coating inspections within a ballast tank whilst providing reliable clear images fit for comparison with close up inspection.

CORVUS ENERGY ENERGY STORAGE SYSTEM SELECTED FOR NEW MULTIPURPOSE HYBRID VESSEL

Corvus Energy has announced it has been selected by Rolls-Royce as the supplier of a lithium ion based energy storage system (ESS) for the Norwegian Coastal Administration's new multipurpose vessel OV Ryvingen. The Orca Energy ESS from Corvus will supply electrical power for all-electric propulsion and for electrical needs while docked.

The OV Ryvingen is the Norwegian Coastal Administration's second vessel to combine traditional diesel power with battery-driven operation and the fourth vessel in the Norwegian Coastal Administration's fleet renewal programme, consisting of six to eight ships in total. The Ryvingen is a multipurpose vessel, which performs operations relating to oil spill protection and the maintenance of shipping lanes.

The Orca ESS that Rolls-Royce will equip the Ryvingen with will have an available capacity of 2938 kilowatt hours (kWh). This will allow the Ryvingen to run on battery power alone for several hours, without using the diesel engine. In addition, the batteries will provide power when the vessel is docked, so the diesel engines will not have to be kept running. The batteries will be recharged from an onshore power supply in ports where this is available.

Read more at **http://bit.ly/2iwsh4s**

NEW GUIDE ON HOW TO CARRY CHARCOAL AND CARBON CARGOES IN CONTAINERS SAFELY PUBLISHED

After a painstaking two-year restoration at Charlestown Navy Yard in Boston, USS Constitution has recently been refloated. Since she entered dry dock in 2015, ship restorers from the Naval History and Heritage Command and teams of Navy sailors have worked side-by-side to bring "Old Ironsides" back to her former glory.

The restoration involved the replacement of 100 hull planks, along with caulking, rebuilding of the ship's cutwater on the bow, and the preservation and repair of the ship's rigging, upper masts and yards. Among other tasks, sailors assigned to Constitution helped the Navy's ship restorers replace 2200 sheets of copper and the felt that is installed behind it. The copper is a defense against shipworms. "It's an incredible feeling to be a part of the team to work on Constitution," said Aviation Ordnanceman Hunter Sensign. "Every day I came to work and it really sinks in that I'm working on a ship that's 219 years old."

Constitution is expected to continue post-docking restoration work before re-opening to the public in early September. While she is ordinarily at the pier at the USS Constitution Museum in Boston, her commanding officer, Cmdr. Robert Gerosa, says that at some point she will be seen under way under her own power once more.

Read the story in full online: **http://bit.ly/2gsZVqJ**

BEWARE OF FUEL OIL QUICK CLOSING VALVE DEFICIENCIES

The Bahamas Maritime Authority (BMA) has published a technical alert aimed at highlighting some major deficiencies related to fuel oil quick closing valves, which it has observed during Port State Control inspections. These deficiencies are considered of importance and often lead to detention.

Quick closing valves are fitted to oil tanks so that in the event of a fire they can be safely closed from a remote location to stop the supply of fuel to the fire. These valves may be operated remotely by pull wires, hydraulics, compressed air, etc.

Recently, BMA has observed that quick closing valves have been modified or intentionally blocked to prevent them from closing. This practice has potentially catastrophic consequences in a fire emergency.

Read the article in full at **http://bit.ly/2gTDQyT**

MANHOLE COVER LEAKAGE LEADS STEAMSHIP MUTUAL TO ISSUE AN ALERT

The Steamship Mutual P&I Club has published an alert following a spate of claims for cargo damage and other liabilities that have been caused by leakage from the manhole covers of either ballast or bunker tanks.

In some of the most recent cases, the manhole covers had either been left completely unattached, or were improperly fitted allowing leakage into the adjacent cargo hold when the tank was filled.

The Club notes that manhole covers on vertical bulkheads, such as those on wing tanks or side tanks of container ships, are generally located close to the bottom of the tank meaning that leakage from the cover is found only after the tank has been filled to a certain head. This makes it even more difficult for the manhole cover to be secured until the contents of the tank have been transferred from the tank to stop the leakage.

The extent of damage caused in such a case will often depend on how quickly the leakage is identified and the scope for quickly transferring out the contents. Side tanks are particularly difficult in this regard as leakage may go unnoticed due to their location being obscured by cargo.

Read the article in full at **http://bit.ly/2yVT1C9**

SAFETY ALERT ISSUED ABOUT VESSEL STABILITY AND WATERTIGHT INTEGRITY FOLLOWING FATALITIES

The US Coast Guard has issued an interim safety alert to address its concerns regarding vessel stability and watertight integrity, especially in light of a recent marine casualty in the Bering Sea that resulted in multiple fatalities and the total loss of the fishing vessel involved.

Although the investigation is not complete, testimony and fact finding indicate that vessel owners, operators, and crews should give special consideration to vessel stability concerns.

As a result, USCG suggests that operators and crew should seek out opportunities to further their knowledge of stability via courses, training, workshops, and visits from Naval Architects. They should also take advantage of other various initiatives, both mandatory and voluntary, to discuss and compare a vessel's current SI to the actual loaded condition prior to departing port. An independent review of a vessel's loaded condition, equipment, and operations can often provide important insights.

Read the article in full at **http://bit.ly/2yXj2kF**

CONCERNS ABOUT THE HAZARDS OF BAUXITE AS SHIP CARGO HIGHLIGHTED BY IMO

According to a new warning issued by the International Maritime Organization (IMO), it says that bauxite could become unstable when carried in bulk onboard a ship, potentially resulting in the vessel capsizing.

Bauxite is one of the world's major sources of aluminium with around 100 million tonnes transported annually by sea. In 2015, a bulk carrier sank while transporting bauxite, with the loss of 18 seafarers. Research presented this week to an IMO Sub-Committee found that certain forms of bauxite with a large proportion of smaller particles could be subject to a newly-identified phenomenon of "dynamic separation" when there is excess moisture in the cargo.

In such conditions, a liquid slurry (water and fine solids) can form above the solid material, according to the report of an international Global Bauxite Working Group on Research into the Behaviour of Bauxite during Shipping. The resulting free surface effect of liquid sloshing about could significantly affect the vessel's stability, leading to the risk of the ship capsizing.

Read the article in full at **http://bit.ly/2xTgXkB**

MCA RELEASES A BULLETIN ABOUT A QUALITY ISSUE WITH FIRE DOORS

The UK Maritime and Coastguard Agency (MCA) has released a bulletin to notify vessel operators and surveyors that a quality issue has been discovered relating to fire doors manufactured by COSMO Co Ltd.

The MCA makes reference to an advice letter issued by the manufacturer, which urges particular attention of doors rated A-60, A-0 and B-15. Following an internal investigation, it was found that some delivered and installed doors have some insulation missing from part of the door fitment. As a result of the missing missing insulation, the doors do not comply with their type approval certification.

The COSMO Fire doors A60, A0 and B15 that might be affected by this issue have been type approved and are certified to MED Modules B and D by DNV GL and were produced between November 2013 and July 2017.

The main issue relates to the insulation in the doors, which is missing from the upper part, sides and bottom. This is believed to have occurred during a change of work process in November 2013.

Read the article in full at **http://bit.ly/2zpmNv5**

MARINE NOTICE ISSUED BY AMSA ABOUT HOW TO MAINTAIN RESCUE BOAT OUTBOARD MOTORS IN GOOD WORKING ORDER

Australian Maritime Safety Authority (AMSA) has issued a marine notice referring to the operation and maintenance of rescue boat outboard motors and highlights key issues that ship's crew and operators should be aware of in this crucial area.

AMSA and Port Sate Control Officers (PSCOs) announced that they increasingly find that some crew members are unfamiliar with the operation and maintenance of outboard motors, which can result in poor performance or total failure of these motors. This is a risk that cannot be taken during a rescue operation, because the consequences could be catastrophic.

Read the article in full at **http://bit.ly/2yCffI8**

MAIB ISSUES AN ESSENTIAL SAFETY DIGEST FEATURING 25 CASES

Essential reading for every marine surveyor, the MAIB has published a Safety Digest featuring the outcome and recommendations of 25 cases.

The Marine Accident Investigation Branch (MAIB) examines and investigates all types of marine accidents to, or on board UK vessels worldwide and other vessels in UK territorial waters. In this Safety Digest MAIB draws the attention of the marine community to some of the lessons arising from investigations into recent accidents and incidents. It contains information which has been determined up to the time of issue.

In his introduction to the Safety Digest, Steve Clinch, Chief Inspector of Marine Accidents for the MAIB says, "A fire is one of the most frightening things that can happen at sea. Often, seafarers have no ready access to the emergency services when a fire breaks out and will need to rely on their own resources, courage and training to tackle and extinguish the blaze quickly to ensure the safety of the ship and everyone on board. After reading one of the cases while editing this edition of the Safety Digest, I found myself thinking about the recent fire that engulfed Grenfell Tower, a west London residential tower block. This was an horrific incident; 80 people are currently presumed to have died but the ferocity of the fire means that the final death toll may never be known for sure. Why the Grenfell Tower fire spread so quickly is the subject of intense debate but its source was attributed to a domestic fridge/freezer that overheated. Case 10 provides a reminder that fires can quite easily start in a similar way on a ship. In that case a fire was caused when a travel fridge was placed on the carpeted area of the deck in a cabin; the lack of air circulation around the unit caused the fridge to overheat… fortunately the crew were able to extinguish the fire without too much damage being done."

Read the article in full and access the Safety Digest PDF at **http://bit.ly/2goSmOr**

SWEDISH P&I CLUB LAUNCHES QUICK REFERENCE GUIDE ON CARGO FIRES AND EXPLOSIONS

The Swedish P&I Club has published an excellent quick reference guide about the causes and prevention of cargo fires and explosions onboard. The guide focuses on self-heating. It explains the principles of self-heating as well as investigating several types of cargo fires and explosions, including those in vessels such as bulk cargoes, containers and tankers.

When a fire breaks out on board a vessel there is no fire service ready to assist in extinguishing it. So it is up to the crew themselves to manage and deal with the issue. The consequences can be catastrophic. All those who have worked on board a vessel are aware of the difficulties involved with managing a fire and the crucial importance of fire prevention.

Read the article in full and access the reference guide at **http://bit.ly/2yX5O7w**

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

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ESSENTIAL ONE DAY SEMINAR ENTITLED MARINE CORROSION AND ITS PREVENTION IN SMALL VESSELS

JOIN REAL TIME OR AS AN ONLINE DELEGATE

IIMS has joined forces with the British Stainless Steel Association (BSSA) to deliver an essential and special one day seminar called 'Marine Corrosion and its Prevention in Small Vessels'. The day's seminar programme will be delivered by Dr Mike Lewus, Technical Advisor, BSSA on Tuesday 23 January 2018 at Lakeside, North Harbour, Portsmouth. Delegates who cannot be there in person may join online live via Zoom and take the whole day's programme.

Who should attend?
This seminar will suit marine surveyors, marine engineers designers and specifiers interested in material degradation mechanisms in the marine environment and selecting fit-for purpose materials.

An outline of the day
This one day course gives a comprehensive overview of the fundamental principles of corrosion and forms of corrosion that beset marine metals including, stainless steels, aluminium alloys, copper/nickel and titanium alloys. The types of corrosion commonly found above and below the waterline of small vessels and the factors which influence the rate of degradation are considered. For completeness protection methods, elements of failure analysis and illustrated case studies are to be discussed.

What will you learn?

- Recap on fundamental corrosion principles including, driving force for electrochemical activity and principles of galvanic corrosion
- An understanding of the corrosion mechanisms that undermine the performance of stainless steel and other 'marine metals' and associated metrics
- An appreciation of what environmental factors influence corrosion above and below the waterline and how this impacts material selection
- Consider how to minimise corrosion through material selection, improved design and other strategies i.e. cathodic protection, changing electrode potential, surface treatments etc.
- Become familiar with important aspects of failure analysis; inspection, sample preparation, analytical techniques and diagnostic methodologies

The day's course will be delivered in six sections 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

Delegates will take away a course manual, a certificate. In addition copies of the video made on the day will be available to all delegates. And you will earn a valuable 5 CPD points t00 - what a great start to the year!

The cost of the day, to include all course materials, lunch and refreshments is just £120. Please indicate if you will be there in person, or if you plan to join in an online capacity.

To reserve your place on this one day seminar, either email Cathryn Ward on **education@iims.org.uk** or call her on 023 9238 5223. We will invoice you on receipt of your instructions.

LYSCWG SCOTLAND REPORT

The Large Yacht & Small Craft Working Group met for its annual two day training event at Inchinnan Cruising Club by Glasgow Airport on 6/7 November. A dozen members attended the event and were treated to a range of informative presentations across the two days.

Mike Schwarz gave an overview of the head office activities and spoke about the progress that had been made with both the Institute and the Marine Surveying Academy. Tom Elder ran an interesting session on valuations. He was keen to remind those present of a second hand boat market with ever declining values. Those present visually inspected a dozen vessels and then came together to compare valuations, which proved to be an interesting discussion and an eye-opener for some too.

On the second day, Paul Winter, Winter & Co Marine Insurance, gave a presentation in two parts. Having introduced surveyors to the many different types of insurances available on the market and the reasons why they might consider them, Paul presented nine case studies that gave rise to claims, many of which were successfully defended, although not all by any means. It was certainly a sobering and though provoking discussion that ensued.

Alan Marsh, a local enforcement officer from the MCA, spoke about his work, something delegates found most interesting.

The group also heard the dramatic story from the mouth of the skipper of the Clipper yacht Clyde Challenge, which resulted in its scuttling earlier in the year and had a presentation on masts and rigging too.

LYSCWG 'SUPER' TRAINING PORTSMOUTH REPORT

The second annual, one day 'Super' training day took place at Lakeside near Portsmouth on Monday 13 November. The event drew an audience of thirty plus yacht and small craft surveyors from around the UK and from much further afield, some of who joined online via zoom. The IIMS Chairman of Large Yacht & Small Craft Surveying, John Excell, opened proceedings thanking delegates for coming and the head office team and presenters for combining to put the day together. After an update on head office activities, John introduced Peter Chettleborough from Winterbothams. Peter spoke passionately about the challenges of surveying larger superyachts, dwelling on some of the key

personality traits and diplomacy required to operate successfully in this arena.

Next to present was Mike Schwarz, who gave a thought provoking presentation, drawing from his experience of many years on how to be successful in business. John Sharland, Tritex NDT, had called in that morning to send his apologies for absence due to a mishap. But a video of John explaining how ultrasonic testing works, recorded earlier this year, was shown instead.

Graham Watts brought the morning session to an end when he spoke in depth about the Boat Safety Scheme, why it exists and how it is policed. He showed a selection of thought provoking images of some of the catastrophes that have occurred on the inland waterways. After lunch, Paul Winter took to the speaker's podium. As in Scotland the previous week, he spoke about the various types of insurances - not just PI insurance - that a surveyor should consider in the course of conducting his business. In the second part of his presentation, Paul gave some case histories coupled with photographs to explain the nature of each claim and in some cases how it could have been prevented.

The final presentation of the daywas a highly interactive one, delivered by Tim Bannister from AkzoNobel. IIMS and AkzoNobel work closely together on the Registered Marine Coatings Inspectors programme for the inspection standard for superyacht coatings. After a short formal presentation introducing the audience to the different types of coatings testing equipment, delegates gathered round a test panel and had a play with the kit, including the incredible Wavescan machine, valued at a cool £25,000! All in all a fascinating presentation and Tim brought to an end what had been an absorbing and highly educational day, much appreciated by those who attended.


John Excell


Peter Chettleborough


Mike Schwarz


Graham Watts


Paul Winter


Tim Bannister

CERTIFYING AUTHORITY DEVON TRAINING REPORT

A group of 17 IIMS members and others met at the offices of Offshore Turbine Services at Dartmouth Quay in Galmpton in rural south Devon on the UK south west coast. After an initial introduction, the group headed out to the two windfarm fast crew transfer vessels, both of which were on the hard. Their mission? To inspect and conduct a mock MCA workboat coding survey on Commodore P, a five year old vessel. The group spilt into two, one group led by CA Chairman, Fraser Noble, the other by Mike Proudlove. For many of those who were present, this was their first encounter with a workboat of this complexity and type and a great learning opportunity.

Delegates went about their work in a very diligent and efficient manner. Once the various deck hatches had been opened, there were soon no surveyors to be seen as they vanished below deck. Surveying work carried on during the day, with the bridge, engines, lifesaving equipment, hull and all other aspects of the vessel coming under close scrutiny and survey.

After a splendid evening meal at a restaurant overlooking one of the largest fishing fleets in the UK in Brixham Harbour, delegates reconvened the following morning at the nearby Paignton Club. Fraser opened the day talking about the theory behind the extent of the coding surveyor's responsibility. After a general discussion, the group discussed the vessel defects and the list they had compiled the previous day. All in all this event was voted a hit by all who attended.

IIMS would like to express their personal thanks to Mike Proudlove MIIMS and Offshore Turbine Services for making the arrangements and for hosting the group at their facility. Additionally, Fraser Noble is to be applauded for imparting his depth of code surveying to all those present.

MARINE SURVEYING ACADEMY BUSINESS SURGING AHEAD

MSA is ending the year on a high. Several RMCI course for superyacht coatings inspectors have been run in Hamburg, Amsterdam and Viareggio. As a result, there are 100 qualified RMCI inspectors. Wrede and CCS, two of the largest independent coatings inspection companies, have put their personnel through the course. Increasingly superyacht and refit yards are insisting on only RMCI attending their yards as the standard gains traction in the industry.

Initial planning to create a new course for those who project manage the coatings process is now underway.

As the deadline imposed by IMCA looms large, which means that from 1 January 2018 only those who are eCMID accredited vessel inspectors will be recognised and will be able to access the online database, there has been a noticeable and sharp uplift in applications. Whilst not totally surprising, it is clear that many who need the accreditation to enable them to carry on doing eCMID inspections, have left it to the very last minute. It is also entirely possible that there will be another surge early in 2018 as inspectors who failed to gain their accreditation in time discover that they have been frozen out of the eCMID database. Exciting times. Expect to see the number of accredited AVIs hit the 400 mark some time early in the New Year.

MSA MAKES TWO NEW APPOINTMENTS

Following the departure of Sam Owen, MSA has appointed Pui Si Chung on a full time basis to the role of Accreditation Scheme Administrator. Sharon Holland also joins the company in the part time role of Events & Course Co-ordinator. Both start their new jobs with MSA this week and we wish them well.

Pui Si Chung, Accreditation Scheme Administrator

Sharon Holland, Events & Course Co-ordinator

2018

OUTLINE TRAINING PROGRAMME FOR 2018 (subject to final confirmation in some cases)

23 January 2018	Corrosion in stainless steel special day seminar near Portsmouth
March 2018	Inland waterways training day - Watford
26 March 2018	LYSCWG rig training day - UK south coast
26/27 April 2018	Western Med LYSCWG at the Palma Superyacht Show
May 2018	AMELS factory visit Holland
May 2018	Coatings training day for general surveyors at Gouda, Holland
31 July to 3 August 2018	IIMS and eCMID joint South East Asia Conference, Sydney
October 2018	Eastern Med LYSCWG training event, Malta
29 October 2018	LYSCWG 'super' training day Portsmouth
19/20 November 2018	LYSCWG Scotland
TBC	Marine Surveying Fest 2018

In addition, two training days for coding surveyors will be announced in the New Year. IIMS is also considering running a tonnage training event in Gibraltar. Watch out for that date too. Keep your eyes open for more details as they are released.

IIMS UAE Branch 5th Biennial Conference report

Around 75 delegates from the surveying and wider maritime sector gathered at the well appointed Sheraton Jumeriah Beach Resort in Dubai on Monday 27 November for the one day UAE Branch Conference, the fifth Conference since the formation of the branch nearly 10 years ago.

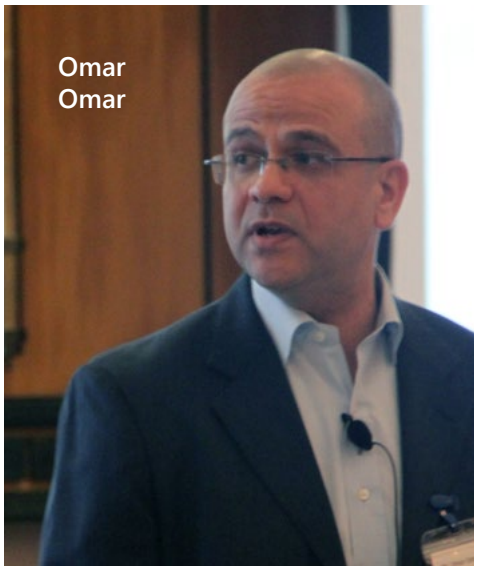

Peter Valles

The event was opened by Peter Valles, Chairman of the UAE Branch. He thanked the speakers and the sponsors for their generous support. He introduced a short video, recorded by Adam Brancher, IIMS President, who was unable to be at the event in person. All presentations were short sharp as each speaker had only 20 minutes to make his point.


Mike Schwarz

First to speak was IIMS CEO, Mike Schwarz, who in his short presentation tackled the subject 'The relevance of IIMS in the 21st century and how marine insurers can get the most from Institute members'. In particular he spoke of the need for surveyors to stick to their area of specialism and competence; and he reminded those requiring the services of a surveyor to use reputable sources only and to choose those who are members of a professional organisation only.

The next speaker to be introduced was Carl Durow from the London P&I Club, someone who is well known at these events having spoken several times before. He talked on 'P & I Ship Inspection Surveys - What are The Club's Looking For?'


Omar Omar

Omar Omar, another well known speaker from Al Tamimi & Company, based in UAE, talked about logistics and cargo claims for left behind cargo in ports. His knowledge on this subject was invaluable be laboured the importance of understanding how the local jurisdiction works.


Carl Durow

Dr Phil Thompson tackled the topic entitled innovative and rapid 3D visualisation and collision simulation technology – riding the wave of the digital evidence revolution, a presentation he had given recently at the IIMS London Conference. He shocked delegates with some of the real bridge commentary that led to a collision.


Phil Thompson


Jack Hatcher

Jack Hatcher from Hill Dickinson specialises in shipping, advising on both wet and dry matters for vessel owners, P&I clubs, hull underwriters, salvors, charterers, brokers and ports. In his talk, Jack tackled the subject of casualty investigation in the modern electronic era: "Thinking Outside the Box".

Next to the podium was Capt John Noble, a Fellow of both the Nautical Institute and IIMS; and another very familiar face. His presentation topic? 'Introducing Antigua and Barbuda, Yacht and Maritime registry - advantages of flying a white listed flag'. John brought his many years' experience to bear on an interesting topic covering the difference between white, grey and black labelled flags.

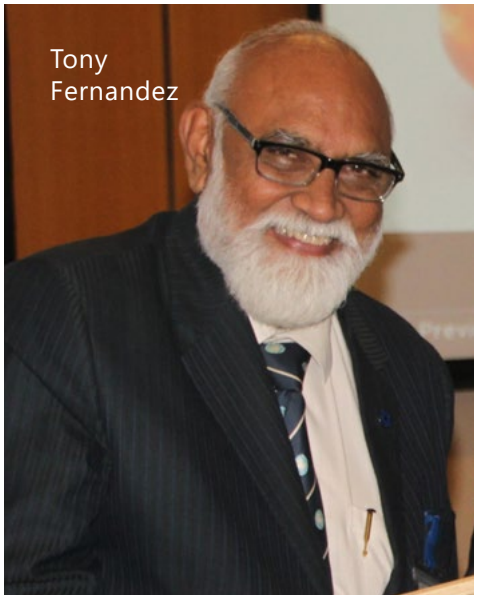

Capt John Noble

Professor Christopher Abraham spoke both eloquently and knowledgeably about the disruptive changes that are already impacting on the lives of surveyors (and all other professions too for that matter) and warned that the pace of disruptive change is certain to increase further in the coming years. He introduced the audience to the concept of VUCA, an acronym used to describe or reflect on the volatility, uncertainty, complexity and ambiguity of general conditions and situations.


Professor Christopher Abraham


Vijay Ramachandran

Vijay Ramachandran gave a thorough presentation on the role of surveyors in loss minimization and claim handling.



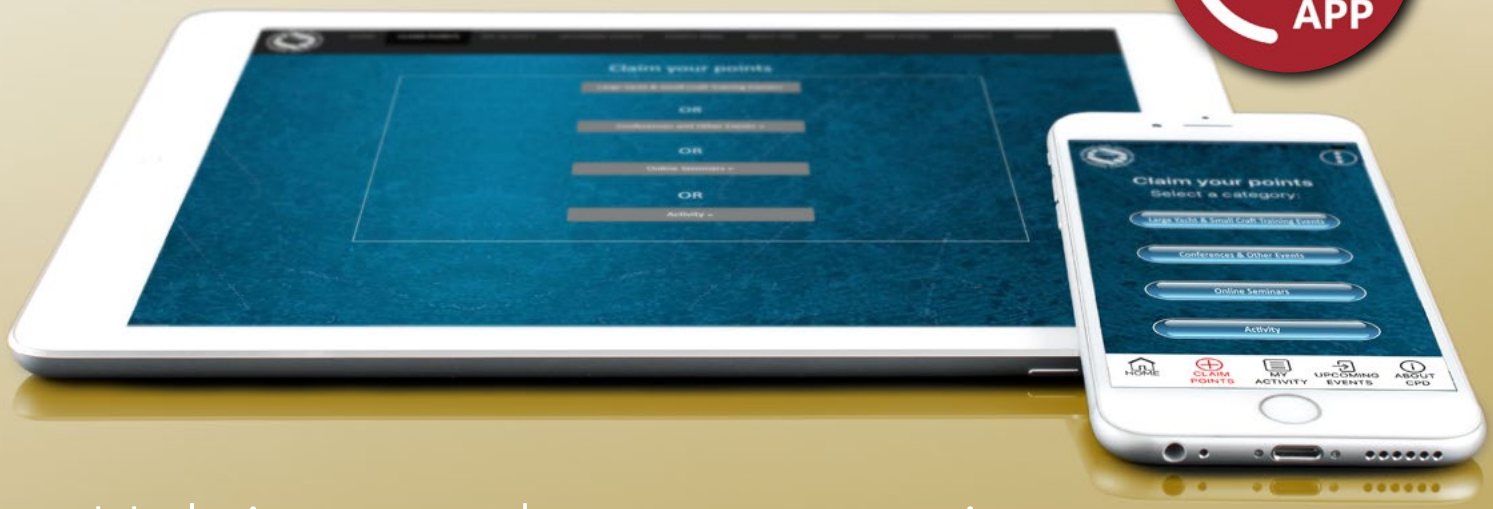
Tony Fernandez, another distinguished senior surveyor from India and IIMS Fellow took to the stage and delivered his presentation with aplomb. His subject? Striving towards impartiality as Marine Surveying Professionals - (Concepts, Cases, Concerns and Challenges). Tony kept the audience totally onside using his powerful address and pertinent content for which he is renowned for by many.

Yaman Al Hawamdeh, a Partner in HFW's Dubai office locally, presented on berth and Fender Damage Claims - a Middle East Perspective. Seemingly a rather innocuous subject, it soon became apparent at the sheer scale of damage and accidents that are reported and caused by this method.

Henrik Uth was the final speaker. His subject? 'Uber Surveyors - Breaking the Stereotype'. Henrik's company has been pioneering a platform to promote competent surveyors to P&I Clubs using an inbuilt algorithim to grade them. The platform, which is free for users to access, carries a fee from participating surveyors.

After the Conference, delegates and guests headed out for a reception and dinner on the lawns of the hotel. Just prior to dinner, a lifetime achievement award was presented to Capt Antia by Daniel Vikstrom from main event sponsors, Inchcape.

The IIMS CPD App...



Helping you keep your points intact and up to date!

For **iOS** users go to the "**App Store**".

Android, go to the "**Google Play Store**".

Search '**IIMS CPD**' and install the app.

Login using your **IIMS credentials**.

Or the "**My CPD Program**" link on the IIMS membership details page, **re-directs** the user to the new **CPD Program Website**.

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/

"Life at IIMS is never dull"

says Chief Executive Officer, Mike Schwarz, as he reviews what has been an absorbing and at times challenging, but ultimately successful 2017.

As we slip into deepest winter in the UK, my thoughts turn to chestnuts roasting in an open fire, (that would make a good lyric for a song), festive cheer and more importantly the chance to have a two week break to recharge my batteries. Yes the end of 2017 beckons. So this is an appropriate time to cast an eye back over what has proved to be a hectic and progressive year, but not without its challenges and hiccups too.

There certainly have been some colourful and demanding times at IIMS this year, but also plenty of light hearted moments too and over the year the two extremes have balanced each other out. Rapid progress and development has happened in some areas, but frustratingly slow in others. I guess it was ever thus. Running a business (and in my eyes the IIMS is a business and needs to run like one) is never simple and one needs to be flexible at all times – best laid plans and all that.

Expanding that thought process further, the one thing I have learnt over the years is that when you set a strategic plan in stone, it is important and necessary to be flexible because the execution of that plan is usually fraught with challenges and you can easily get knocked off track. Implementation dates change and slip; new opportunities present themselves, sometimes when you least expect them and so on. They also need to be worked into the strategic plan too. This year has been a bit like that. Let me explain further. Firstly, we undertook to replace the very dated ACT database at head office using something funkily known as Zoho Creator – an intuitive online, drag and drop database platform. Having project managed the implementation of databases from scratch before, I am only too well aware of the immense headaches they can cause. And if you get them wrong, it can pose a serious risk to any business. Indeed I have seen businesses collapse because of poor database implementation. The original deadline of having it live by mid-summer came and went for a variety of reasons. But we are finally rolling out the new database now. As a consequence we expect that all our members and customers will see a change and it will improve our efficiency with the ability to automate what were previously manual processes and procedures.

On the other hand, the new Continuing Professional Development (CPD) App, which was a late entrant into this year's strategic plan, ran ahead fast and went live in February with enhanced, version two coming on-stream in June. Thanks are due to IIMS member, Capt Ruchin Dayal and his excellent team in Goa for their work and professionalism in this area. Such has been the success of the CPD App that we simply wonder how we managed before it. At the time of writing, over 350 members have used the App to make 1,278 claims for CPD points. Remarkable. The whole process has been transformed and it has made keeping CPD up to date simple for members and head office staff alike. If you are one of the two thirds of members who have yet to try it, I urge you to give it a go. Versions exist for iOS, Android and on the web. The IIMS CPD App is being white labelled in readiness to be rolled out for the eCMID Accredited Vessel Inspectors community from January 2018.

Changing faces

Over the past twelve months we have said goodbye to several members of the IIMS team, some perhaps more surprising than others it must be said. One of the key (and toughest) challenges with any business is managing the human resource and sometimes it is very much akin to a 'dark art'. I wish those who have moved on from the Institute good luck with whatever they go on to do.

I have to say that a churn in any organisation is not a bad thing. The reality is that we all have our 'sell by' date and eventually go stale in a role. New people bring fresh ideas with them, new and different skills, alternative ways of working and problem solving techniques. Such has been the case with both IIMS and MSA and in my opinion, we end this year of transition with a stronger team collectively than the one we started 2017 with.

At the time of writing we are just in the middle of a major office move, with everyone relocating to a different part of the building. I expect this new layout to add fresh impetus and to help individuals to 'sharpen their saw', in readiness for the challenges that lie ahead in 2018.

On the business front

Once the combined accounts are published for IIMS and MSA at some point in 2018, they will show this to have been a record trading year, both I suspect in terms of turnover and profit. The growth in IIMS is modest, but sustainable. However the growth in MSA has been astonishing. More on this later. As a consequence this is the first time that I have felt able to say the organisation is in a fit and healthy state financially. The work that has gone on over the past four years has borne fruit.

We have continued to look for ways to reduce our overheads throughout the organisation and have been successful in further reducing our costs in some areas. Our membership revenues are on budget. The Certifying Authority, administrated by Tania Bernice, has had a decent year, ahead of budget too.

Although IIMS is a 'not for profit' organisation, the reality is that no business can exist without generating profit. We have some development costs to fund in the business going forward and we need to think about where the Institute is located when our 10 year lease comes up for renewal in 3 years' time. That might seem some way off, but let me assure you it is not! I expect with the backing of the management board to bring a resolution to the 2018 AGM which asks for approval from members to buy an office outright. Renting is an expensive business and it is dead money with nothing to show at the end of the lease. Owning our own property is an investment for the future and in my opinion in the best interests of the membership. It will also reduce the Institute's overheads too. With this in mind, we have started to build a financial fund to enable us to pursue this goal if the membership votes to accept the resolution as and when it is made.

Educating new surveyors

We have talked endlessly in the past couple of years about the route into marine surveying for younger surveyors. This remains a topic for hot debate and no-one can come up with a watertight, guaranteed solution. However, the two IIMS Professional Qualifications in Large Yacht & Small Craft and Commercial Ship marine surveying remain popular and a good starting point for many.

The IIMS course content (now an award winning programme) is undoubtedly amongst the finest material available anywhere in the world on the subject of marine surveying. The content is constantly being modified, updated and refreshed. A new module has been released for those who work in the area of surveying steel narrowboats. It was humbling that our significant activities in this area were recognised recently when the International Maritime Club gave their Award for Excellence to IIMS as the leading maritime training provider. Some accolade and one we are justly proud of.

The intake this year has been fair, until October when we attracted almost 30 new students into the course. No one can recall having such a large intake ever before.

Publishing and communications

The Institute continues to work very hard to deliver meaningful, pertinent and entertaining communications for its members and others engaged in the marine sector through a variety of channels and media.

These days the jewel in the crown would appear to be this very publication, the quarterly Report Magazine. It is one of the aspects of my job I very much enjoy. The search for meaningful and relevant editorial content is exhaustive. Getting the right balance between the various marine surveying disciplines is a constant battle. Commissioning experts in various fields to share their knowledge is ultimately rewarding. Hearing from members how much they enjoy reading it is wonderful. My thanks to Craig Williams who designs and interprets the words in such a professional way.

The series of handy guides has now reached sixteen and there are more waiting to be brought to market and published. We have sold hundreds of copies of the various guides and they are well received in the market place.

Our social media presence continues to bear fruit. We have over 1,300 followers on Twitter and broadcast tweets most days of the week to that audience. Our LinkedIn discussion group is now well over 1,000 individuals, including some influential organisations and people. We have continued to build our video library via the IIMS Marine Surveying YouTube channel. Currently there are over 100 videos made at various locations, events and conferences, all free to watch.

We now publish and maintain 15 web sites. Astonishing. But still iims.org.uk is the main site. If you do not visit it regularly, you are missing out. There are two landmarks to report. Firstly we have just published our one thousandth story on the site; and secondly the site attracted over 18,000 unique visitors last month – a record.

Membership

Camella Robertson replaced Jan Cox, who retired at the start of the year, as Membership Secretary and has proved to be popular. Over the past year membership has grown once again and we are now at our highest ever level of full members with around 600. The area of biggest growth has been in the Technician member category. This is largely as a result of the work we are doing with the RMCI and eCMID programmes through the Marine Surveying Academy.

In the past few weeks we have embarked on a strategy to target and attract new members to the Institute. The work we have done with our specialist below the line digital marketing agency has paid handsome dividends with the Professional Qualifications

Training seminars, workshops and conferences

One way and another, 2017 will go down as a busy and memorable training year. We kicked the year off with two days of Recreational Craft Directive training in the UK. A visit to the Royal Huisman superyacht yard in northern Holland was an eye-opener and a privilege for all those who attended. Our annual visit to Palma for the Western Mediterranean Large Yacht & Small Craft Working Group (LYSCWG) was a success as were the Scottish LYSCWG in November and the 'Super' training event at Portsmouth. Our afternoon session run at Seawork by the Small Craft Surveyors Forum (of which IIMS is a keen and active participant) was very well attended. We have attracted some great and competent speakers over the year, who have willingly shared their extensive knowledge with delegates. In mid-year, we organised a highly successful joint IIMS and eCMID Conference and Seminar in Singapore. If I have one sadness this year, however, it was the very low turnout at the IIMS London Conference. The content delivered over the two days was quite excellent according to those who were present, but not enough

people were present to benefit from it. The management board reflected on this and it has been decided there will be no London Conference in 2018 and a separate announcement will be made about the AGM.

One of the new innovations, successfully launched this year, was the roll out of semi-regular IIMS online seminars using the Zoom platform. Over 130 delegates have joined the various 90 minute presentations. As well as taking the live feed, delegates receive a copy of the presentation and a video made of it too. Watch out for more online seminars coming in 2018. It is a great way to learn and be involved without having to leave your desk!

Committee involvement

Time has come for the process of succession planning to take place and a refresh of the make-up of the various committees. Age catches up with us all eventually and to ensure a seamless transfer in the mid-term, this is being addressed now. I welcome expressions of interest from any member who feels they might like to contribute to the Professional Assessment and/or Education Committees. We also need some new members on the IIMS management board in a non-executive capacity. These roles are not onerous and are on a voluntary basis, although travel expenses are reimbursed should you need to attend any face to face meetings. If this would interest you, then make contact with head office.

The Marine Surveying Academy (MSA) surges onwards

If you had told me three years ago that IIMS and MSA would be playing a leading role and making a significant difference in two distinct and highly important areas of the marine sector, I would have not believed you. But the simple fact is that the work we are doing in the areas of superyacht coatings inspections and the accreditation of inspectors working in the offshore auditing arena has put us at the very heart of these sectors.

Hilary Excell is the Business Manager, responsible for the growth and development of MSA and this has been a buoyant year. After a slow start, the Registered Marine Coatings Inspectors (RMCI) programme has sprung into life later in the year. Over 100 coatings experts have now achieved the qualification and been through the course and examination. Leading consultancies such as Wrede and CCS have put their teams through the programme. Increasingly now, the superyacht yards and builders are insisting on only qualified RMCI being allowed to do the inspections.

The other area of operation is the eCMD Accredited Vessel Inspector programme which we run on behalf of the International Marine Contractors Association (IMCA). From humble and quite slow beginnings, this programme has gained significant momentum. This year we had the opportunity to meet many of those enrolled in the scheme at the inaugural eCMID AVI seminar in Amsterdam in April, followed by another gathering in Singapore. Over 400 have now come forward to be assessed and over 350 have gained the accreditation. This is of particular relevance as from 1 January 2018, IMCA is closing out those who are not recognised by accreditation and these people will not be able to enter details on to the new eCMID database. Inevitably we expected an upturn in interest and demand and so it has proved. A flood of applications for accreditation has been received in the last quarter of 2017. There will certainly be some challenges for us to manage in the coming weeks as this deadline looms and then becomes a reality. There are new guidance notes to prepare, new CPD to devise and new content added to the ecmidvesselinspectors.com web site. 2018 promises to be a very full on and eventful year for Hilary and her new team, not least as we evaluate several other similar accreditation courses that we may bring to market in due course.

And finally my personal thanks

There are simply far too many people to name individually, but there are many people who contribute to the success of the organisation, many unsung heroes amongst them. My thanks to my colleagues who have stood by me throughout the year. I am also appreciative of those who have written for The Report Magazine and given freely of their time to present at the various seminars and training events around the world for your benefit. I also say thank you to the various Committee Chairmen and committee members, Regional Directors and the various international branch secretariats. And finally I want to thank the management board for their continued support.

I wish you all the best for the festive period and may you have a prosperous year in 2018.

Mike Schwarz
Chief Executive Officer

SURVEYORS PLAY A KEY ROLE IN CHALLENGING THE HULL INSURANCE LANDSCAPE

BY **RAMA CHANDRAN**
HEAD OF MARINE, *QBE INSURANCE (SINGAPORE)*

Even in a world characterized by rapidly changing technologies, the traditional method of maritime shipping continues to serve as an important conduit for both trade and business. Shipping remains the backbone of globalization and lies at the very heart of the cross-border transport networks that support supply chains and enable goods to move between countries.

Last year's bankruptcy of Hanjin Shipping served to highlight the critical importance of the maritime sector to the global economy. The financial demise of South Korea's largest container line and one of the world's top ten container carriers in terms of capacity had multiple knock-on effects, including sharp increases of 50 per cent and more in freight rates for routes operated by the company. Additionally, many of the world's manufacturers faced delays in receiving raw materials and parts, which also meant that delivery of their products was also delayed.

INSURANCE COVERAGE ENSURES VIABILITY

Marine insurance plays a critical role in ensuring viability of the world's shipping industry. Insurance protects against the many risks associated with the moving the cargo and raw materials across vast oceans and over borders. Without such insurance coverage, the shipping industry would face critical dangers in their day-to-day operations. Global trade flows would also be negatively impacted.

The Hanjin Shipping bankruptcy illustrated the detrimental effects that financial setbacks can have on shippers as some US$14 million in cargo was stranded at sea. The financial impact on firms conducting trade through Hanjin was huge.

Insurance coverage helps protects shippers who experience loss or setbacks by apportioning resources collected from the wider community of ship owners to those that have a genuine need for it. Simply put, ship owners rely on insurance coverage as their safety net. However, as of late, the buffer that insurers have between the collective pool of finances collected through premiums and the cost of claims paid out is beginning to thin, which is ultimately unsustainable. As that buffer continues to erode, marine insurers may be forced to adjust premiums or increase deductibles as a countermeasure to ensure they are able to continue supporting the maritime shipping industry in the foreseeable future.

To this effect, surveyors play a key role in making sure that insurance premiums are kept both realistic and competitive for the marine shipping industry. As insurers are unable to conduct damage assessments for claims ourselves – due to the obvious conflict of interest – we must rely almost exclusively on the intelligence of survey reports filed by marine surveyors to make the final decisions on the legitimacy and payout of claims.

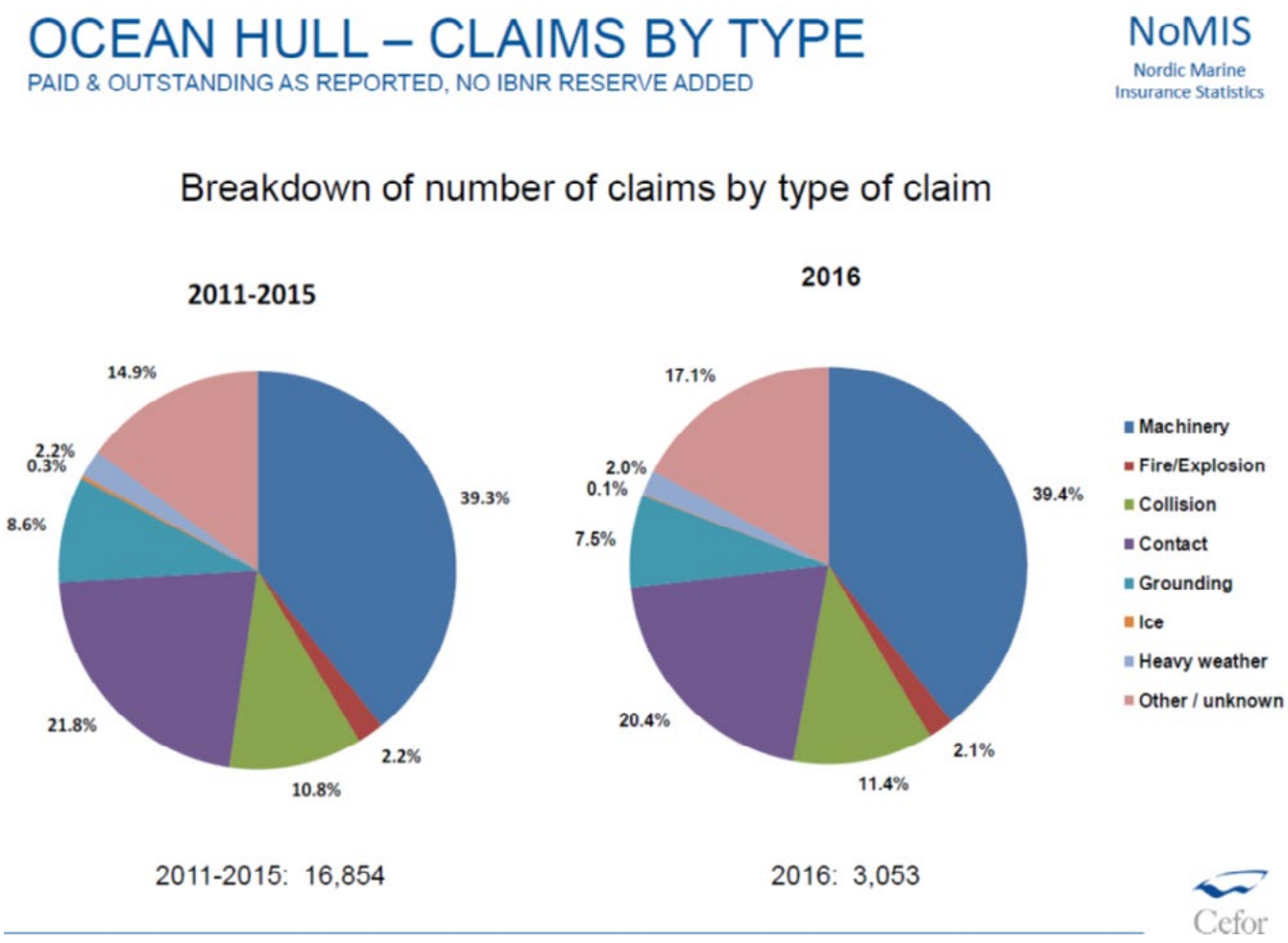
An in-depth report that examines causality rather than merely stating the issue at hand offers our underwriters more intelligence about the situation at sea, enabling them to conduct proper assessment and to determine whether there are more systematic issues in play that can be addressed to ensure a lower rate of recurrence.

SIGNIFICANT CLAIMS ON MACHINERY

Traditionally, machinery claims have represented the most significant portion of claims paid out by marine insurers. The probability of damage to or loss of machinery would be higher than that of hull damage, just by virtue of there being so many components on a ship – which themselves are exposed to physical, mechanical and electronic vulnerabilities as a result of being continuously in use (and even under stress). Damage to the hull of the ship would usually only arise in collisions or grounding or due to extreme environmental factors and weather conditions.

In 2016, machinery claims form close to 40 per cent of claims processed by marine Insurers and account for the largest portion of total claims paid out, at 42.1 per

ALMOST 40% DUE TO MACHINERY



Source: Nordic Marine Insurance Solutions

cent. This means machinery claims represent a grey area in the insurer-insured relationship as insurers are duty-bound to shoulder extensive risk and liability when it comes to machinery loss or damage.

Under the Institute Time Clause (ITC), which governs what is insurable under marine hull insurance, negligence of master officers, crew, pilots, repairers or charterers are insured perils. This means that insurers are expected to pay claims out, even if the incident was due to negligence on the crew's part. With ship crews not being held liable for their own errors, and instead transferring this liability to their insurers, a potentially careless ship maintenance culture can easily take hold on board vessels.

As such, the inefficiency arising from this provision in the ITC is likely to be one of the contributing factors to the slowly diminishing buffer marine insurers need at their disposal to continue supporting the shipping industry in times of need and peril. Insurers will never skirt their responsibility to work positively with the marine shipping industry. However, more needs to be done to ensure ship crews maintain a culture of thorough maintenance and servicing.

To help understand the waste this entails, consider this: the shipping industry paid a total of US$7.6 billion in insurance premiums in 2015 of which US$2.6 billion were machinery claims (again, the most significant portion of total claims paid out). The average cost of a ship's main engine is around US$1.5 million, which essentially means that the amount paid out in machinery claims in 2015 could finance more than 1,700 new engines – or more than the 1,600 total engines delivered for new ships that year. This emphasizes the need to address inefficiency in maintenance for existing equipment.

IDENTIFY THE ROOT CAUSES TO MINIMIZE LOSSES

Of course, the smooth operation and serviceability of a ship hinges on many factors that go beyond the regular maintenance of components and machinery. Other important considerations include crew training and competency, as well ensuring the right fuel treatment

and lubricating oil management. However, continuing to pay out claims for replacement or repair of damaged components without first finding the root causes of these problems will only lead to further gradual depletion of the buffer between claims paid and premiums collected, which as noted earlier is ultimately lead unsustainable.

As former seafarers, captains and chief engineers, surveyors are well-versed and very familiar with the inner workings of ships, whether in relation to a ship's systems and components or the working culture of its crew. This puts surveyors in a prime position to offer greater analysis and insight into deeper-seated issues which, once rooted out and addressed, could see both the shipping and marine insurance industry operate more sustainably. Ships and their machinery would then function more effectively and insurers could see less recurrence in types of claims paid and see an increase in the buffer needed to continue supporting the marine insurance industry's sustainably.

While a surveyor's main role is to investigate a claim and present their assessment of damages reported to insurers for claims processing, the detail in each individual report goes a long way to helping identify other factors that contributed to the loss or damage of machinery. Armed with a greater level of detail, insurers can then decide if support beyond a financial payout is needed to help the ship achieve greater efficiencies in the long run, lessening their overall reliance on insurance claims pay outs to keep their vessel in top shape. Surveyors, as such, need to recognize the critical importance of their roles and the wider impacts that their work can have on the overall global shipping sector.

While we are aware of the many underlying issues that affect the overall serviceability of a ship and its components, insurers also understand that the increasingly challenging and competitive global shipping landscape has caused ship owners and shipping managers to stretch resources as far as they possibly can. This has given rise to some less-than-ideal ship maintenance practices, including the use of parts from non-original equipment manufacturers and employment of non-approved workshops for servicing of high-tech specialised equipment. Also delaying equipment or engine overhauls till the very last minute, and the employment of unauthorized service engineers.

While this might help cut down on costs for ship owners in the short term, delayed servicing and use of non-original equipment could have detrimental long-term effects on a ship's systems and components, leading to an increase in claims made for damaged or lost machinery.

CONDUCTING THOROUGH RISK ASSESSMENT

Beyond providing financial payouts in times of peril, and providing insulation from financial setbacks for ship owners plying their trade in global waters, marine insurers also play advisory roles to ship owners by conducting thorough risk assessments as part of the regular policy writing and review process. With a greater awareness of root issues that lead to system failures on ships, insurers are then able to alert and educate ship owners and their crew on best practices which can serve as the first step in cutting down overall down time or even grounding of a ship.

The role of surveyors and insurers will need to evolve with and adapt to the challenging hull landscape that ship owners and crews work in today. Acknowledging the many challenges shippers face to operate with lesser expenditure and cost, surveyors should see their roles move from simply reporting damages or loss of a ship's components and serviceability to also being investigators to identify root causes of issues that have surfaced. This investigative mindset and emphasis on finding the real reasons behind persistent problems should be regarded as common practice in generating damage assessments.

The delivery of larger ships that operate with more sophisticated systems will also drive significant change. As a result, ship owners' exposure to risk is becoming greater, and this will mainly be borne by their insurers. While insurers have supported the marine shipping industry since its early days, the increasing competition both in the shipping and insurance landscape has also increased pressure on loss ratios, which could end impact the price of premiums and deductibles in policies going forward.

As marine surveyors are the eyes and ears of insurers, the importance of detailed reporting cannot be understated. Insurers have a responsibility to ensure they maintain an adequate buffer to be able to finance any major catastrophes, such as the Costa Concordia shipwreck in 2012 or the Sewol ferry disaster in 2014. However, if the buffer continues to be depleted by claims for small but increasingly common issues arising from crew negligence or neglect, the desire of insurers to continue to financially support firms caught in unfortunate eventualities could be compromised.

Against this backdrop, surveyors need to adopt the greater responsibility of being investigators on top of being reporters, to help support insurers' ability to mitigate and transfer the risk of perils at sea for the global shipping community. After all, insurers are here to support sea trade, and seek to do so by providing insulation through adequately priced premiums that make economic sense to owners. Any imbalance in the economics of marine insurance is likely to have a direct effect on premiums deductibles and cover, which then also directly affects the viability of sea and international trade. Collectively we need to do all we can to stop that from happening.

The problem of oil washed overboard from hydraulic deck equipment...

... and the regulations and environmentally acceptable lubricants surrounding the issue

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Regulations and Environmentally Acceptable Lubricants (EALs)

With stringent global environmental regulations increasing, oil spills and leaks continue to be of great concern in marine operations. While most think of oil spills in terms of major failures or leaks, the more common ongoing fluid leakage and discharges from marine equipment result in millions of gallons of oil and hydraulic fluids being released into the aquatic environment each year. Chronic leaks, which are very difficult to prevent, far outpace catastrophic events and result in lost productivity, environmental damage, costly fines, remediation costs, and negative public image.

To address the increasing concern regarding the impact of spills, leaks and discharges of chemicals into the oceans, the U.S. Environmental Protection Agency (EPA) developed the 2013 Vessel General Permit (VGP). The VGP is applicable to all commercial vessels larger than 79 feet, operating within three nautical miles of either the United States coastline or in any of the Great

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For over 30 years Dr. Beaver has been actively involved in the commercialization of safer consumer and industrial chemical products. His experience ranges from developing low-VOC waterborne coatings to creating safer alternatives to replace arsenic-based wood preservatives. His current research efforts focus on safer zero-VOC cleaners, degreasers, and specialty lubricants and functional fluids for DIY and commercial use.

Dr. Beaver is the principal inventor on more than 14 patents covering product design and novel sprayer technologies for cleaners, coatings, and lubricants. He has served as President of the Southern Aerosol Technical Association where he currently serves as a member of that association's board of directors. Dr. Beaver is also active within the National Aerosol Association, the Western Aerosol Information Bureau, and the Society of Tribologists and Lubrication Engineers. He currently serves on the Industry Advisory Board for the Tribology Minor in the College of Engineering at Auburn University.

Dr. Beaver has spoken on various regulatory topics at the international, national and regional level. He is considered an expert in VOC regulations (CARB, SCAQMD, OTC, LADCO) and formulating products to meet those requirements.

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Lakes. It requires the use of Environmentally Acceptable Lubricants (EAL) in equipment that requires a lubricant and has a potential oil-to-water interface.

Marine Applications that use EALs

EALs should replace traditional petroleum lubricants in all marine applications where there is any oil-to-water interface. Marine vessels contain a variety of equipment that require lubricants, oils or greases. The oil-to-water interfacing equipment includes stern tubes, stabilizers, thrusters, rudders, propellers, bow thrusters, etc. While legislation has not yet mandated the use of EAL in deck equipment, it is recommended by the EPA in the 2013 VGP to use biodegradable lubricants. Applicable deck equipment includes deck cranes, winches, mooring drums, windlasses, capstans, emergency towing arrangements, hatch covers, etc.

Data on Discharge Contributors

Dagmar Schmidt Etkin, Principal Consultant at Environmental Research Consulting, conducted a study on operational discharges of lubricant oils within ports and harbors, as well as when in transition from harbor to port. In turn, an abstract was developed by Etkin titled "Worldwide Analysis of In-Port Vessel Operational Lubricant Discharges and Leakages".

Etkin concluded that most blue water ships operate with oil-lubricated propulsion systems and a significant number of applications for on-deck and in-water (submerged) machinery utilize lubricating oils as well. As what was once considered typical "operational consumption" of oil – oil leakage from propulsion systems – is now a major oil pollution concern with hefty legal consequences. With the leakage caused by stern tubes, as well as spillage from other types of lubricants used in maritime operations, this has driven the need to assess alternatives to conventional oils and a means to oversee and alleviate the discharging of lubricants from a vessel.

Equipment with an oil-to-water interface such as stern tubes, stabilizers, thrusters, rudders, propellers and bow thrusters are the biggest discharge contributors and have been the primary focus of environmental regulations e.g. EPA's 2013 VGP. Equally important are other discharges that result from runoff or wash-off from deck equipment such as deck cranes, winches, mooring drums, windlasses, capstans, emergency towing arrangements, hatch covers, etc. Deck equipment can have leaking seals on shafts and in turn cause gear oil leakage that will leak onto the deck and will ultimately wash over the side of the vessel and into the water. Intermittent spillage or leakage of petroleum-based oils are very apparent due to the rainbow sheen that resides on the surface of the water.

Etkin estimated the discharges from deck machinery and in-water machinery based on the amount of oil used that was reported to a lubricant supplier in a five-year collection of data on daily usage of lubricants while in port and en route of port. In Table 1 below, Etkin estimated the average per-port visit inputs (discharges) from deck equipment from all vessel types. Keep in mind that leakage from deck machinery lubricants can enter the water during washdowns and stormwater runoff.

Table 1. Average Input of Lubricants from Deck-Based Machinery in Port

Deck Machinery Type	Average Input per Port Visit (liters)
Deck crane gears	0.073
Dredge pump shaft bearings	0.033
Gear-driven mooring winches	0.102
Gear-driven windlasses	0.024
Hose-handling cranes	0.007
Hydraulic system prov cranes	0.022
Hydraulic deck machinery	0.197
Hydraulic windlass mooring winches	0.019
Hydraulic capstans	0.030
Hydraulic cranes	0.096
Hydraulic hatch systems	0.126
Hydraulic mooring winches	0.110
Hydraulic split systems	0.007
Hydraulic system stern ramps	0.027
Miscellaneous hydraulic systems	0.210
Ro-ro hydraulic systems	0.007
Hydraulic water-tight doors	0.004
Hydraulic windlasses	0.095
Towing winches	0.005
Towing winch gears	0.003
Hydraulic trim tabs	0.025
Tugger winches	0.010
TOTAL	**1.232**

D.S. Etkin. (2010)

In Table 2 shown right, Etkin estimated the average inputs (discharges) of lubricants from deck equipment from all vessel types. According to research findings provided by Etkin, it is estimated that approximately 10% of the oil that enters the water is through runoff or deck washdowns.

Based on Etkin's research, discharges from deck equipment were primarily from bulk carriers and container ships. Hydraulic deck equipment was the greatest source of lubricant discharge.

Table 2. On-Deck Machinery: Lubricant Consumption per Vessel Port Visit

Vessel Type	Average Consumption per Port Visit (litres)
Bulk Carrier	57.92
Container Ship	57.70
General Cargo	52.14
Chemical Tanker	51.00
Cement Carrier	42.38
Passenger/Ro-Ro	39.96
Ro-Ro Cargo Ship	36.90
Self Disch. Bulk	30.47
Crude Oil Tanker	30.18
Pontoon	25.00
Chemical Tanker	24.79
Dredger	23.60
Refrig. Cargo	21.03
Oil Prod.Tanker	20.12
Tug	20.00
Ore Carrier	19.00
Offshore Tug	13.40
Passenger /Cruise	12.50
Motor Hopper	12.33
Heavy Load Carr.	11.67
Fishing Vessel	11.50
Crane Ship	11.00
Container Ro-Ro	10.87
Vehicles Carrier	10.17
Trans Shipment	9.50
Wood Chip Carr	9.50
Offshore Supply	8.56
Bulk/Oil Carrier	7.00
Dredger	7.00
Palletised Cargo	7.00
Research Vessel	6.67
Live Fish Carrier	6.00
Passenger/ Cargo	5.25
LPG Tanker	5.05

D.S. Etkin. (2010)

Solutions that meet your needs

For heavy duty deck equipment, the shipping industry need EALs that offer the appropriate performance characteristics for the harsh environment – water resistance, good spray-off resistance, good shear stability and the ability protect ferrous and yellow metals – while also meeting the stringent global regulations that are in effect. Utilizing solutions that offer optimal performance while offering a safer choice for employees to handle with less impact on the environment is the right choice. In addition to regulations requiring EAL usage, cleaners that are VGP compliant are also required. These are often an overlooked component of the VGP.

The Paradox of Deck Equipment Runoff

All deck surfaces and equipment will periodically impact water quality — either through precipitation, green water or sea spray — resulting in vessel runoff. Green water carries residue like oil, grease, paint chips and debris from deck or equipment surfaces. It can also include runoff from deck washdowns performed by the crew, which includes soaps, detergents and cleaning solvents. Discharge rates from deck runoff vary from vessel to vessel depending on a wide variety of factors including weather, frequency of deck washdowns, and the type, size and maintenance state of deck machinery.

What has been an interesting paradox is that the focus for oil entrance into the oceans has focused on below surface propulsion systems. Granted, those systems contribute the most to polluting the environment with petroleum oils but the oils on the surface of the ship that end up in the water are largely ignored by both the controlling agencies and the ship owners themselves. It's only a matter of time before the scrutiny of multiple environmental agencies focus on the oil coming from the surface equipment. Why aren't ship owners "early adopters" for using EAL fluids in all equipment on the ship where the chance of it ending up in the water is great? It's a mindset! There are those ship owners that have started using EALs in their surface equipment because they believe in environmental protection and doing their part. However, most will wait until they are forced by legislation or liability concerns to adopt EALs.

Choosing the Most Suitable VGP Compliant Cleaner

Little attention has been paid to an important, but often overlooked component of the VGP regulations: routine deck and cargo hold washdowns. Cleaners aren't typically top of mind when discussing VGP compliance. They are 100% loss products and little thought is given to the safety of those using them or the impact of the cleaner when it ends up in the ocean. However, just like the oils, they can impact the aquatic life in the ocean if proper attention isn't paid to the type of cleaner used. In addition to being phosphate free and biodegradable, the cleaner should be effective in cleaning but also pose no risk to the people using them or the aquatic life in the water. Safety Data Sheets clearly outline the hazards to both the workers and the environment, but in many cases, the hazards are overlooked or the buyers selecting the products are unaware of the safer alternatives.

What's Next?

According to environmental consultants and advisors, there are currently thousands of new environmental regulations awaiting attention from regulators around the globe. Different standards hamper growth and thus, pressure to harmonize regulations is likely to continue alongside the regional and global integration of markets. Currently, EPA and the International Maritime Organization (IMO) are working together to develop and implement legal standards that address vessel source pollution and ocean dumping. EPA also works with the United Nations Caribbean Environment Program based in Jamaica, focused on reducing land-based sources of marine pollution, including in the Gulf of Mexico and the wider Caribbean region. With the VGP, the pending Small Vessel General Permit (sVGP), and other global sustainability initiatives firmly in place to regulate discharges, you can select the right EAL or cleaner that will meet or exceed your equipment needs. Keep in mind that while EALs are mandated by legislation to be used in oil-to-water interfacing equipment, they are not required but recommended by the EPA to use in all deck machinery/ equipment.

Conclusion

In marine operations, oil and lubricant spills and discharges are unavoidable. The industry has worked diligently to meet and exceed what is required of operators in these situations and to proactively minimize their adverse impact on the environment. Broad use of EALs is one way to help address the issue, whether it's the requirement to use an EAL with oil-to-sea interfacing applications or a recommendation to use EALs with deck machinery. Using EALs in all equipment where there is a risk of the oil getting into the water is not only complying with current regulations but is the right thing to do for the aquatic environment.

Legislation and Environmentally Acceptable Lubricants (EALs)

The marine industry is one of the most heavily regulated industries and was amongst the first to adopt widely implemented international safety and environmental

Legislation and Environmentally Acceptable Lubricants (EALs)

The marine industry is one of the most heavily regulated industries and was amongst the first to adopt widely implemented international safety and environmental standards. It is principally regulated by the International Maritime Organization (IMO), which is responsible for the protection of the marine environment and has, over many years, adopted a wide range of measures to prevent and control pollution caused by ships. One of the main goals of IMO is to mitigate the effects of any damage that may occur as a result of maritime operations and accidental spills, leaks and discharges.

In 2008, the EPA issued the first version of the Vessel General Permit (VGP). The VGP was amended by the EPA in 2013 to require all vessels to use EALs, rather than mineral oils, in all oil-to-sea interfaces unless technically infeasible.

Environmentally Acceptable Lubricants are defined by the EPA as offering these three characteristics. First, they must be "biodegradable" - biodegrading into carbon dioxide and water by ≥ 60% or more within 28 days (according to OECD 301B or ASTM D7373 methods). Next, they must be "minimally toxic," causing only a light impact on the aquatic environment (LC50> 100mg/L for lubricants and LC50>1000mg/L). Lastly, they are "not bioaccumulative," and must have a low propensity to bioaccumulate in organisms.

Reporting Under "The Sheen Rule"

The Clean Water Act of 1972 mentions discharges of oils should not exhibit any visible 'sheen' on the water's surface otherwise it is considered a pollutant (according to CFR 40 Part 435 A). This has led to a common misperception that the United States Coast Guard approves oils based on the oil not leaving a sheen. Under the legal authority of the Clean Water Act (CWA), the Discharge of Oil regulation, more commonly known as the "sheen rule," provides the framework for determining whether an oil spill or discharge to inland and coastal waters and/or their adjoining shorelines should be reported to the National Response Center. Specifically, the regulation requires the person in charge of a facility or vessel responsible for discharging oil that may be "harmful to the public health or welfare" to report the spill to the federal government. The regulation also establishes the criteria for determining whether an oil spill needs to be reported.

The criteria are:

- Discharges that cause a sheen or discoloration on the surface of a body of water;
- Discharges that violate applicable water quality standards; and
- Discharges that cause a sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines.

Environmentally Acceptable Lubricants (EALs) offer a full range of performance levels while minimizing (but not eliminating) the risk of triggering the reporting requirements of the "sheen rule". It's important to note that correctly formulated EALs provide higher

performance and longer service intervals than some petroleum based lubricants.

EAL Confusion in the Marketplace

There's conflicting information in the marketplace about EALs. A lack of agreed-upon definition is one contributing factor, as is lack of awareness of the four different types of EALs that are available. Inconsistent performance claims from manufacturers have also led to the confusion.

Let's address a few myths right from the start:

EALs DO:

* Perform equal to or better than petroleum lubricants
* Mitigate the discharge's environmental impact
* Improve productivity, which leads to profitability

EALs DON'T:

* Eliminate spill occurrence
* Eliminate the need to report a spill or discharge
* Eliminate the need to clean up a spill or discharge

The Four Types of EALs

According to ISO standard 6743/4 for hydraulic fluids, there are four chemically different types of lubricants available to meet the specified needs for environmental acceptability. The categories are as follows:

- Vegetable Oils (HETG)
- Synthetic Esters (HEES)
- Polyalkylene Glycols (HEPG)
- Polyalphaolefins (PAOs) and related hydrocarbon products (HEPR)

While these categories may be unfamiliar to some, the typical fluids that fall into these categories will be more familiar, and it quickly becomes apparent which are the best options available for marine-based hydraulic applications.

Here are the four types of EALs, along with their performance advantages and disadvantages:

HETG

This type of environmentally friendly fluid is better known as conventional vegetable oil-based fluid. While these fluids are readily biodegradable and deliver a lower impact on the environment, enhanced frictional characteristics and improved viscosity index at high temperatures, in a marine setting this category's performance can be limited due to oxidative and hydrolytic stability. With the demands of certain applications, HETG lubricants' limited temperature range reduces the performance they can deliver and, often, their life cycle expectancy.

HEPG

Polyglycol synthetic (PAG) lubricants deliver a fire-resistant option. The downside is that they frequently are not compatible with conventional seals or filters. In switching to or from another type of lubricant, HEPG fluids are also typically not compatible with petroleum- or vegetable-based fluids, which could add significant maintenance costs to flush or remove the previous fluid before introducing the replacement fluid. These synthetic lubricants absorb water over time, which negatively impact performance and lead to the formation of rust or acid and ultimately damage equipment.

HEES

Synthetic ester-based lubricants make up the HEES type of fluid. HEES fluids are often hydrolytically unstable, meaning that their molecules essentially "unzip" when water is introduced. These lubricants are also susceptible to acid formation and subsequent seal deterioration.

HEPR

Poly Alpha Olefins (PAOs) and related products, in particular bio-polyalphaolefin (BPO) fluids, deliver the best option for most marine hydraulic applications. These fluids are more durable and able to operate in a wide range of temperatures, which leads to longer fluid life and often a lower total cost. HEPR-type fluids offer good seal compatibility and deal well with water ingress, as they separate from water (demulse) without impacting their performance properties or their chemical stability. This demulsing characteristic also allows for the fluid to be separated from the water, filtered, and returned to use.

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The P&I Insurer's Role in Salvage

BY **EAMON MOLONEY**

Major marine casualties are rare events but values are increasing and so are the liabilities that need to be addressed.

Eamon Moloney is North P&I's Deputy Director (Claims). Eamon joined the Club from Eversheds, where he was Partner & Head of Admiralty Law, specialising in marine casualties and pollution. Before qualifying as a lawyer Eamon spent ten years in the Royal Navy, with worldwide service as the navigation officer of minesweepers, frigates and destroyers. He was named 'Shipping Lawyer of the Year' at the Lloyd's List International Awards of 2005.

In every marine casualty the parties involved have a shared interest in bringing about the best outcome for the crew and vessel, and the most successful response efforts are usually those with the best level of communication and understanding. A P&I Club is only one of many parties, but the range of liabilities that we indemnify and the specialist knowledge that we contribute ensures that P&I involvement is always "from cradle to grave."

In every casualty response, the safety of life (most often that of the crew) is paramount. This priority is not restricted to the immediate response, because the ever-present risk of criminalization means that crew members often remain in the front line even after the immediate dangers to life, the environment, and property have been addressed.

It is for the master and owners to assess the dangers facing the ship and crew and to take whatever steps are necessary to manage those risks; very often the appropriate response will be to bring in professional salvors. The master and owners must be confident that their insurers will support whatever professional help is needed to mitigate the dangers of the situation. In the face of "real and present danger," time spent consulting or negotiating is time wasted and can only increase the dangers faced by the ship and crew. The standard casualty-response contracts, particularly Lloyd's Open Form ("no cure-no pay"), avoid the need for consultation and negotiation in emergency situations, and masters and owners should not hesitate to agree them. When assessing danger, a good test is to ask yourself, "What will happen if I do not accept this assistance?"

Casualty Response

On average, most owners will only experience a significant casualty every 10 years, and some will never do so. This is an encouraging statistic, but it often means that many members of owners' response teams will be experiencing their first, live casualty and learning on the job. Conversely, insurers and brokers specializing in marine casualty will encounter these situations regularly.

Despite any lack of direct experience in marine casualties, the standards of casualty response are improving steadily. This is partly due to better communications (there are still enough of us who remember telex), but is more down to greatly improved Safety Management Systems and, in particular, the value of drills and exercises.

Practice makes perfect and for owners who are implementing or exercising a casualty response plan, good advice is not to be too ambitious too early. Initial exercises should test basic systems, teams and communications. Only when those are working properly should you introduce more lifelike exercises, in real time and involving a range of risks and responses. P&I Insurers are always happy to contribute our experience to marine-response training and drills.

For most crew members, experiencing a major casualty will reinforce the value of their skills and training. A small minority may be adversely affected and they will need specialist assistance, which the P&I Insurer will be ready to provide.

A significant feature of every casualty response is the period of chaos, which may be an hour or it may be three weeks, depending on the nature of the casualty, the location and the assistance required. A key feature of casualty response training is to ensure that during this period of chaos, the correct priorities are identified and the necessary and immediate steps are taken. If your priorities are first life, then the environment and then property, you will not go far wrong.

Casualty Management

No two marine casualties are the same, but the similarities are greater than the differences and a number of useful techniques can be applied to almost every casualty. Here are a few of them:

Casualty management involves an ever-increasing number of parties, especially if there is a risk of damage to the environment. A key to good casualty management is liaison, and whilst this can be done by e-mail, there are some alternatives.

Firstly, a daily telephone conference, ideally with a single dial-in number, a fixed time of day and a fixed agenda. The first two conferences may appear chaotic but very quickly the participants will learn the value of listening rather than talking. Do not use the conference to discuss what was done today, the important thing is to agree what will be done tomorrow - in this way conflicts and bottlenecks will be minimized. Because of our involvement across a range of issues, P&I insurers are often well placed to arrange and manage these conferences.

Another valuable technique is the cup of coffee. In most casualties it is a good idea for the insurers and brokers to meet as soon as practicable, if only to put a face to each name. It is surprising how the investment of 30 minutes over a cup of coffee will help solve the myriad issues that will arise over the coming weeks and months. Again, this is something that P&I insurers can and will deliver, often in conjunction with the insurance brokers.

A more ambitious technique is to attend on-site. The traditional view is that P&I insurers should not show their face at a casualty because we are "the money" and would therefore attract undesirable attention. A developing view is that there can be significant value in an early visit by the P&I Club, especially in those casualties involving regulatory and environmental agencies. Many local officials will

not be particularly experienced in marine casualty response, and more often than not they welcome early and informed liaison with P&I insurers. This is an approach encouraged by the International Group of P&I Clubs.

Joint appointments of specialist advisors, including lawyers, surveyors and consultants will often deliver significant benefits. Shared advice will be better, quicker and cheaper and, with goodwill and clear analysis, any conflict of interest can be identified and managed. There is a developing trend for owners to identify their principal advisors in their Safety Management Systems, ideally these preferences will be discussed with property and liability insurers so that when a casualty occurs, there will be maximum sharing and minimum duplication. P&I insurers, with our global network of offices and correspondents are well placed to advise on appropriate appointments in any location and at any time.

There are many other areas in which P&I insurers add significant value to casualty management but the last one that I will discuss here is the environment. In some jurisdictions, notably the U.S. and Australia, there are comprehensive plans to address environmental damage and these will be implemented automatically and without much input from the owner. However, in the majority of cases the coastal state will have much less well-developed environmental response plans and in these cases P&I insurers can add significant value. The International Tanker Owners Pollution Federation (ITOPF) is a not-for-profit environmental consultancy specializing in marine pollution. It is headquartered in London and 90 percent funded by P&I insurers. This arrangement gives all members of International Group Clubs automatic access to the full range of ITOPF's technical and information services, usually at no cost.

ITOPF maintain comprehensive databases of pollutants, ports and coastlines. For any incident, however small, they are able to advise on risks and response techniques. In larger cases they will attend on-site and offer their specialist advice freely to anyone who will listen; very often they will quickly be incorporated into the coastal state's emergency response team. ITOPF do not conduct clean-up operations themselves but their advice and leadership can be critical in ensuring that appropriate response measures are put in place. ITOPF's input is also important when assessing the reasonable cost of clean-up and restitution. Access to ITOPF's unparalleled knowledge and experience is a material contribution that P&I insurers alone can provide.

Claims

Once the casualty has been stabilized and the immediate risks to life, property and the environment have been addressed, casualty management generally moves to address the claims arising. Many of these are large, complicated and can take a surprisingly long time to resolve. Constant attention to detail is necessary and, as always, close liaison between all interested parties will deliver significant benefit. Principal claims involving P&I insurers include:

Crew: Beside the liabilities attaching to death and personal injury, which should always have priority, crew claims may include

loss of personal effects, repatriation and sometimes counseling. Careful attention to their welfare in the aftermath of a casualty will preserve crew loyalty and will mitigate the cost of claims. This is an area in which P&I insurers provide particularly valuable services.

Criminalization: This remains a live issue and one in which P&I insurers can make a material contribution. It is now routine for seafarers to be detained by the coastal state pending satisfactory arrangements for addressing claims arising from the casualty. Deliberate ill-treatment is rare, but seafarers and their families can pay a high price in uncertainty and associated stress. Beside practical assistance such as legal representation and medical care, P&I Clubs can sometimes materially improve the situation of detained seafarers by establishing good, working relations with local authorities, addressing claims appropriately and placing reasonable security when required. The unparalleled flexibility of P&I indemnity insurance in responding to the infinite range of liabilities that can arise in the aftermath of a casualty is perhaps the P&I insurers' greatest contribution to successful casualty management.

Bunker removal: In many marine casualties the coastal state will immediately issue an order requiring bunker removal, irrespective of the fact that removal can present more risks than leaving bunkers on board, in properly designed spaces and with all facilities to keep them safe. If bunker removal is ordered for environmental protection rather than as a necessary part of salvage operations, the cost will generally be for P&I insurers. Careful liaison between P&I and Hull & Machinery insurers will ensure that the job is done economically and with minimum disruption to salvage operation.

SCOPIC: If the salvage is conducted under LOF, P&I insurers may be directly involved via the Special Compensation P&I Clause (SCOPIC) under which P&I insurers are potentially liable to compensate salvors in the event that the value of salved property is insufficient to reward them properly. Having been introduced in 1999, the SCOPIC Clause is still relatively new but it is working well and delivers many benefits, not least of which is greatly improved communications via the relationship between the salvage master and the special casualty representative.

Once the casualty has been stabilized and the immediate risks to life, property and the environment have been addressed, casualty management generally moves to address the claims arising.

Environmental damage claims are often difficult and more contentious. Some countries have implemented statutory methods of assessing damage and compensation and some have adopted the same principles informally and outside the strict operation of law. In other jurisdictions, the assessment of environmental damage is less certain and it is surprisingly difficult to predict which jurisdictions will take an informed approach and which will have unreasonable expectations. P&I insurers, assisted by ITOPF, have unparalleled experience in addressing environmental damage claims across the world, we also have a good understanding of the operation of the International Oil Pollution Fund and the other national and International bodies involved in the assessment and payment of environmental damage claims.

Wreck removal is closely associated with the protection of the environment and is becoming increasingly common and increasingly expensive. In past times, wrecks would generally be left where they lay, sometimes because they were graves but also because they were not an obvious risk to navigation or the environment. Today, wreck removal is becoming more common, even when the wreck represents no realistic risk to anyone or anything. International regulation of wreck removal via the Nairobi Convention is relatively new and relatively untested, but the convention does introduce the concept of reasonableness into removal requirements and efforts. P&I insurers are sometimes responsibility for wreck removal and experience shows that early and respectful liaison with the coastal state may offer material benefits in ensuring that wreck removal orders are limited to reasonable efforts to address identifiable risks.

A useful approach to these operations can be to work closely with local advisors and, where appropriate, employ local contractors, who have a better understanding of just what will satisfy local requirements. Again, P&I insurers have unparalleled experience in addressing wreck removal liabilities, including the ever-increasing range of contracts designed to manage risk.

Finally, P&I insurers can assist owners with fines and penalties arising from the casualty. These can be significant but, as often as not, the scale of any fine will reflect the effectiveness of the response effort quite as much as the risk or danger. This is another area in which an informed, measured and appropriate casualty response has the potential to mitigate the ultimate liabilities.

Conclusion

The unparalleled flexibility of P&I insurance and the extraordinary resources retained in-house by members of the International Group of P&I Clubs, including our worldwide network of P&I correspondents, means that P&I insurers are uniquely placed to give material assistance to ship owners, other insurers and all other parties involved in marine casualties. This expertise is increasingly delivered though our overseas offices and a developing feature of marine casualty response is that local solutions can often be the best answer to a local problem. Finally and as I hope I have demonstrated, communications are nearly, but not quite, as important as expertise.

DO YOU CARE ENOUGH TO SHARE?

Sharing data to reduce accidents

Credit to: Jan Willem Verkiel – Manager of the Harbourmaster Policy Department from the Port of Rotterdam

AN OPINION PIECE AUTHORED BY **VALERIE LIM**

It is usually a split second decision; you share a post with your followers because you think it is useful, funny and/or interesting to them.

You would think that sharing information comes as second nature to most especially when human life is at stake?

Safety of Life At Sea (SOLAS) is the first and most important rule in the shipping industry.

You grasp its significance when ALL shipping and maritime conferences open with clear instructions on where to exit in case of an emergency.

Just recently in August this year, Singapore saw a flurry of events, starting with the International Safety @ Sea Conference as a cornerstone event during the week. Held earlier this year in Singapore, the Maritime Port Authority (MPA) organised conference was well-attended with both international and local delegates and speakers.

One presentation that stuck with me from the conference was the one delivered by Mr Jan Willem Verkiel – Manager of the Harbourmaster Policy Department from the Port of Rotterdam.

He espoused the need for transparency and sharing of information so the industry can learn from such incidents and apply prevention measures to make shipping safer.

He shared that the port administrates accidents and incidents and has done so since 1988 (maybe even longer); so they have at least 10 years' worth of statistics with the quality and completeness of the data improving year on year.

The Port of Rotterdam then started to share data on incidents and accidents with the Netherland's Ministry of Transport from 2004. That was when they had a dispute with the Ministry because it was the only port in the Netherlands that provided the national accident database with realistic numbers.

And instead of rewarding the Port of Rotterdam for sharing such valuable information and data, they were instead 'blacklisted' as an unsafe area in the Netherlands!

Fortunately, the Port of Rotterdam stood their ground and with (what I can imagine) countless discussions, the Port made its point on sharing data, prompting other ports to do the same – which then allowed the Ministry to report within the right context.

The issue was (obviously) that they appeared unsafe based on the report that was published on a national level.

Whereas in actual sense it was quite the opposite and with the intense data gathering and sharing they had further developed safety awareness instead!

Then why is it so hard to get people to share these data?

Is it a generation thing? That the earlier generation who grew up without the internet – they feel more protective of the data they generate? As it was it the past – knowledge gives the owner a competitive advantage.

Or is there just no right platform for doing so? Who is coordinating such efforts? How about sharing data across different nations? Would it be different say just sharing data between different states?

Maybe it is about the ease of being able to share that data?

With the data protection act being enforced country by country, it is not just a matter of clicking a 'share' button – but a tedious process of obtaining permission and consent.

Fortunately (or unfortunately), this is a problem not unique to the maritime industry. This affects many other industries too, noticeably more so in the scientific, academic and medical community. And what prevents the data flow are almost the same reasons that the maritime industry faces; not wanting to give others a competitive advantage, lack of acknowledgement and security concerns on how the data is being handled.

Good, well curated data is valuable. Uber knows that. Facebook knows that. And their data are monetised and sold to companies for huge sums of money.

But to gain a bigger picture and to progress our industry collectively – we need to change our mind-set to help the industry step up. This data needs to be shared for free.

CARE

ENOUGH

I agree with Jan Willem who shares that 'given the considerations above the advantages for all are bigger than the disadvantages. We live in an era that data is the key asset of many companies and sharing data is often the way to add value.'

He cites an example of the air transport industry which is far ahead in that sense. They have worldwide databases which the industry can tap on and one example is the Aviation Safety Network which is run by a non-profit organisation, Flight Safety Foundation.

The European Maritime Safety Agency (EMSA) is a good start – with information fed through by commercial providers with a main objective to build a complete and up-to-date database.

However, there is still much catching up to do and the need to have a single database capturing the world's fleet of vessels is becoming much more urgent as incidents in ports becomes far more complex involving bigger and bigger vessels while the size of older ports struggle to keep up.

BE THE CHANGE YOU WANT TO SEE

Where and how does the industry start?

Jan Willem suggests that we can start to think in alliances instead of separate ports and organisations. Start to exchange experiences and lessons learned and share actual data. Start to invest in safety awareness in your own organisation and invest in a culture where you learn instead of blame. Set a path on several maturity levels for your own safety culture and talk with your operators and analysts about the levels and what it means.

Set the data in context. Consider first the audience whom you are sharing the data with and the objective behind the purpose of sharing.

There is a vast amount of data out there and in order to benefit, everyone needs to share more of it freely.

As they say in internet speak – Sharing is Caring.

Valerie Lim is the General Manager at Helix PR. She joined Helix PR from KPMG. During her time at Helix PR, Valerie has led international accounts for a number of high profile international maritime industry clients. She also has extensive experience in leadership positions in the production and execution of events on behalf of both Helix PR and our clients. These include, most recently, the Asian Marine Casualty Forum, the cornerstone event of Singapore Maritime Week 2017.

TO SHARE

This article was originally published in ***Maritime Times of Tasmania*** *(No. 60, September 2017) the quarterly magazine published by the Maritime Museum of Tasmania.* ***http://www.maritimetas.org/***

Proud owner Mark Souter commencing the re-fit at Mylor Yacht Harbour, Falmouth, Cornwall UK, 1978

Tide's out. *Gipsy Moth* leaning against quay wall at Porto. Portugal, 1979

Gipsy Moth with spinnaker set cruising South Peloponnese, Greece, 1979

Gipsy Moth sails again

– by the man who discovered and owned her –

Capt Mark Souter MIIMS

Since 1998, Mark has been working as a professional Captain aboard various Superyachts cruising both USA and European waters. He is a full IIMS member and has authored a book entitled *Marine Surveying for New Motor Yachts*. His passion now is project management and the surveying of large motor yachts. In this article Mark recalls how he discovered the original Gipsy Moth and had no hesitation in buying the yacht; but he wonders what became of her in later years.

Gipsy Moth — the early years

In 1938, an auxiliary Bermudian sloop, designed by William Maxwell Blake, was launched at Claude Whisstocks' yard at Woodstock on the River Deben in Suffolk, England. It had been built for Mr Harry L Goodson, Secretary of the Aldeburgh Yacht Club, and named *Florence Edith*.

Length overall: 34 ft
Rig: Sloop
Sail: 540 sq ft
Tonnage: 7
Registered: Ipswich

Lloyd's Register of Yachts wasn't published during WWII but, in 1946, recorded the owner as JS Alderton of Essex.

The Chichester years

The yacht came to the attention of Francis Chichester, an English aviator who had flown solo from England to Sydney, and across the Tasman Sea in a Gipsy Moth single-engined aircraft, but who was rejected as a pilot during WWII after failing an eyesight test. His excellent skills gained him a position writing instructional notes on navigation for the RAF. He later worked as a navigator on yachts, but by 1953 he was yearning for a boat of his own.

He found the now derelict *Florence Edith* near Brightlingsea on the Essex coast when he was still a novice sailor, bought it and renamed it *Gipsy Moth II* with fond memories of his flying days. He raced it for four seasons with mixed success and in 1959 sold it to G McNeill-Moss, of London. Though it was registered in Ipswich, its home port was now Gosport, Hampshire, where a new Parsons engine was installed in 1961. From 1964–1971 the owner was Commander JL Wood of Hampshire, the last owner noted in the records.

Chichester had overseen the building of a new yacht, *Gipsy Moth III*, launched in 1960. Then in 1966 he took possession of *Gipsy Moth IV*, achieving fame—and a knighthood—after sailing this yacht single-handed around the world from Plymouth to Plymouth in 1966-1967 racing against the average time taken by the clipper ships on the Cape Horn route. Before rounding Cape Horn, the 65-year-old sailor called into Sydney, where he received an enthusiastic welcome. Here adjustments could be made to the yacht and, though busy, he could recover a little. When he left, hundreds of small craft escorted *Gipsy Moth IV* down the harbour to the Heads. in an exuberant send-off.

Chichester, master navigator, was also a beekeeper. He enjoyed the honey that they produced, and he admired the bees' excellent navigating abilities.

Further reading:

Leslie, Anita (1975) F*rancis Chichester*. Hutchinson: Hodder & Stoddart, London.

Chichester, Francis (1964) *The lonely sea and the sky*. Hodder & Stoddart, London.

When I was 11 years old I watched, with much interest, the arrival of Francis Chichester as he berthed in Sydney harbour during his round-the-world voyage on *Gipsy Moth IV*. I was totally fascinated by what he was doing and consequently informed my parents that when I was 21 years old I was going to leave Australia and head to the UK to purchase a sailing yacht of my own. The immediate response was 'With what money will you be buying this yacht?' 'Well I need to do some type of investment,' was my answer. And sure enough, at the age of 15, I purchased a block of land in the outer suburbs of Melbourne and paid it off by doing an apprenticeship during the day and continuing my studies at night school for six years. As soon as I turned 21, I immediately sold the block of land and, with a handsome profit, headed to the UK in search of the yacht of my choice. My ideal was a wooden yacht, around 34 feet, with a cutter rig (inner self-tacking headsail).

I commenced my search in December 1977 in the north of Scotland, looking in marinas and at displays in yacht brokers' windows for that ideal yacht. It wasn't until I reached Port Falmouth in the SW corner of England that I found *Gipsy Moth* advertised by a local broker. The fact that it was the original *Gipsy Moth* previously owned by Sir Francis Chichester was a remarkable coincidence. I paid £9,500 for it and re-built the entire interior plus fitted

a new diesel engine and fixed up the sail plan, all while living aboard with a school friend Greg who helped. Every inch of *Gipsy Moth* was checked and tested for the forthcoming voyages. Sailing up and down the south coast of England I found some superb anchorages, which gave me the confidence to venture far and wide.

By the end of 1978 (ten days before Christmas), I set our course to the south in search of some warmer weather. The fact that it was mid-winter and we were heading into the notorious Bay of Biscay was not altogether clever, but I was young and felt capable of the journey.

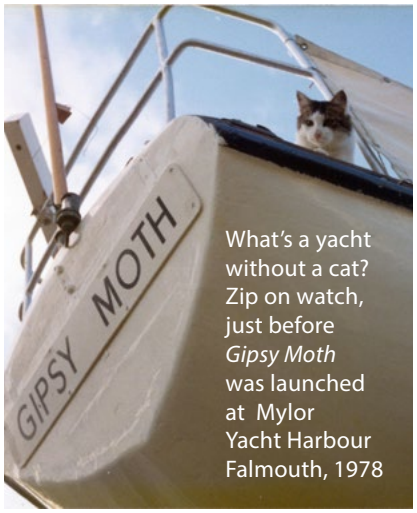
We indeed hit a terrible storm just out from Vigo port in Spain and had to run with eight-metre waves to La Coruna. My concern was that *Gipsy Moth* was going to pitch-poll end for end down the steep waves. Placing two one-hundred-metre warps out in a bite configuration allowed the yacht to naturally brake when a surfing wave lifted its counter stern. It worked wonderfully and 24 hours later we made landfall after a total of ten days in the Bay!

I thought how ironic it was that my heavy-weather sailing knowledge was gained through reading all the books published by Francis Chichester before I had even left Australia, and here I was in his original yacht that he too had trained in before he headed off around the world in *Gipsy Moth IV*.

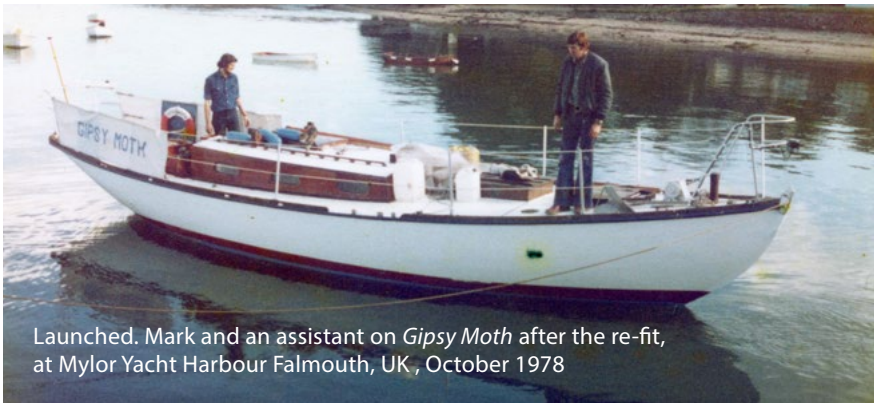
Navigation in those days was done with my wonderful plastic sextant, trailing a log (distance run) meter behind us and DR (dead reckoning) our position. We survived the storm; but the deaths of several fishermen who drowned in the same storm brought home the reality of what bad weather can be like.

Nevertheless, my sailing friend Greg and I enjoyed the fantastic Galatian hospitality during the Spanish winter and then continued our voyage down the Atlantic coast to the Mediterranean in the following spring and summer. With no set plan, we quite literally headed in whatever direction the wind blew and often made port of call when, and if, it suited us.

The stories about these voyages are far too many to fit within these pages but hopefully there's enough to inspire the youth of today to repeat a similar voyage. However, a word of warning: don't sail in the Bay of Biscay during the winter!



What's a yacht without a cat? Zip on watch, just before *Gipsy Moth* was launched at Mylor Yacht Harbour Falmouth, 1978



Launched. Mark and an assistant on *Gipsy Moth* after the re-fit, at Mylor Yacht Harbour Falmouth, UK , October 1978

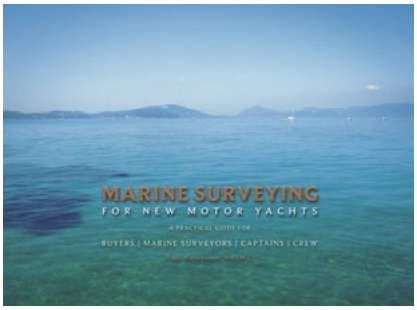
What happened to Gipsy Moth?
I last saw *Gipsy Moth*, long after I'd sold it, lying neglected in a shipyard in Greece, in about 2001, when it would have been more than 60 years old. I have no idea whether it survived after that.

What are you involved in now and do you still find time to sail yachts?
Since 1998 I have been working as a professional Captain aboard various Superyachts cruising both USA and European waters. Additionally I'm a certified Marine Surveyor I.I.M.S. (International Institute Of Marine Surveyors), and author of Marine Surveying for New Motor Yachts.[1] In the northern winter I'm available to lecture on Marine Surveying at various yachting events and shipyards. My passion now is project management and the surveying of large motor yachts.

Do you often get back to Australia?
Home for me now is in the UK. My duties as captain and my surveying work take me throughout the Mediterranean, but I will always be fond of Australia and hope that one day I shall find time to cruise our fine seas there as well.

Finally, what advice would you give to young Australians concerning overseas yachting?
As I mentioned earlier, I strongly recommend a yachting adventure for anyone courageous enough to take on foreign waters and to discover the essence of touring with a sailing yacht. Make sure you are adequately qualified (preferably MCA approved STCW certification) and try to learn a little French, Italian, Spanish or Greek. There is always a good demand for Australian Captains who are qualified 200–3,000 tons license and who have command of at least one of the above foreign languages. A simple RYA license will get you a job only on a flotilla or day sailing yacht. Working in the summer on board a Superyacht can pay good dividends and finance additional legs of your anticipated voyage. Quite simply, 'Do it' because it can be heaps of fun. I am always happy to guide someone who has any questions.

captsouteryachtsurveyor@yahoo.com



www.amazon.com.uk or from the distributor **www.YPDbooks.com**

[1] *Marine Surveying for New Motor Yachts* was reviewed in *Maritime Times of Tasmania* No 53, December 2015.

FOCUS ON EXPERT WITNESS WORK: is it for you?

BY
DR CHRIS PAMPLIN BSC PHD,
UK REGISTER OF EXPERT WITNESSES

After gaining his PhD in 1988, Chris took on the development of the UK Register of Expert Witnesses. After 3 decades editing the Register, and discussing practical expert witness matters with a vast range of expert witnesses, he has acquired a detailed knowledge of the rapidly changing forensic scene in the UK.

ABSTRACT

In all developed systems of law, the evidence of expert witnesses can be crucial to the outcome of a dispute. Nowhere is this more so than in the UK, where expert evidence has been used in court cases since at least the 15th century. Nowadays it may be required in civil, family and criminal proceedings, as well as in arbitrations, before specialist tribunals, and for public or parliamentary inquiries.

For marine surveying expert witnesses, their expert skills are most in demand from ship owners and purchasers, marine underwriters, ship and engine builders, salvage associations, P & I clubs, offshore industry, harbour and navigation authorities, fleet and boat hire operators, equipment suppliers and so on. From an historic canal boat damage and repair survey to a high-publicity commercial marine accident investigation analysis, a cargo condition and quantity survey to a superyacht valuation, the scope of possible involvement across the discipline is vast.

Regardless of the type of litigation, though, any marine surveyor considering expert witness work must understand their role in the proceedings and remain impartial, regardless of the instructing party. Let's take a look at what's required[1].

EXPERTS AND EXPERT WITNESSES

An **expert** is anyone with knowledge or experience of a particular field or discipline beyond that to be expected of a layman. An **expert witness** is an expert who makes this knowledge and experience available to a court to help it understand the issues of a case and thereby reach a sound and just decision. There is, currently, no precondition imposed by English law on the qualities required of an expert witness. It is for the courts, on a case by case basis, to make a judgment of the individual's qualities and to weigh the expert's evidence in accordance with this judgment.

'… any marine surveyor considering expert witness work must understand their role in the proceedings and remain impartial, regardless of the instructing party'

Dr Chris Pamplin

WHAT IS EXPERT EVIDENCE?

The fundamental characteristic of expert evidence is that it is opinion evidence. Good quality expert evidence must provide as much detail as is necessary to allow the judge to determine that the expert's opinions are well founded. It follows, then, that it will often include:

- **factual evidence obtained by the witness which requires expertise in its interpretation and presentation**
- **factual evidence which, while it may not require expertise for its comprehension, is inextricably linked to evidence that does**
- **explanations of technical terms or topics**, as well as
- **opinions based on facts adduced** in the case.

DUTIES OF AN EXPERT WITNESS

The overriding duty of an expert witness is to the court – to be truthful as to fact, thorough in technical reasoning, honest as to opinion and complete in the coverage of relevant matters. This applies to written reports as much as to evidence given in court. At the same time, the expert assumes a responsibility to the client to exercise due care with regard to the investigations carried out and to provide opinion evidence that is soundly based.

To fulfil these duties adequately, it is vital that the expert should also have:

- **kept up to date with current thinking and developments** in his or her field, ideally with demonstrable Continuing Professional Development-rated courses
- **familiarity with the provisions of the various civil, family or criminal court rules.**

QUALITIES REQUIRED OF AN EXPERT WITNESS

Expert evidence should be – and should be seen to be – **independent, objective** and **unbiased**. In particular, an expert witness must not be biased towards the party responsible for paying the bills. An expert's evidence should be the same regardless of who is paying for it.

Clearly, too, an expert witness should have:

- a **sound knowledge of the subject matter in dispute**, and, usually, **practical experience** of it
- the **powers of analytical reasoning** required to fulfil the assignment
- the **ability to communicate findings and opinions clearly and concisely**
- the **flexibility of mind to modify opinions** in the light of fresh evidence or counter-arguments
- the **ability to 'think on one's feet',** especially important on those rare occasions one is faced with cross-examination, and
- a **demeanour that is likely to inspire confidence**, particularly in court appearances.

'. . . be truthful as to fact, thorough in technical reasoning, honest as to opinion and complete in the coverage of relevant matters'

Dr Chris Pamplin

ETHICAL CONSIDERATIONS

The duties an expert witness owes to the court may sometimes run counter to those owed to the client. This will be most obviously so when the expert's conclusions contradict the client's case as set out in the pleadings. In such circumstances, the expert witness may come under pressure to alter the report or suppress any damaging opinion. To do either would be tantamount to committing perjury, while not to do so might well undermine the client's case. There are only two ways in which such an issue can be resolved: either the statement of case is amended or the expert witness must resign the appointment.

An expert witness can never afford to ignore information damaging to the client's case once it comes to light, if only because there is always the risk that the other side will become aware of it too. In any case, the expert's duty to the court requires that the expert evidence is complete in its coverage of relevant matters. Whether a civil, family or criminal case, every expert report must end with a formal Statement of Truth[2] confirming the expert's understanding of his/her overriding duty to the court. These **formal statements and declarations leave no leeway for ignoring evidence**.

Lastly, an expert should be wary of expressing any opinion on allegations of negligence on the part of anyone, professional or otherwise, who may be involved in a dispute. The opinions given should relate solely to the facts of the case: it is for others to apportion blame.

'Don't apportion blame. . . that is for the jury or judge'

Dr Chris Pamplin

CONFLICTS OF INTEREST

Expert witnesses have a duty to the court to be independent and objective in the evidence they provide. Judges may, in the exercise of their discretion, reject altogether evidence tendered by experts whom they know to have – or suspect of having – a financial stake in the outcome of the litigation. This is the principal reason why **experts should think very carefully before accepting instructions to act as an expert witness on a 'no-win, no-fee' basis.**

For much the same reason, **personal, professional or financial links with parties to a dispute, or with businesses in competition with them, would normally debar an expert** from acting as an expert witness in any litigation in which those parties are engaged.

Expert witnesses need to be particularly mindful of the risks involved in acting in cases involving former clients, lest this should prompt the allegation that knowledge or information gained while working for the former client is being used to this client's disadvantage. Whenever there is a conflict of interest of this kind, or it appears that there may be one, the expert concerned should seek to obtain the informed consent of both the old and the new client before agreeing to act for the latter.

An **instructing solicitor should always check at the outset that the expert has no conflict of interest**, and the expert should inform the instructing party (whether on initial instruction or at any later stage), without delay, if the instructions and/or work have, for any reason, created a conflict of interest[3].

FEES

The fees experts charge are, in large part, market driven. What's more, fees charged in cases that are paid for from public funds are subject to Ministry of Justice caps[4]. This means they are around half those charged habitually in civil cases. The *UK Register of Expert Witnesses* conducts a biannual survey[5] on expert fees amongst its members. Its current (summer 2017) average hourly report writing rates for marine surveyors for non-legal aid civil work range from £134 to £153 per hour.

CONCLUSION

Expert witness work can be a rewarding adjunct, both intellectually and financially, to an existing professional workload. However, anyone considering entering the fray should take care to understand the nature of the role and the expert's duties and ethical considerations therein.

For free access to lots of expert witness support and guidance plus membership information, visit **www.ukrew.org.uk** and subscribe to the *UK Register of Expert Witnesses'* free e-wire service (more than 100 issues plus monthly updates).

REFERENCES

1 Anyone contemplating becoming an expert witness should read *Getting Started as an Expert Witness* (edition 2, 2015), published by J S Publications (**https://www.jspubs.com/LittleBooks/lbe.cfm#LB3**). Call 01638 561590 to order.

2 See Factsheet 69 from the *UK Register of Expert Witnesses* (**www.ukrew.org.uk**) or visit **https://www.justice.gov.uk/courts/procedure-rules** and browse through the procedure rules.

3 See the case of *Toth -v- Jarman* (2006, EWCA *Civ* 1028) discussed in Factsheet 2 from the *UK Register of Expert Witnesses.*

4 See **http://www.legislation.gov.uk/uksi/2013/2877/schedule/2/made** for rates for civil cases, which are identical to those for criminal cases. Unhelpfully, marine surveyors are not defined specifically in the table, so the court determining officer would need to decide which category most closely aligns itself with a marine surveyor's training, skill set and ease of availability of expertise, and use that category's figures.

5 All survey results are available online at **https://www.jspubs.com/Surveys/feesurveys.cfm**

ABOUT THE AUTHOR

Dr Chris Pamplin has been Editor of the UK Register of Expert Witnesses since its start in 1988. Most of his time is now spent on the professional support and education of expert witnesses. He is a regular contributor to meetings and publications that consider aspects of expert evidence in the UK.

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New Standards for Marine Diesel Fuel

An overview on what we now know

This article is an edited version of a more in depth guide originally published by the Small Ships Group of the Institute of Marine Engineering, Science and Technology and reprinted here with their kind permission. Read the full version at **http://bit.ly/2kiRS1r**

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The publication of the European Directive sets technical specifications for diesel and gas-oil fuels allowed to be used in 'Inland Waterway Vessels' and 'Recreational Craft', 'when not at sea'. In the Directive, such vessels are included (somewhat confusingly but for reasons of European legislation) under the broader heading of 'Non-Road Mobile Machinery'.

At the European stages of formulation, there had been little consultation in any robust sense with the marine industry. Indeed, while the UK implementation of the Directive was handled by the Department for Transport (DfT), there had been little

involvement of the Maritime and Coastguard Agency (MCA) and the only marine organisation appearing in the list of those consulted, apart from manufacturers of marine and industrial diesel engines, is British Marine.

However, intervention by the Passenger Boat Association, the Port of London Authority and representatives of the IMarEST Small Ships Group caused DfT to extend the deadline for consultation and open an ultimately fruitful and supportive dialogue with representatives of the commercial and leisure maritime and inland waterways sectors. Through this process, it became clear to DfT that several aspects would need to be specially considered, when introducing legislation, which affects inland waterways marine machinery:

- Inland Waterway Vessels and Recreational Craft tend to have a much longer operating lifespan than other Non-Road Mobile Machinery (NRMM).

- The engine and fuel systems technology in many of these vessels is not 'state of the art'. Indeed much of it could be described as 'old but reliable technology' which may be operating for many years yet.

- The tanks and fuel systems in many inland waterways and other vessels, likely to be affected, cannot readily be drained entirely of water.

- The engines fitted to these vessels vary from hundreds of horsepower in fishing vessels, ferries, yachts and tugs down to 10 horsepower (7.5 KW) or less in some narrow boats and other smaller vessels.

Many of these vessels, both commercial and recreational, can be laid up over winter for fairly long periods of time. This is particularly true for the passenger boat trade and on the canal system where low temperatures prohibit recreational use and the canals themselves can frequently freeze over.

- The presence of salt water, dampness and condensation, the presence of bridges and locks on inland waterways, the operation of these vessels on fast flowing rivers and the ever-present considerations of marine safety all demand a degree of machinery reliability over and above that of other NRMM.

- From time to time, a large proportion of inland waterways vessels proceed to sea. So different fuel requirements would complicate logistic requirements.

Additionally, at the time of the initial stages of information gathering, it was not clear that there had been any meaningful tests carried out to ensure navigational and public safety or to determine the long term effects of changes to fuel specifications on the operation and maintenance of this wide range of marine engines, old and new, large and small.

As from 1st January 2011, the European Directive required that the limit on Sulphur content of NRMM and inland waterways Diesel fuel would be reduced to 10 ppm (0.001 %). This is classed as "Ultra-Low Sulphur" or "Sulphur-Free" fuel. The UK governing legislation took IW and marine considerations into account and the UK regulations came into force on 14th January 2011. After this date it became illegal to distribute or offer for sale diesel fuel with a greater than 10 ppm Sulphur content, for the purposes of NRMM and IW recreational and commercial vessels not operating "to sea".

The European Directive was effectively a means of regulating sales of fuel, rather than upon the use of fuel. So, the requirements enforced in England and Wales by the appropriate Local Authorities, with special arrangements in Scotland and Northern Ireland. It remains unclear, at this stage, how local authorities accommodate this task but expected that enforcement should be undertaken by Trading Standards Officers.

Because the ISO, EN and BS standards were revised to align with the planned proposals for reduction of sulphur and aromatics, the refiners, blenders and distributors provide options of:

- EN590:2009 road diesel fuel (DERV), at Duty-paid price, with less than 10 ppm sulphur and up to 7% bio-diesel, as currently available for road vehicles.

- The same fuel with red dye added, calling it 'Red Diesel', at Duty-free (for commercial or non-propulsion leisure purposes) either under EN590:2009 or BS2869:2010 specification.

- "Red Diesel" fuel, to BS EN 2869:2010 Class A2 and red dye added, for Duty purposes, with less than 10 ppm Sulphur but zero % or de minimus bio-diesel.

This "FAME-Free" Red Diesel should become the fuel of choice, for inland waterways operators.

Alternatively:

- In UK tidal port areas, where the UK regulations do not apply and where ships' Marine Gas Oil is available from distributors, "sea-going" operators may order fuel to ISO8217:2012 Category DMA or BS2869 Class D (essentially the same fuel), which is by specification free from FAME but has sulphur at up to 1,000 ppm.

BENEFITS OF THE NEW STANDARDS

ENVIRONMENTAL

As part of the UK Air Quality Strategy, the UK is committed to a progressive reduction of emissions into the atmosphere.

The principal areas of concern are Oxides of Nitrogen, Hydrocarbons and Particulate Matter and this strategy is directed not only at road vehicles, but also at Non-Road Mobile Machinery.

The reduction of Sulphur content of diesel fuel to 10 ppm is addressing two issues:

- The catalytic emissions control technology necessary to achieve the required level of pollution reduction is available and is currently in use on road vehicles. It is, however, intolerant to Sulphur. Road vehicle diesel already has this reduced Sulphur content. The reduction of Sulphur content in fuel for NRMM allows the emissions control technology to be used on NRMM as well, a process which started from 1st January 2011 on new engines.

- A continuing general reduction of Sulphur emissions is of benefit to the environment in reducing the acidity of rainfall, etc.

SUSTAINABILITY

With the development of vegetable-based fuels and the increasing cultivation of oil-producing plants for the bio-fuel industry, a degree of sustainability is evident which could counter the reduction in global stocks of fossil-based fuels and, at the same time, assist the effort for cleaner emissions into the atmosphere. The biofuel that is now added to some blends of diesel is also known as FAME (Fatty Acid Methyl Ester).

The bio-fuel industry is still developing, and there are hurdles to overcome, as will be seen in these notes. However, it is here to stay and the environmental and economic benefits and opportunities for further development and improvement are considerable.

Notwithstanding, FAME is not the same, in chemical formulation, as refined mineral fuel and many key properties render its inclusion in marine fuels as potentially hazardous to navigation and public safety. For a sudden engine breakdown, caused by microbiological contamination blocking filters or injection equipment, could give rise to cause an accident of considerable significance. These causes, effects and recommended courses of action to prevent such risk are covered in the following chapters.

WHICH VESSELS ARE AFFECTED AND WHERE?

"This Directive sets, in respect of road vehicles, and nonroad mobile machinery (including inland waterway vessels when not at sea), agricultural and forestry tractors, and recreational craft when not at sea:

(a) technical specifications on health and environmental grounds for fuels to be used with positive ignition and compression-ignition engines, taking account of the technical requirements of those engines; and

(b) a target for the reduction of life cycle greenhouse gas emissions."

The Wording in UK Legislation Enforcing the European Directive

The European Directive is enforced in the UK through Statutory Instrument 2010 number 3035 (called, hereafter "the SI"). This legislation amends existing regulations:

The Motor Fuel (Composition and Content) Regulations 1999 and amending Statutory Instruments, to date (which, amongst other subjects, previously regulated fuel used for NRMM, reduced levels of sulphur in the fuel and introduced the option for inclusion of Biofuels) and The Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008 and amending Statutory instruments (which, amongst other subjects, previously regulated sulphur content in marine fuels).

It is important to understand that the regulations contained in the European Directive and relevant parts of the SI apply to the sale of fuel, not the use of fuel. However, vessel operators, engineers and surveyors need to be aware of the regulations' implications, and the effect of the changes, so that they can ensure that the best fuel for their purpose is procured and used.

5A. (1) For the purposes of this regulation:

"marine diesel oil" means any marine fuel which has a viscosity or density falling within the ranges of viscosity or density defined for DMB or DMC grades in Table I of ISO 8217 (2005); "marine gas oil" means any marine fuel which has a viscosity or density falling within the ranges of viscosity or density defined for DMX or DMA grades in Table I of ISO 8217 (2005);

"marine fuel" means any petroleum based liquid fuel intended for use or in use on board a vessel including those fuels defined in ISO 8217 (2005); "placing on the market" means supplying or making available to third persons, against payment or free of charge, anywhere within the United Kingdom marine fuels for on-board combustion, but excludes supplying or making available marine fuels for export in ships' cargo tanks.

RESTRICTIONS ON THE DISTRIBUTION AND SALE OF GAS OIL AND OTHER LIQUID FUEL

NOTES ON INTERPRETATION

There is no limit on vessel size or other parameter, in the application of the Regulations. They apply to all vessels regardless of length, tonnage or engine power.

The MCA recognizes four categories of water, in addition to those waters, which are regarded as "sea". The four categories ('A', 'B', 'C', 'D') are defined and identified in the statutory Merchant Shipping Notice MSN 1837(M) as below and are referred to (as seen above), in the SI:

Category A - waters are defined as "narrow rivers and canals where the depth of water is generally less than 1.5 meters".

Category B - "wider rivers and canals where the depth of water is generally 1.5 meters or more and where the significant wave height could not be expected to exceed 0.6 meters at any time".

Category C - "tidal rivers and estuaries and large, deep lakes and lochs where the significant wave height could not be expected to exceed 1.2 meters at any time".

Category D - "tidal rivers and estuaries where the significant wave height could not be expected to exceed 2.0 meters at any time".

Under the consultation process, the UK Government was advised and accepted that, for the purposes of UK interpretation and enacting the European Directive (through the SI), the new fuel standards regulations should adopt a consistent definition of "to sea" with the Merchant Shipping regulations that govern air emissions from ships.

Under this sensible move, the new fuel standards apply to provision of fuel for Inland Waterway Vessels and Recreational Craft which do not normally operate to sea but are operating on canals, on Category C lakes and lochs (within the definitions at the SI referring to wave heights on such lakes and lochs) and other rivers and waters within Categories A and B. In effect, this means that the regulations apply to inland waterways vessels and Recreational Craft that normally operate on non-tidal rivers and other waters.

PITFALLS AND HOW TO AVOID THEM

PROBLEMS IN STORAGE AND DISTRIBUTION

The storage of fuel containing bio-diesel requires additional precautions and management. These considerations apply equally to both bulk storage at the point of supply, during handling and transit and also within a vessel's own fuel storage tanks.

WATER AND MICROBIOLOGICAL CONTAMINATION

All gas oil or Diesel fuel in storage tanks contains or gains a degree of water content, either as free water, where it separates out and lies below the fuel or as absorbed water, where droplets of water of microscopic size remain suspended in the fuel. Usually, such absorbed water content is a very small proportion and standards exist to control this at the point of sale. Once in the storage tank or vessel, water can arise from a number of sources, which can be controlled by good housekeeping and system management. However, changes in ambient temperature can cause condensation in the upper parts of fuel tanks, thereby increasing the absorbed or free water content. As a consequence, operators most often fill tanks, prior to vessel lay-up over winter, to reduce the volume and area where condensation can occur.

However, quite apart from the effects of water, operators should be aware that long-term storage may cause the fuel's properties to deteriorate. Much Diesel fuel is now a blend of straight-run distillate and product cracked by catalytic processes. Many operators have found that the longer fuel having a significant content of cracked, as opposed to straight run distillate, is stored, the likelihood is increased of it absorbing water, becoming unstable and losing its specified properties.

It should be noted that bio-diesel of FAME type has the scope for accumulating a considerably higher water content than fossil diesel fuel, whether straight-run or cracked. This is because its chemical make-up is very different from mineral distillate fuels and is much more hygroscopic – it literally draws moisture in from surrounding air more readily than distillate fuels.

After a period of time, any significant water content may collect at the bottom of a storage tank (diesel has a lighter Specific Gravity than water and therefore floats) and should normally be drained off at regular intervals. However, lower levels of water content may also remain in suspension in the fuel, as tiny droplets incapable of separating out. This condition is known to exist within bio-diesel mix fuels.

While it is a known fact and many engineers have experience that certain micro- organisms can thrive in fuel tanks and bilge areas of vessels, sea-going ships usually have the equipment, personnel and procedures to ensure that this is rarely a serious problem. Due to the need for food and oxygen, micro-bacterial contamination (MBC) tends to be most prevalent at the fuel/water interface. It is acknowledged that bio-diesel has a much greater propensity to support the development of MBC than fossil diesel fuel, being fundamentally a vegetable substance, having a lower Sulphur content (a poison), a potentially higher water content and therefore being a more suitable food source for the microbes.

COLD FILTER PLUGGING POINT AND OTHER FACTORS

Diesel fuel that is blended with bio-diesel content naturally has a higher Cold Filter Plug Point (CFPP) than fossil diesel fuel, which means it may stop flowing (known as waxing) in cold weather at a higher temperature. It is also known that such blends may have poorer longterm oxidation stability. Advice has been received that storage time should be minimised, in order to prevent any such precipitated

solids from clogging pipes, filters and other system components.

However, the fuels made available to the latest standards (BS EN 2869:2010) include additives to manage CFPP and maintain stability. Experience will demonstrate whether these are sufficient to meet former expectations of fuel life.

The Regulations (and the fuel standards derived to meet them) also introduce a reduction in the level of aromatics within Diesel fuels. These chemicals are hydrocarbons of benzene ring form, that can be harmful to people and the environment. However, fuel system seal effectiveness relies, to some extent, upon the "swelling" effect that aromatics have upon the seals' material. A reduction in aromatics may lead some seals to shrink, with subsequent risk of fuel seepage at flange/seal interfaces.

Conversely, some seal materials can be weakened by the bio-diesel content of fuel, which may also give rise to seal failure; with resulting fire risk. Careful inspection and replacement, at the first sign of seepage/failure should prevent a more catastrophic waste of fuel and environmental impact.

Current advice builds upon good engineering practice and includes ensuring that:

- in larger installations, consideration should be given to modifying the fuel system to include two stages with filtration and separation by coalesce or centrifuge;

- the fuel in any tank is 'refreshed' (turned over) regularly, at least every 3-6 months;

- tanks are kept as full as possible, to reduce condensation;

- any water content is drained off more regularly (although it is rarely possible to remove it all) in order to discourage MBC. Consideration should be given to modifying the drain facilities to make them more effective;

- seals and components (elastomer-based and rubber) in the fuel system are inspected and, where necessary, replaced at the earliest opportunity;

- strainers and filters are checked and cleaned more regularly;

- where MBC may be suspected, to undertake sampling and analysis.

This advice is easy to put into words, but far less easy in practice. For example:

- Some of the smaller marinas and boatyards, especially on the canal system, may have only one diesel storage tank and may not sell adequate quantities of fuel to allow the recommended 'refreshing period';

- Many inland waterways vessels and recreational craft are laid up over the winter with full or partly full fuel tanks, for 6 months or more in some cases. This is done out of convenience and to minimise condensation but where would you drain the fuel to, anyway? VAT and safety rules are strict about transfers of fuel out of a vessel.

If you are unfortunate enough to discover or suspect the presence of MBC in a bulk or vessel's storage system, there is only one realistic course of action: to consult specialists.

There are systems available that allow fuel to be monitored for the presence of MBC, which can identify the type of microbe and give approximation to the severity of contamination. Conidia Bioscience Limited and ECHA Microbiology have systems, which have demonstrated to give rapid and effective results on-site. Other suppliers have systems available which will give effective results but which require time for laboratory assessment, before results can be known.

The remedy, where MBC is well established, must be to empty and clean physically the tank and then, in all cases, to treat the whole system and whole tank lining with biocides. Less serious outbreaks may be tackled with biocide additives, within the tanks and filtration. Some specialists provide a visiting, vehicle-based cleaning and recirculation system. Some companies suggest use of ultra-violet light to kill bacteria. However, such light can have the undesirable side-effect of breaking down antioxidation properties of the fuel.

Industrial, road and marine engine manufacturers and fuel injection systems specialists have been working with the fuels industry and standards bodies, for some years, in development of engines and fuel systems that are compatible with proposed new fuels, including those with bio-diesel content. Most new marine engines are designed to burn Ultra-low Sulphur (ULS - 10 ppm – also called "sulphur-free") fuel with bio-diesel content up to 10% and there are current moves to ensure that forthcoming installations will be provided with Catalytic Emission Control Technology, in order to reduce substantially the polluting emissions. Development of these systems relies upon ULS fuel being widely available and used, as the sulphur of low-sulphur fuels (up to 1,000ppm sulphur – the previous standards for "Red Diesel") would "blind" the catalysers and impact badly upon both emissions and engine performance. So, the introduction of ULS fuel is a good thing for the environment, which marine engineers and other professionals should promote.

However, it is a fact that a majority of engines on inland waterways vessels and many older recreational craft, especially those on the UK canal and river systems, come from a previous generation of technology, when Sulphur content of 1,000 ppm and above was normal (with inherent and known lubricating property and bio-poisoning advantages) and when no one had even heard of bio-diesel. Some of them are tens of years old (as are some of the

vessels). Many of these engines are of relatively low power output, and there are thousands of them around UK waterways.

The reduction of aromatic content in the new standards of fuel is known to affect the performance of the rubber and synthetic seal compounds used in pump seals and flexible fuel pipes. Inclusion of bio-diesel also has an effect upon seal materials. Fuel pumps which have not been recently replaced or re-built should be fitted with new seals, should fuel seepage be seen to occur. It is advisable that flexible portions of fuel pipework and system seals should be renewed in any case, as is good engineering practice, when they are more than a few years old. The Standards organisation responsible for flexible fuel pipes is addressing compatibility with bio fuels.

The discussions and consultation process has provided beneficial dialogue between inland and maritime operators, engine manufacturers and the fuel companies. Through this medium, further advice has been made available, including the avoidance of copper piping in vessels' fuel systems – especially where engines bypass or recirculate a high proportion of fuel (such as in modern common-rail engines), due to copper's effect in reducing the fuel's anti-oxidation and other stabilising properties. This advice stands irrespective of whether the fuel is distillate or contains biodiesel.

The problems of MBC in storage tanks have been described, as has the increased risk of MBC when bio-diesel is blended with fossil diesel. But if MBC does develop, it can quickly infect the entire fuel system. The resulting jelly-like mass of biological debris will soon begin to block pipework, valves and filters and could result in sudden loss of power, leading to potential navigational danger and risk to life and public safety.

Significant changes to the Sulphur content and additives in marine fuels have also been reported to cause changes to the acidity of the fuel and its combustion products. However, these effects are most prominent in seagoing ships burning residual fuels, where sulphur reduction for emission control areas at sea require very great changes and an acidity balance to be achieved by changing the lubricating oil base number. The smaller ships' engine manufacturers and fuel refiners advise that a change from 1,000ppm sulphur to 10ppm sulphur did not affect acidity beyond the scope of the currently specified good quality lubricating oils.

Similarly, it is suspected that changes to the aromatic content of the fuel may have caused changes to the combustion process and its products.

However, extensive operational trials on a range of older rail engines, similar in type and engine power to those larger inland waters vessels, have demonstrated that – given good and regular normal maintenance - no ill effects were observed over a number of thousands of engine running hours, when burning ULS fuels. (See the Railways Safety and Standards Board report on engine testing, detailed at the References).

A separate trial on burning ULS fuel, in inland waterways vessels was undertaken by IVR, a consortium of IW vessel insurers with in-house technical expertise, in the Netherlands. Again, no ill effects were reported.

So we should be reasonably sure that current, new and older engines should be capable of running on BS2869:2010 fuel. However, caution is required with regard to ordering, handling and storage. Vessels' systems should be examined for presence of cop per piping and, wherever possible, such material replaced with suitable marine-grade stainless steel. The condition, means of connection and material for fuel flexible hoses should also be examined and wherever seepage or leaks are suspected or may be at risk, the hoses should be replaced with the appropriate grade. While other risks may present to the operator, engineer or surveyor, these are the areas in which most concern should arise.

Nevertheless, it should be recognised that the majority of owners and operators of the vessels covered by this legislation, Inland Waterways Vessels and Recreational Craft, are not qualified engineers or boatmen, but ordinary members of the public. As professional engineers and surveyors, there is shared a duty to help advise our clients or fellow operators of the advantages but also of the potential pitfalls and how best to avoid them.

FAME-FREE ULTRA-LOW SULPHUR DIESEL FUEL

The best solution may be achieved by ensuring that, where the regulations apply, ULS fuel that is free from bio-diesel ("FAME-free",) is embarked and used. During and since the negotiations with DfT, the IMarEST and others have pressed the safety case of risks associated with bio-diesel and potential MBC in maritime and IW use. In response, the DfT and some fuel refiners, blenders and distributors have made available the supply of BS2869:2010 ULS fuel that is FAME-free.

Engineers and surveyors should advise operators to enquire of their fuel supplier, marina or other distributor about the exact detail of their fuel specification. When "Red Diesel" was considered "just the same", such assiduousness was rarely necessary. However, with the risks associated with bio-diesel, close enquiry is the more important. Where suppliers do not know what they are selling, then they should be avoided. It is highly recommended that supply of FAME-free fuel be demanded, in writing if necessary and suppliers' records of specification inspected, prior to uplift of fuel. As an added precaution, vessel fleet, marina and similar operators could request a sealed and certified fuel sample with each delivery, until they are satisfied that standards are consistent with their requirements and these recommendations.

SURVEYING VANUATU
A SURVEYOR'S NIGHTMARE!

A look into the hardships of surveying in the third world.

Vanuatu is situated in the south western Pacific having New Zealand 1200 miles to the south east, Australia 1000 miles to the west and Fiji 320miles to the east.

It consists of 85 Islands of which half are populated and relies on sea transport for cargo and passenger travel. The archipelago was previously a condominium between England and France and was known as "The New Hebrides" after which it gained its independence in 1983 with a name change to "Vanuatu".

As a tax free country, a shipping registry was started with offices in New York which generated an astounding revenue for the country and joined in the benefits equal to Panama, Cayman, The Chanel Islands and Jersey. The Vanuatu Maritime Authority (VMA) was initiated and run by a Canadian Expatriate, John Rosin and his team.

John ran a tight ship and all registered vessels had to comply with IMO and the State Law or feel the wrath of John.

In the late nineties, many of the local Island traders were owned by government ministers and used them as an alternate source of revenue while controlling the flow of passengers, especially at the time of elections. These vessels are purchased near the end of their life. Here is an example: After a vessel is built in Japan, used for 10 years is then sold to Papa Nguni and used for a further 10 years, then to Solomon Islands and finally Vanuatu, where they come to die. Vanuatu has a frightful record of loosing at least one vessel each year due to low maintenance, bad management and poor crew operations. The VMA started to ground the vessels that did not comply with the rules and this caused a problem with the owners who saw fit to take it to parliament and voted on the removal of John Rosin and caused the dissolving of

the VMA. The job of the monitoring of shipping was handed over to the Department of Ports and Harbour.

This is where all the problems began. Too many owners are friends of the Department directors and operators. Corruption rules and Insurance has became a bad word and most of the vessels do not have insurance as it has become optional not mandatory. If a Vessel decides to take insurance for passengers and cargo, the surveyor is engaged for his services. He inspects the vessel, writes a report, hands over a list of recommendations and enforces all defects that need to be rectified as to comply with the insurance policy.

As a surveyor in this country one walks a tight rope, having the client on the one side needing his survey report for the Insurance company to operate, and on the other side a defect list that needs to be signed off on the vessel as to comply. The surveyor ends up being the bad guy because the vessel cannot operate. Threats and bribes from owners are a daily occurrence and The Ports and Harbour department are constantly overriding decisions made by the Surveyor.

There is a faint light at the end of this tunnel. The aid donor countries, namely Australia and New Zealand, have initiated a program where an advisor / observer from one of these countries has been employed in a controlling position within the Ports and Harbour sector and is able to control the operations and enforce the laws in place.

We can only observe and encourage the recent position, and hope that common sense prevails and the corruption cancer stays out of the equation. This is sure to make life easier for all Surveyors operating in Vanuatu.

"Pssst want to know a secret?"

It's time to...

Aufwachen sie!

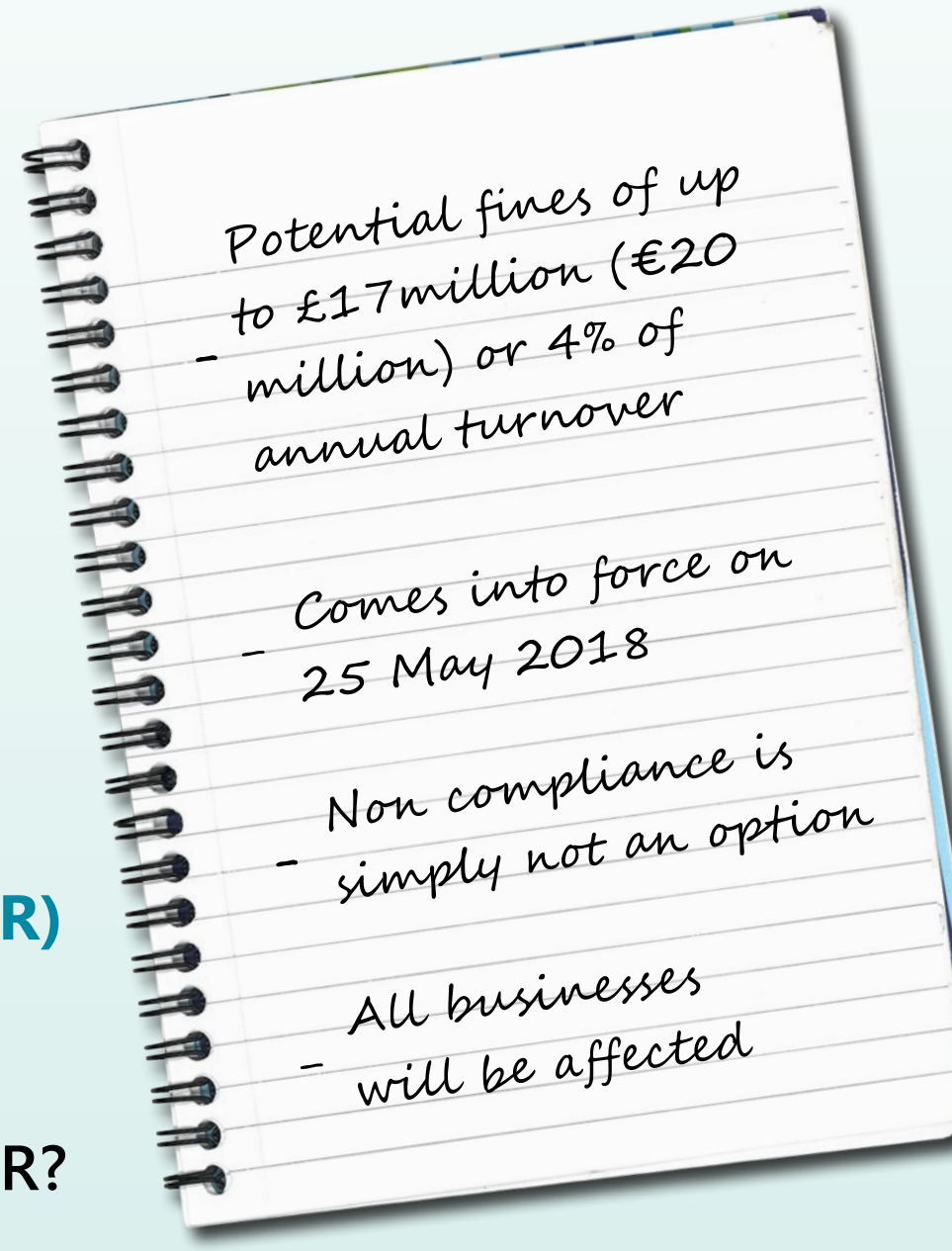
Réveillez-vous!

Wakker worden!

Wake up!

To the new General Data Protection Regulation (GDPR)

Are you ready? Have you even heard of the GDPR?



"If your organisation can't demonstrate that good data protection is a cornerstone of your business policy and practices, you're leaving your organisation open to enforcement action that can damage both public reputation and bank balance. But there's a carrot here as well as a stick: get data protection right, and you can see a real business benefit."

Elizabeth Denham, Chair, Information Commissioner's Office

So what is GDPR?

After four years of preparation and debate, the new General Data Protection Regulation (GDPR), was finally approved by the EU Parliament on 14 April 2016. The GDPR replaces the Data Protection Directive 94/46/EC and has been designed to harmonize data privacy laws across Europe, to protect and empower all EU citizen's data privacy and to reshape the way organisations of all sizes across the region approach data privacy.

Failure to meet the stringent requirements of the GDPR leaves you at the risk of significant fines and penalties for those who do not comply. And ignorance of the new regulation will not be an acceptable excuse. The regulation means an increase in the maximum fine the Information Commissioner's Office (ICO) can impose upon companies in the UK who have not adequately protected themselves against data theft from £500,000 to £17 million (or four percent of turnover). These changes are certainly going to have an impact on your business.

There are two clear drivers behind the GDPR. Firstly, the EU wants to give people more control and say over how their personal data is used. And secondly, the EU wants to give businesses a simpler, clearer legal environment in which to operate, making data protection law identical throughout the single market.

For those of you based in the UK, the cry of 'we are safe after Brexit from this regulation' carries no weight. This regulation will apply no matter what the final outcome of the ongoing Brexit negotiations are. So you have an obligation to comply.

Are you ready for the challenge?

The less prepared you are at this stage, the greater your challenge to comply in time when it hits the statute book in May 2018. Alarmingly one in four UK businesses have cancelled preparations for GDPR, according to a survey by the management firm, Crown Records Management.

There is still a concerning misconception that the regulation only applies to large companies and corporates. But as the ICO keeps stressing, the regulation will affect everyone. It even has an impact on organisations outside the EU who do business with companies inside the EU zone.

Who does the GDPR apply to? The answer is that is applies to 'controllers' and 'processors' of data. Definitions of the two types are that a data controller states how and why personal data is processed, while a processor is the party doing the actual processing of the data. So the controller could be any organisation, from a profit-seeking company to a charity, government or marine survey business. A processor could be an IT company, for example, that is handling the actual data processing. Even if controllers and processors are based outside the EU, the GDPR will still apply to them so long as they're dealing with data belonging to EU citizens. Complicated? You bet!

It's the controller's responsibility to ensure their processor abides by data protection law and processors must themselves abide by rules to maintain records of their processing activities. If processors are involved in a data breach, they are far more liable under GDPR than they were under the Data Protection Act.

The GDPR will affect the way in which you go about your business and how you hold, store and use data about your customers, employees, suppliers and any other individuals whose details you hold. GDPR affects the notices and information that you will be required to give to individuals about how their information is to be used by you. The GDPR increases the power of individuals (including your customers) to control, manage, inspect and in some cases delete forever, their information. The GDPR also gives individuals greater powers to complain about organisations which misuse their data.

Expanded geographical reach

The GDPR regulation expands the reach of European data protection law and applies to:

- any organisation which has a presence in the EU that provides goods and services regardless of whether any payment is taken;
- any organisation which is based outside of the EU but which processes personal data of EU residents in connection with goods/services offered to him/her regardless of whether the processing takes place within the EU;
- any organisation which monitors the behaviour of EU residents, e.g. the tracking of individuals online to create profiles and to analyse behaviours.

Therefore, it will not only be European organisations that need to comply. So be warned - if your business has operations outside the EU which offer goods/services to EU residents, your non-EU operations will also have to comply with the GDPR.

Consent

The GDPR approaches consent more restrictively than the UK Data Protection Act currently does.

- Consent must be freely given on a specific, informed and unambiguous basis.
- Silence, inactivity and pre-ticked boxes are not sufficient.
- Explicit consent will continue to be required for the processing of sensitive personal data.
- Separate consents are required for different processing activities and, importantly, consent must be distinguishable and can't be bundled with other written agreements.
- The supply of goods and services can't be conditional on consent to processing where that processing is not necessary for the supply.

The enhanced rights of data subjects

Data subjects have a number of enhanced rights under the GDPR as follows.

- They have the right to be informed. It is your responsibility to provide information to an individual regarding the processing of their personal data and their individual rights.
- Data subjects have the right of access.
- You will have less time to comply with a request and information must be provided within one month of receipt of the request unless the request is complex, in which case, the period can be extended by two months.
- The right to rectification. Any individual can request that their personal data be rectified where it is inaccurate or incomplete and this must be completed within one month unless the request is complex, in which case, the period can be extended by two months.
- The right to erasure. Any individual has the right to request the deletion or removal of personal data in certain circumstances.
- The right to restrict processing. There are certain circumstances in which an individual can require you to restrict the processing of personal data.
- The right to data portability. In certain circumstances an individual can request you to provide their personal data in a structured, commonly used and machine readable form and transmit this to a third party.
- The right to object. An individual can object to direct marketing. You must inform individuals of their right to object when you first communicate with them and in your privacy notice. For any online services, an individual must be able to object online.
- Rights in relation to automated decision making and profiling. An individual has the right not to be subject to a decision based on automated processing (which can include profiling) where it has a legal effect or a similarly significant effect on the individual.

The governance and accountability of data controllers

The GDPR places onerous accountability obligations on data controllers to demonstrate compliance and there are a number of unwelcome, yet essential administrative burdens placed on data controllers. As a data controller you will have to:

- Provide comprehensive, clear and transparent information to individuals regarding the processing of personal data and their rights.
- Maintain documentation regarding your processing activities.
- Implement technical and organisational measures to demonstrate that you have considered and integrated data protection into your data processing activities.
- Conduct privacy impact assessments (PIAs) where the processing is likely to result in a high risk to an individual's rights and freedoms.
- Have processes in place for the notification of data breaches. Data breaches must be notified to the appropriate Regulator – in the case of the UK, the ICO. This must be done without undue delay and, where feasible, within 72 hours of being aware of the breach. The data breach threshold requiring notification to the data subjects themselves is where their rights and freedoms are placed at a "high risk".

Steps to take to ensure you are compliant

Even though some months off still, you should start taking steps now to ensure that you are ready. The accountability principle means that the onus is on you and your business to be proactive in protecting individuals' data and avoiding breaches.

1. Awareness of the new regulation. Make sure that you and others in your organisation are familiar with the requirements of GDPR.
2. Perform an audit. Carry out an audit of the personal data that you hold. Track the data flows in order to identify what personal data you hold, where the personal data has been obtained from, the legal basis on which you are holding it and where the personal data goes.
3. Privacy Information and Notices. Review your current privacy notices and put a plan in place to make any necessary changes.
4. Consents. Check to see that if you are relying on consent for data processing that it meets the new requirements. If you use pre-ticked boxes to obtain consent for marketing information, this will need to be changed.
5. Contract Documentation. Ensure you audit any existing supplier agreements that you have in place and update data processing/protection provisions in your standard agreements and tender/ contract documentation.
6. Check Procedures. Check your procedures to ensure that they allow for compliance with the data breach notification requirements as well as all the new applicable rights conferred to individuals under the GDPR, including the deletion or removal of information and subject access requests.
7. Privacy Impact Assessments (PIA). Identify whether you need to carry out any PIAs and familiarise yourself with the requirements.
8. Cross Border Operations. If you operate in more than one European country, decide which is the relevant data protection authority for your activities. Also if you transfer or process personal data outside the EEA, you need to identify the mechanism that you rely on to do so and watch out for any changes that may occur over the coming few months/years regarding cross-border data transfers.

Now whilst this may all seem over the top and very challenging, it is. If all this 'red tape' is beyond you, then IIMS advises you to get specialist advice from those in the know. An internet search will find a good selection of organisations who are making it their business to help your business in this area. Make sure you are compliant and ensure you are not in the first batch of test cases that are certain to follow the implementation date in May 2018 for organisations flouting the regulation.

How **fit** for business are you?

It is common for independent marine surveyors, as with any small business owners, to encounter stressful situations during the course of your working week. That goes without saying. One of the ways to help to limit the impact on this and on your health is to keep yourself fit.

Running any business requires constant hard work and commitment to say nothing of dedication too. These days with modern technology – the internet and smart phones – many people feel they are always on duty and on call. All of this can sap your strength, leading to anxiety, poor energy levels, increased stress, physical and mental illness, ultimately culminating in reduced performance at work. And let's face it, when on survey you need to be sharp and alert to ensure you do not miss something crucial!

So if you are going to perform your best work and minimise the possibility of burn out and stress, you need to find ways to deal with it that work for you.

So what is fitness?

Fitness does not only refer to being physically fit, but also refers to a person's mental state. If a person is physically fit, but mentally unwell or troubled, he/she will not be able to function optimally. Mental fitness can only be achieved if your body is functioning well.

How can you become more physically fit?

Becoming physically fit requires a change in life style as well. You will have to incorporate a regular exercise routine in your life and also eat healthier. Avoid junk foods, fizzy drinks and such like. Just by eliminating all these food substances from your life, no matter how temporarily, will allow your body to detox and become stronger. Make sure that you spend more time outdoors in the fresh air – not a huge challenge for most marine surveyors! Generally any activity is better than none.

Being stressed makes us feel tense, out of control and worried. But there are ways and things you can do to try and keep those stress levels manageable and at bay.

Develop a positive mental attitude

Remaining focused on the important things that really matter is vital. You need to find ways in which you can channel your energy away from things that cause you worry and concern (whilst accepting they are nevertheless important) by focusing on more productive and positive activities. You will doubtless have heard the phrase positive mental attitude? Put simply, it is the belief that one can increase achievement through optimistic thought processes.

A positive attitude comes from observational learning in the environment and is partially achieved when a vision of good natured change in the mind is applied toward people, circumstances, events, or behaviours. It is almost impossible to measure the effects of a positive mental attitude; so think of it as a different approach to life.

Exercise every day

Not all of us are cut out or made to pound the streets each day, although running is a good medium. But just 10 minutes of brisk walking each day can have a profound effect. Brisk walking is simply walking faster than usual at a pace that gets your heart pumping. Start with a 10 minute brisk walk a day and then see if you can gradually build up to more. The effects will be seen. Also this time allows you to help to clear your mind, or to provide valuable thinking time about important matters. When you perspire, you release endorphins, which will help to improve your mood and to aid sleep too. But listen to what your body is telling you and if it is telling you that it is feeling sluggish, make sure you listen and do something to counter that.

Your diet matters

Ok so you are a busy marine surveyor, rushing here, there and everywhere, grabbing snacks and food on the run. But remember this. What you eat can impact on stress. This is hardly news, but understanding that excessive amounts of caffeine, sugar and alcohol will can cause physical stress on your body is important.

There are food choices you can make during your busy day and routine that will impact more positively. Examples would be salmon and turkey for example, spinach and blueberries (coupled with other super fruits), herbal teas and avocados to name but a few. Yes these food items are great options to help you manage and reduce the risk of stress. And remember many countries in the world are experiencing higher rates of obesity than ever before. So if you become aware that your weight is increasing (the trouser button has got tight), take steps to arrest the trend before it becomes harder to deal with.

Rest and recovery time

It is critical that you set aside time for rest. Sure that survey report might be critical and the deadline you promised your client is fast approaching, but … If you allow yourself some time to rest, you will bounce back more energised, focused and sharp raring to go again. So be nice to yourself!

Make sure you get sufficient sleep. Experts differ on what is a good amount, but one again listen to your body. If you get up tired in the morning due to lack of sleep, your chances of performing good, quality work that day are diminished. As you sleep, your body is repairing itself and your brain processes all if has absorbed during your busy day. So make time to unwind in the company of loved ones or close friends, take a relaxing bath or put on your favourite music.

Try and practice mindfulness and breathing techniques

Mindfulness is about being comfortable with your thoughts. It leads to you becoming more focused, more award and calmer in your mind. So if you are feeling overwhelmed or hemmed in by something, just close your eyes and take deep controlled breath for just 60 seconds. Then exhale slowly focusing on your breath. Now open your eyes and you will feel calmer instantly.

Gathering your thoughts

Do you keep a diary or a journal? At the end of your day, take a few minutes to gather your thoughts and reflect on the day that has just gone by. Make sure you use these valuable few minutes to get rid of all that mind clutter in your head. Wipe the slate clean before you retire to bed. Just writing a few things down can be therapeutic and once transcribed on to paper, they will appear far less threatening.

Writing a strategic plan for your business

We all need a plan right? Yes of course we do; but how often should one review the strategic plan and what format should that process take?

Let's start with a simple definition of strategy. The dictionary says "A plan of action designed to achieve a long-term or overall aim."

Well that sounds simple enough. But pause for a moment, grab a coffee and reflect. Ask yourself these two simple questions. When did I last review my strategy? And when did I last assess where I want to go with my business? Many people will be shocked at how long it is since they last reviewed their strategic plan (if indeed at all) and some will never have produced one. But if you don't know what your plan is, (or have forgotten), how will you ever know if and when you achieve your goals?

Essentially creating and reviewing a strategic plan is straightforward enough. Think of your plan in three distinct parts, which all link and fit together.

- **Where am I now?**
- **Where am I going?**
- **How will I get there?**

Where am I now?

As you start to think about where your business is currently, you should look at the cornerstones of your organisation. Take a look at your mission and your core values. Do you like what you see? Are you still true to them and do they represent what you are currently about as a business?

Does your mission statement (if you have one) reflect how your business might look in its next phase? It is probable that you will not revise this area often but it is important to review it. The purpose of a mission statement is to describe your business's purpose and to try and explain in a few snappy words why it exists. Sometimes a mission statement will include details of the business and its values. Or it might include the services you provide. Does your mission statement say what you do and does it say why your organization exists? There are some examples of mission statements along side.

The IIMS:

"Dedicated to excellence in marine surveying."

Coca Cola:

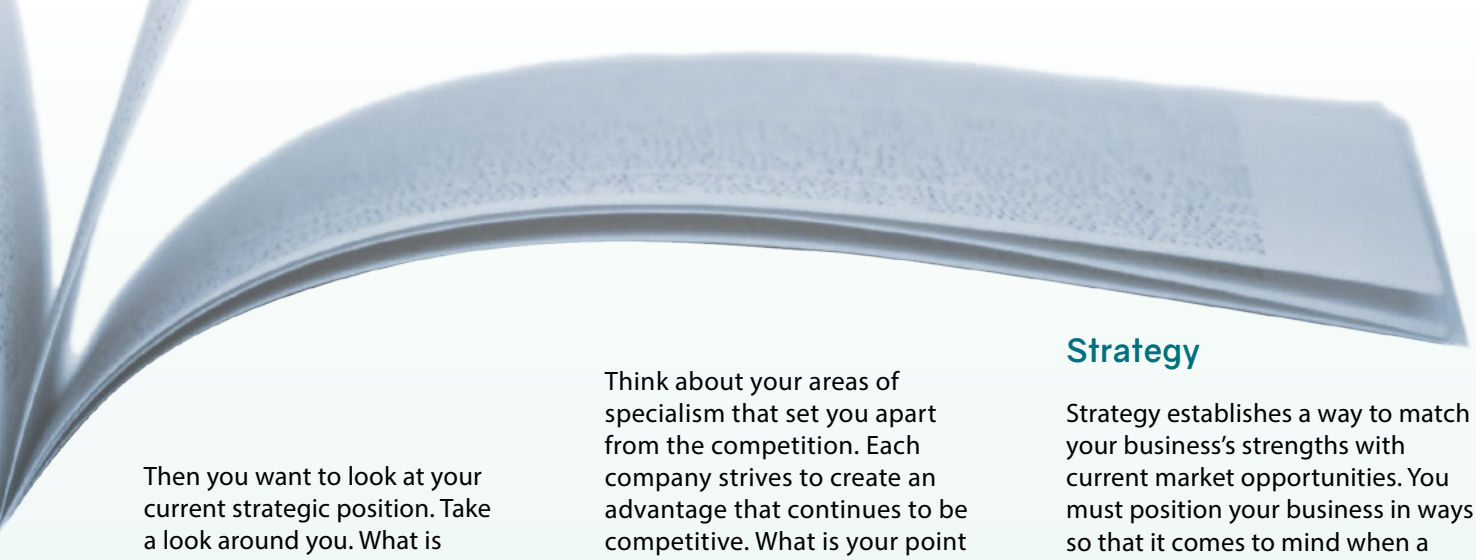
"Our mission is: To refresh the world in mind, body and spirit. To inspire moments of optimism and happiness through our brands and actions."

Ebay:

"Provide a global trading platform where practically anyone can trade practically anything."

Amazon:

"It's our goal to be earth's most customer-centric company, where customers can find and discover anything they might want to buy online."



Then you want to look at your current strategic position. Take a look around you. What is happening internally with your business and what is happening externally in the market? This could determine how and why you need to change what you do and how you do it. One means to do this is by using a SWOT analysis. You should review your strategic position regularly through the use of a SWOT. SWOT is an acronym standing for strengths, weaknesses, opportunities and threats. These elements are crucial in assessing your strategic position. You want to build on your company's strengths, protect against the weaknesses, capitalize on the opportunities and understand the threats.

Where am I headed?

The elements of the question 'where am I headed' will assist you in answering other questions. For example, 'What will my business look like in the future?', or 'What future do I want to create for my business?' None of us can predict the future of course, but that does not prevent you having a vision for where you would like to progress to. If you do not know the answer, no-one else can. So, as you start to think about how to define your business strategy of the future, consider these two points.

1. Sustainable competitive advantage

A sustainable competitive advantage describes and explains what you're best at doing compared to your competitors.

Think about your areas of specialism that set you apart from the competition. Each company strives to create an advantage that continues to be competitive. What is your point of uniqueness? What can your business potentially do better than anyone else? And remember the competition has a habit of catching up too, so it is important you take time periodically to 'sharpen your saw' to ensure you remain one step ahead.

2. Vision statement

Your vision is about formulating in your mind an image of what your business's future make-up will be and where it is headed. Is it possible to see what your business might look like in 5 to 10 years from now? Yes entirely possible!

How will I get there?

Knowing how you'll reach and achieve your vision is the central plank in your strategic plan. It will eat your time and the reason it takes so much time to develop is because there will be many routes from your current position to achieve your vision. Take time to try and pick the right avenues. As part of your planning, you will need to consider all of the following:

Your strategic objectives

Strategic objectives involve long-term planning that will help you connect your mission to your vision. Consider your financial, customer, operational and people strategies. And most importantly, what are the core activities you will need to perform successfully in order to achieve your vision?

Strategy

Strategy establishes a way to match your business's strengths with current market opportunities. You must position your business in ways so that it comes to mind when a potential customer has a need of the type of services you offer.

Monitorable goals

Each goal should be specific and measurable in one way or another. What are your goals over the next 12 months? And over 3 years?

Action items

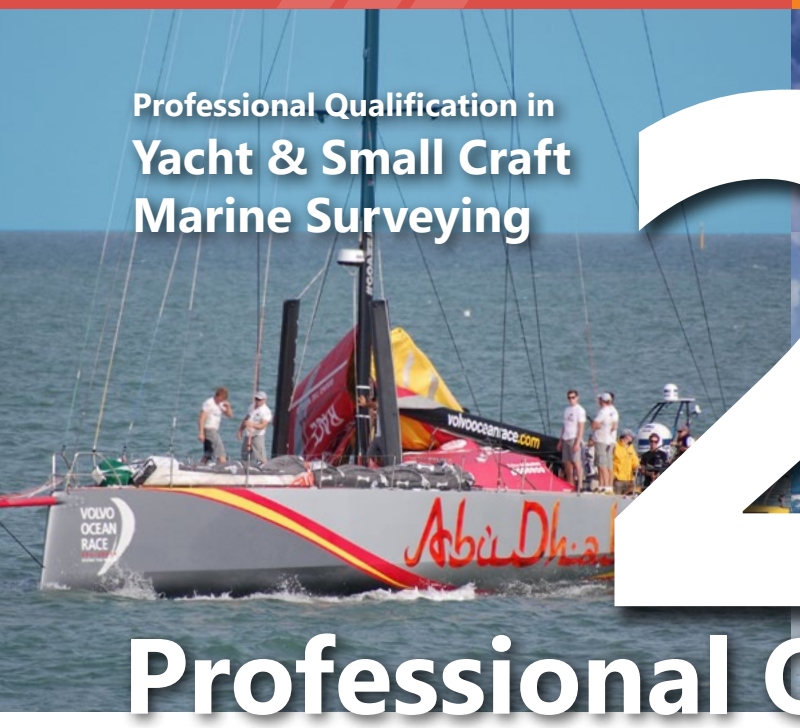
Action items are about implementing your plans which when set against specific actions will lead to achievement of your goals. You should project start and finish dates where possible; and are your action items expansive and ambitious enough to achieve your desired goals?

Execution and delivery

Proof of the pudding is in the eating as they say; so will you commit the necessary investment, resources and time to support the plan and ensure it has every chance of success?

Benchmarking

It is important to set key performance indicators (KPIs) as milestones. This means you can easily measures your progress against your strategic plan. You should identify between six and a dozen KPIs (which you should review regularly) to monitor whether you're making progress and are hitting your milestones.



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New dredging tool combines cutting with suction

A new dredging tool by Goodchild Marine combines cutting with suction to tackle material on land or water. The dredging head has been developed in collaboration with Italian manufacturers Italdraghe over a three-year period and the Norfolk based company believes it is a world first.

"When we built our own dredger, the Rufford, there were a few technical difficulties with the pump, especially when priming, so when we received an order to build a similar one we wanted to use a more efficient pump," said company MD Alan Goodchild.
"After extensive research, we discovered Italdraghe, which specialises in building dredgers and together we worked on the MarinaMaster dredger."

It is transportable and can be used in a variety of operations such as dredging in harbours, reservoirs and canals and removing debris from flood water. The tool is powered by the excavators' own hydraulic system and incorporates a robust pump that is capable of being used both on land and floating.

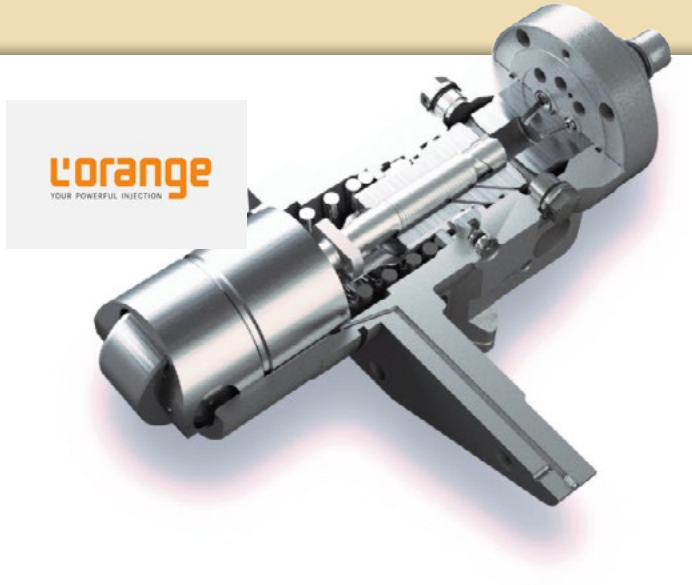
Smaller and more powerful smart Pro Combi S+ inverter/charger launched

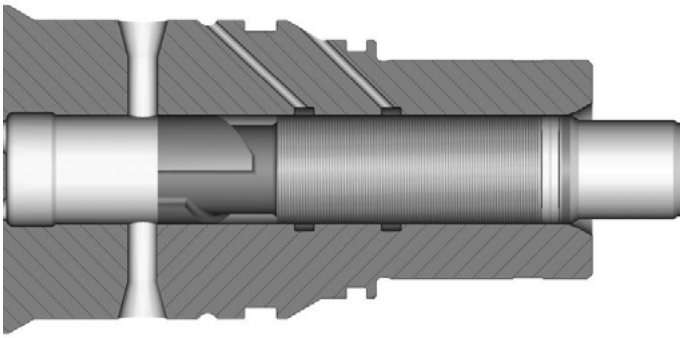
The inverter/charger is now de rigeur for most small to medium-sized cruising boats. They save space, reduce installation time and cost and provide all the AC needs when the vessel is away from a shore-side AC supply.

The new Pro Combi S+, splashproof design is lighter and smaller than its predecessor with all of the AC and DC connectors now integrated neatly into the unit, eliminating the need for terminal safety caps. It features eight battery type selectors, each with a four-stage charge profile. Whilst it offers more power and improved overload ability, it also requires less current when in standby mode.

The unit comes with a 12-24V/5A auxiliary charging module that enables the user to charge their engine start battery whilst bulk charging their main battery bank. A removable control panel and extension lead is also included, which can be located remotely up to 10m from the main unit if required.

Up to 10 times longer running times with the new anti-sticking pump elements from L'Orange





Deposits in the barrel can significantly impede the pump's operation. Common measures such as the regular cleaning of the pump element are very time-consuming and far from ideal over the long run. L'Orange has developed a new pump element with a special coating and a scraper ring that they claim can largely reduce the formation of lacquering and therefore increases the running times of pumps by four to ten times.

With the new anti-sticking pump elements, it is possible to significantly reduce the formation of lacquering and therefore sustainably lower the risk of plunger sticking. For this purpose, L'Orange optimized the pump elements in terms of geometry, surface coating and scraper ring. Lubricating oil and fuel are separated which eliminates the main cause of the formation of lacquering. The scraper ring serves as protection if lacquering occurs in spite of the separation between lubrication oil and fuel. It effectively scrapes the lacquering off the barrel therefore preventing any increase in the lacquering layer in the barrel. The new special coating and the microgrooves do not allow the lacquering to even develop on the plunger. The innovative total solution extends the running time by four to ten times compared to standard products they say.

Alfa Laval introduces BWMS with 20% smaller footprint

Alfa Laval has introduced PureBallast 3.1 Compact Flex. Available for flows of 32–1,000 cu.m/h, it packs the leading ballast water treatment technology into a footprint up to 20% smaller than that of PureBallast 3.1 – the smallest on the market. It also reduces installation costs by up to 10%, thanks to a plug-and-play concept for quick and easy connection.

"Alfa Laval PureBallast 3.1 Compact Flex is economical, both in its use of space and in its installation," says Anders Lindmark, Head of Alfa Laval PureBallast. "As a result, it removes headaches for both ship owners and shipyards. It's an ideal choice for the vast majority of vessels, combining the smallest possible footprint with superior performance in the widest range of conditions."

Quad Marine gains patent for electric catamaran

Quad Marine said it has been granted a patent for its Quad 44 electric catamaran.

The company said its first patent covers various elements of the catamaran. The U.S. Patent and Trademark Office is processing a second patent that covers additional elements of the boat.

The company said the Quad 44 flagship is being marketed as the Tesla of the marine industry and is the culmination of a 10-year development project to create the world's most advanced four-cabin electric cruising catamaran without the design flaws and compromises of traditional boats.

The company recently launched a crowdfunding campaign to raise capital for the production of the Quad 44.

MOB floating strobe torch launched

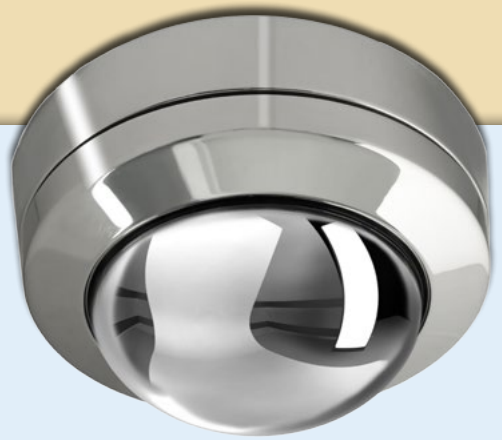
A floating strobe torch that helps locate an MOB using alert and find mobile technology has been launched.

Exposure Lights' OLAS Float-On is a 120-lumen pocket-sized floating torch, which, within eight seconds of immersion, will automatically set off its MOB strobe and trigger the OLAS App alarm and directional finder screens on an on-board mobile device.

Exposure Lights product manager, Tom Harrop, said: "We have created the OLAS Float-On using a combination of Exposure's MOB technology and our OLAS mobile technology to create an 'intelligent torch.

"The Float-On acts independently from the OLAS App system, acting as both a torch and water-activated strobe if a mobile device is not to hand."

The torch can be attached to a lifejacket or lifebuoy and once activated, will float and strobe once every two seconds for up to 24 hours, with visibility from over three nautical miles away.



New GOST cameras released

Global Ocean Security Technologies (GOST) has released its GOST Mini-Ball 1080P and Mini-Dome PTZ 1080P cameras with high-definition and resolution.

The complete line of GOST cameras for yachts are now 1080P, confirmed the company.

Brian Kane, chief technology officer at GOST, said: "Our cameras and complementary live streaming video and storage systems have been responsible for hundreds of captured photos and video used to document on board events, provide awareness of a vessel's status and solve major police investigations."

Measuring 2.4 inches, the GOST Mini-Ball 1080P high-definition camera features a 2-megapixel resolution. Designed to be discreet, the camera's white housing blends with the exterior or interior of a vessel, providing protection without detracting from a boat's overall aesthetic.

VPLP announces catamaran with powerful 400m^2 sail

VPLP design has revealed details of a new 156-foot catamaran powered by a 400m2 sail with twice the average power. Evidence's wingsail is reefable, furlable and fully automated and produces twice the power of a conventional sail. The wingsail design builds on the successful launch of Oceanwings and when integrated into a hybrid propulsion system, it can reduce the fuel consumption of the main engines and the greenhouse gases they emit.

Marc Van Peteghem of VPLP said: "Usually, when you double the length of a boat, you multiply the size of the sail plan by four and the mechanical stresses by eight. But not with Oceanwings."

Mr Peteghem said that Evidence offers the "stability, space and performance of a catamaran with the bonus of a simple yet pioneering rig."

Designed for crossing the Atlantic, Mr Van Peteghem said the vessel's automated wingsail and mechanical propulsion – which can be electric – gives her an incredible range.

WHO SAID THAT?

A COLLECTION OF SAILING, SEA AND SHIPPING QUOTES AND SAYINGS...

Just for a bit of fun and with the aim of bringing a smile to your face and a knowing nod from your head, The Report Magazine has put together an eclectic mix of 50 sailing, sea and shipping quotes - some modern, some ancient. In many cases they are attributed to very famous people, but other examples come from lesser known individuals; but for all it seemed sailing and the sea was the inspiration for their thought provoking words.

Quote: "The cabin of a small yacht is truly a wonderful thing; not only will it shelter you from a tempest, but from the other troubles in life; it is a safe retreat."
By: Francis Herreshoff, Boat Designer

Quote: "To reach a port we must set sail – sail not tie at anchor; sail, not drift."
By: Franklin D. Roosevelt

Quote: "There is nothing – absolutely nothing – half so much worth doing as simply messing about in boats."
By: Kenneth Grahame, Writer

Quote: "It is not the ship so much as the skilful sailing that assures the prosperous voyage."
By George William Curtis

Quote: "Any damn fool can navigate the world sober. It takes a really good sailor to do it drunk."
By: Sir Francis Chichester (while loading his boat with gin)

Quote: "If your ship doesn't come in, swim out to it."
By: Jonathan Winters

Quote: "He who lets the sea lull him into a sense of security is in very grave danger."
By Hammond Innes, Novelist

Quote: "When the draught of your vessel exceeds the depth of the water, you are most assuredly, aground."
By: Ian Walsh

Quote: "Only two sailors, in my experience, never ran aground. One never left port and the other was an atrocious liar."
By: Don Bamford

Quote: "No captain can do very wrong if he places his ship alongside that of the enemy."
By: Horatio Nelson

Quote: "There is nothing more enticing, disenchanting and enslaving than life at sea."
By: Joseph Conrad, Writer

Quote: "He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast."
By: Leonardo da Vinci

Quote: "If the highest aim of a captain were to preserve his ship, he would keep it in port forever."
By: Thomas Aquinas

Quote: "The art of the sailor is to leave nothing to chance."
By: Annie Van De Wiele

Quote: "I'm telling you that India is that way, now set my course."
By: Christopher Columbus

Quote: "'Tis skill, not strength, that governs a ship." **By: Thomas Fuller**

Quote: "The man who has experienced shipwreck shudders even at a calm sea."
By: Ovid, Poet

Quote: "When a man comes to like a sea life, he is not fit to live on land."
By: Dr Samuel Johnson

Quote: "Land was created to provide a place for boats to visit."
By: Brooks Atkinson

Quote: "Waves are not measured in feet or inches, they are measured in increments of fear."
By: Buzzy Trent

Quote: "A ship in port is safe, but that's not what ships are built for."
By: Grace Hopper

Quote: "No one would have crossed the ocean if he could have gotten off the ship in the storm."
By: Charles Kettering

Quote: "Out of sight of land the sailor feels safe. It is the beach that worries him."
By: Charles C. Davis

Quote: "The sea hates a coward."
By: Eugene O'Neill

Quote: "It is not that life ashore is distasteful to me. But life at sea is better."
By Sir Francis Drake

Quote: "The sea is the same as it has been since before men ever went on it in boats."
By: Ernest Hemingway

Quote: "There is but a plank between a sailor and eternity." **By: Thomas Gibbons**

Quote: "Remember. It was a professional who built the Titanic. It was an amateur who built Noah's Ark." **By: Vanessa Linsley**

Quote: "If you're not getting close to capsize, you're probably not pushing hard enough."
By: James Spithill, ORACLE Racing Team

Quote: "A sailor is an artist whose medium is the wind. Live passionately, even if it kills you, because something is going to kill you anyway."
By: Webb Chiles, Sailor

Quote: "The fishermen know that the sea is dangerous and the storm terrible, but they have never found these dangers sufficient reason for remaining ashore."
By Vincent van Gogh

Quote: "I wanted freedom, open air and adventure. I found it on the sea."
By: Alaine Gerbault, Sailor

Quote: "We must free ourselves of the hope that the sea will ever rest. We must learn to sail in high winds."
By: Aristotle Onassis

Quote: "Men in a ship are always looking up, and men ashore are usually looking down."
By: John Masefield

Quote: "The wind and the waves are always on the side of the ablest navigator." **By: Edmund Gibbon, Historian**

Quote: "I start from the premise that no object created by man is as satisfying to his body and soul as a proper sailing yacht." **By: Arthur Beiser**

Quote: "At sea, I learned how little a person needs, not how much."
By: Robin Lee Graham, Sailor

Quote: "Anchor as though you plan to stay for weeks, even if you intend to leave in an hour."
By: Tommy Moran

Quote: "Wind is to us what money is to life on shore."
By: Sterling Hayden

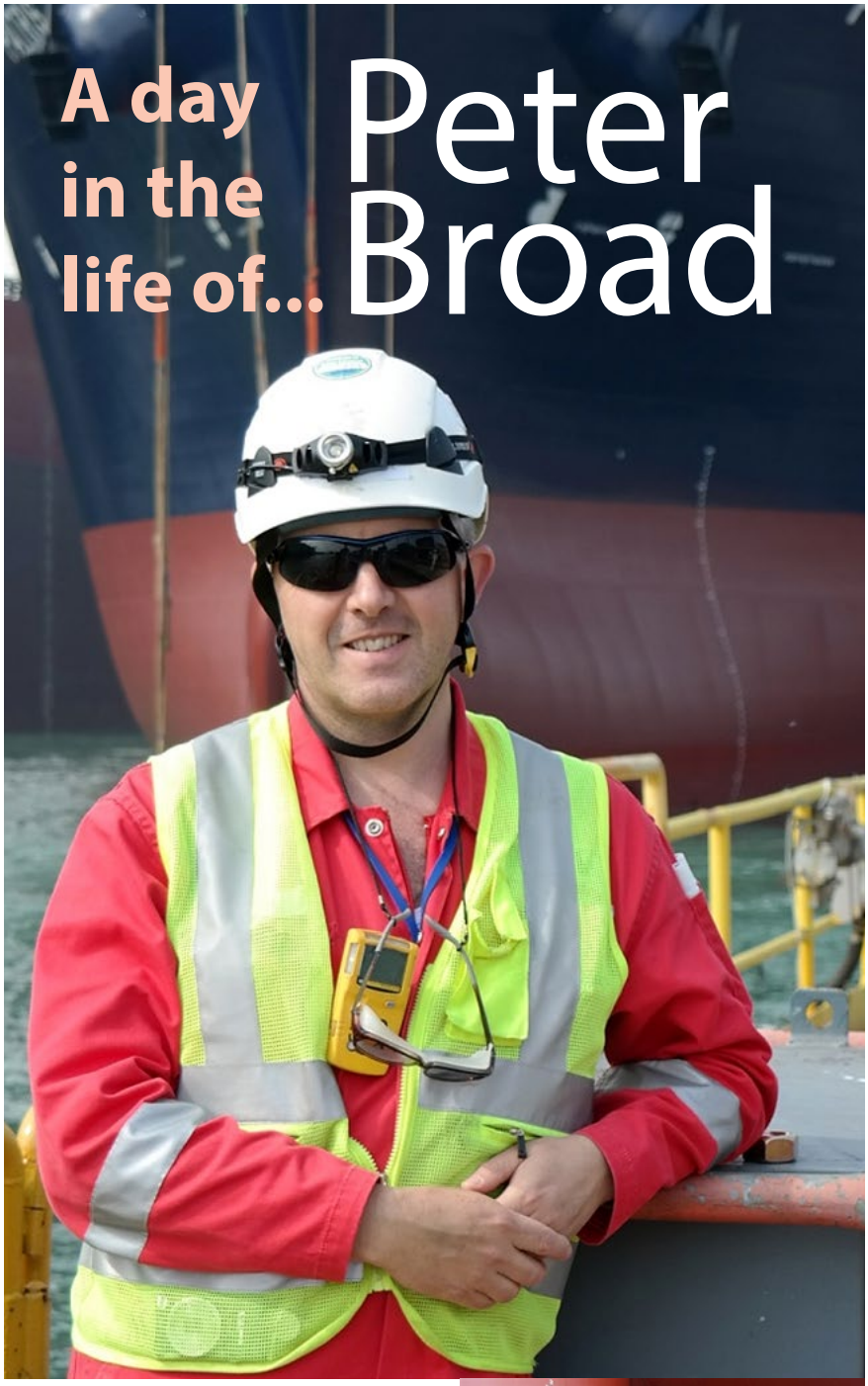
Quote: "We did not all come over on the same ship, but we are all in the same boat."
By: Bernard Baruch

Quote: "To most men experience is like the stern lights of a ship, which illuminate only the track it has passed."
By: Samuel Taylor Coleridge

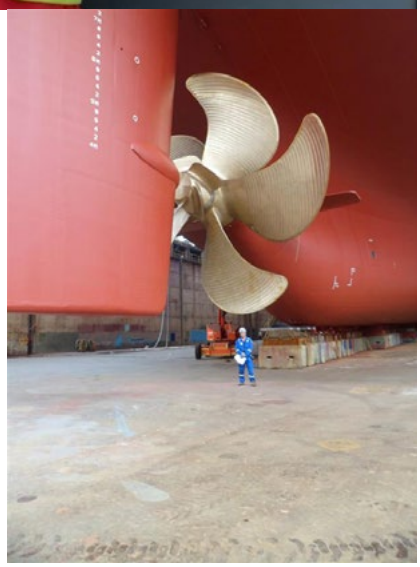
Quote: "If a man is to be obsessed by something, I suppose a boat is as good as anything, perhaps a bit better than most."
By: E. B. White

Quote: "Until you have the courage to lose sight of the shore, you will not know the terror of being forever lost at sea."
By: Charles Cook

A day in the life of... Peter Broad



The Report delves into the background of the innovative Shipyard Acquaintance Course planed to run in March 2018 by Broadreach Marine by interviewing the man behind the concept. Peter Broad, MIIMS, has worked in Korean shipyards, in various positions for Owners and Class, since 2002.



Q1.
How did you first get involved in marine surveying and what was your route into the profession?

After my 12 years at sea with the RFA as an Engineer Officer and a couple of years working with A&P Falmouth as a Shiprepair Manager, I moved to Oman to be the Superintendent for the Sultan's Royal Yacht, *'Al Said'* and his other vessels within the Royal Yacht Squadron. In the position of Shiprepair Manager and as Superintendent, I met with many Class Surveyors during refits and maintenance periods. In Oman I worked closely with Lloyd's Register to maintain the Sultan's vessels in a high state of readiness and within class. At the end of my contract in Oman I was invited to a meeting with the area manager for Lloyd's in Dubai and then I was asked to interview in London. I returned to UK at the end of 1998 and took up the position of Surveyor to Lloyd's Register in Falmouth in January 1999.

Q2.
How has the profession changed during your career and, if so, in what ways?

I never considered that becoming a Surveyor with Lloyd's Register, or any other Class Society, was within my grasp as I didn't have a degree - only an HND and Chief Engineer's Certificate. I didn't know that IACS can accept a Class 1 Certificate and 'Industrial Experience' in lieu of a Degree. So once I had my introduction from the Surveyor in Oman and the meeting with the area Manager in Dubai so many new doors opened up to me.

Since 1999 there have been so many changes in IACS and the member societies. With the general recession hitting the marine industry from about 2008 everything has had to be much more competitive. Class Societies are meant to be non-commercial, but by the fact that Ship Owners want discounts for everything this

has an impact on the services and delivery from Class.

I have worked in Asia almost continuously for the last 15 years as a Senior / Principal Surveyor for LR and then for DNV and now for Owners, as Project Manager. Since about 2011 there has been a significant reduction in ex-pat placements. It is just not cost effective for Class Societies or Owners to pay for ex-pats (and their families) to have positions overseas anymore. So we see many more local staff being employed to fill these positions. While local staff have, in many cases, excellent experience and training, sometimes it is hard for them to be dispassionate and authoritative with their co-workers. I maintain that we still need a few ex-pats within Class Societies and Owners Teams to support the local staff.

Q3.
It must have been a massive cultural change for you, but what was the inspiration and motivation that made you decide to head to South Korea to further your surveying career?

Having worked in Falmouth for three years as a Surveyor for existing ships, (at the start of my career with LR), I felt that I needed to get some experience of 'new building'. In 2002 there were internal opportunities within LR for new build surveyors in South Korea. I applied and was successful in getting the job, but having no new build experience, or qualifications, I was sent to Nagasaki, Japan, to work in the LR office in Mitsubishi Heavy Industries (MHI), as a Surveyor under development, which was a fantastic opportunity for me.

MHI is one of the few shipyards in the world (at that time) that still manufactures all the major components as well as the hull structure for new builds. I was therefore able to observe everything from propeller shaft forging and machining, propeller castings, steam turbine manufacture and dynamic balancing, main propulsion gear boxes manufacture, high pressure and auxiliary steam boiler manufacture and testing, switchboard and motors being manufactured and tested, as well as learning about hull structure and block fabrication. The huge benefit to me of attending at MHI was that they are one of the few shipyards in the world that make MOSS Type and Membrane Type LNG containment systems. This was my first exposure to LNG ships and launched me in to this exciting part of the new building industry.

After ten months at MHI I achieved my Certificates of Authorisation as a *New Build Surveyor* for Machinery, Hull and LNG Systems. I then moved to South Korea and started working in DSME shipyard in Okpo as a Surveyor on a Shell LNG project, working with a great Senior Surveyor as my Mentor.

Q4.
It is known that you are now involved with some cutting edge shipping technology, but without giving away any sensitive commercial information, what are the characteristics of the vessels you are engaged with and what makes them special?

Since 2002 I have continued to work mainly within the LNG new building market.

LNG (mainly methane) is transported in LNG Carriers in a liquified state at – 163 °C. This obviously has its technical challenges to keep the liquified cargo away from the steel hull structure, to stop embrittlement and cracking. There have been a number of technology changes to improve the insulation and methods of containment over the past 15 years and there are more to come.

There are currently approximately 480 LNG Carriers in the global market with 115 on order, or under construction. LNG is a clean fuel that needs no refining, so the LNGC's are essential part of the supply chain (known as 'Floating Pipeline') between the Production and Consuming Terminals.

Technology keeps changing and the use of LNG as a marine fuel is accelerating with the introduction of ever higher restrictions on NOx and SOx emissions form ships.

LNG is now a very attractive alternative clean fuel for tankers, container ships and passenger vessels. This is forcing very rapid technology advances to cope with these new demands for LNG Bunker Tanks and Dual Fuel Engine Technology.

Interesting times lie ahead.

Q5.
What has been your most frightening experience on survey and why?

On a Sunday in mid-February (cold and windy) I was duty Lloyd's Surveyor in Cornwall, Falmouth, and had a call from a laden BP tanker that had come into Falmouth Bay with a burnt out main engine lube oil pump motor.

I attended onboard and established that the motor was being removed ashore for re-winding but that this would take at least three days.

The vessel was scheduled to discharge at Milford Haven on the Tuesday.

In the early days of mobile phones and poor coverage in the south west of UK – it was very difficult to get in contact with my Senior Surveyor, or Area Manager to ask for advice. However, I was contacted by the BP Superintendent who made it very clear that the ship 'MUST SAIL' with only one operational lube oil pump. Commercial pressures you understand!

I had to decide how to safely let the vessel sail, or not and what could be the consequences?

After establishing that the remaining lube oil pump and motor were in 'Satisfactory' running condition with no high temperatures, or vibration and up to date maintenance records. I reluctantly wrote a Conditional Certificate for the vessel to sail for one voyage only from Falmouth to Milford Haven with one main engine lube oil pump operational. She was to proceed with Tug escort if she was within 12 nautical miles of the coast and a minimum of two tugs within the Pilotage areas.

I have to say that I was very frightened for twenty four hours while the vessel sailed from Falmouth to Milford Haven. As the last Surveyor onboard and for allowing a vessel to sail in a compromised condition is a very stressful situation which many of us have faced. Thankfully, she made it to Milford Haven

I would have preferred for the vessel to stay at Falmouth and make repairs before continuing her voyage. But we all have to remember that we are not in the business of stopping ships; we are in the business of keeping them sailing safely.

Q6.
The Shipyard Acquaintance Course you are planning to run in March 2018 is really innovative, but what is your motivation for putting this bold initiative together?

As I have explained I have been very fortunate to work in shipbuilding in Asia over the past 15 years. I am passionate about the high quality of work and the technology advances that I have seen here.

There isn't much shipbuilding in Europe. So it is not easy to get into the industry or to get experience.

Chinees shipbuilding is still evolving and generally not as high quality as that found in Korea and Japan.

I feel that there is a fantastic and unique opportunity for delegates to join this two week course, to be run in March 2018, to experience first-hand every stage of the shipbuilding process in some of the largest and best shipyards in the world. To learn the basics of each of the shipbuilding processes from myself and my fellow trainers, who each have more than thirty years' shipping industry experience.

The small class size (max 20), in groups of 5 max, will allow all delegates to receive safe personal instruction from the trainers as we tour steel works, engine factories and the shipyard/s.

Delegates will see the ship building process in a consolidated two weeks period, something that would normally take a life time to experience.

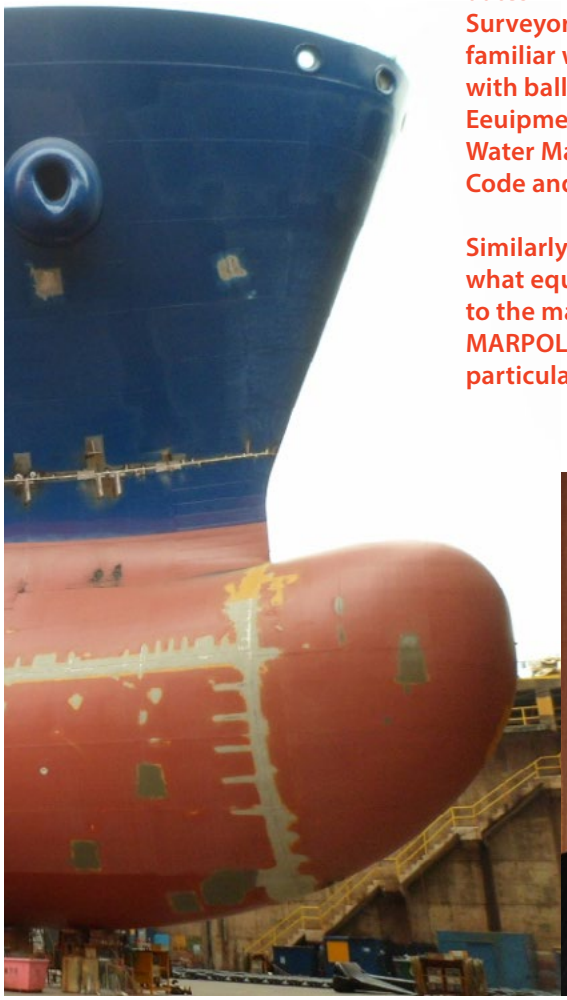
They will be able to return to their workplaces with knowledge that many of their co-workers will never experience. They will attain 10 Certified Continuing Professional Development points from IIMS, IMarEST and Nautical Institute.

Q7.
How do you see the marine surveying profession developing and changing over the next 20 years and what are the key drivers in your opinion that will make change inevitable?

I believe that we will see further consolidations within IACS membership. We will see more mergers like DNV with GL. It is not possible for Class Societies to maintain such high numbers of surveyors. Many experienced, older surveyors, are being made redundant or taking retirement. We are therefore losing a core knowledge base.

This I believe means that there will be future opportunities for independent consultancies like 'Broadreach Marine Ltd', to work with owners and insurers as advisers to help reduce risk.

All surveying will become RISK BASED.



Q8.
Which areas of the profession do you think younger, upcoming surveyors might want to think about specialising in with the rapidly developing new technologies?

Risk analysis will be the future. This means a better understanding of ship operations by the surveyor and understanding methods of assessing and control of risk. This is affecting Class Society Surveying as well as P&I surveying.

Crew competency and training are also crucial factors in risk for ship operations. The surveyor needs to be aware of the crew competencies, or perhaps lack of experience, when operating vessels with new propulsion technology, hybrid technology or unusual cargoes.

New ballast water treatment equipment is evolving fast as we approach new implementation dates in the early 2020s. Surveyors need to become familiar with the evolving market with ballast water treatment Eeuipment and the IMO Ballast Water Management Convention, Code and Guidelines.

Similarly, we all need to look at what equipment is coming in to the market to cope with new MARPOL Annex VI (NOx, SOx and particulate) Air Pollution.

Q9.
What advice would you pass on to an aspiring surveyor?

Find a good mentor. Listen. Observe. Self-study to support your practical experiences.

Always be impartial. Always be polite. If you don't know something, get advice, don't just blag it.

Q10.
If you had your career over again, would you change anything?

Yes. Don't spend five hours a day commuting from Southampton to London for two years.

While career progression is important, don't chase the money and forget happiness.

Don't forget your family and friends. Make sure you enjoy what you are doing.

Q11.
When you put your feet up at the end of the day with a glass of 'South Korean red' how do you like relax and unwind?

There are some lovely beaches, coast line and mountains in South Korea, so outdoor water sports are developing slowly. I sail occasionally with friends and go camping on beaches and in the mountains. Mountain hiking is great exercise and mental relaxation at weekends. A glass of wine sitting beside a camp fire / BBQ is the best way to unwind with friends. Korean food is always an event to be shared with friends and family.

Q12.
As an ex-pat, what one thing do you most miss about the UK; and when you do return to the UK, what do you crave to do most that you cannot do in South Korea?

I miss Cornwall, my home county, and good pint of English Real Ale!

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