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THE REPORT

The Magazine of the International Institute of Marine Surveying

SEPTEMBER 2016
ISSUE 77

INTERNATIONAL INSTITUTE OF MARINE SURVEYING

25TH ANNIVERSARY CONFERENCE

Full report and photos

Debunking the myths of the **Safety Management System**

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THE REPORT

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Editor's Letter

Dear Member

The IIMS silver jubilee celebrations reached their pinnacle at the 25th Anniversary Conference held across London on 31 August and 1 September. It is therefore fitting that in this, the biggest ever Report Magazine published at 80 pages, there are a number of pages and photos devoted to those two days specifically. After all, it was important to celebrate a landmark birthday such as this in the history of the Institute. Pages 16 to 33 are devoted to the AGM, Conference, Awards and Gala Dinner. During this event, the presidency passed from Capt Bertrand Apperry to Adam Brancher, who has written his first President's column (see opposite page). I was present to witness Gary Wittert, who he refers to in his text, speak. The video that is referenced really is worth a watch. It will make you think and perhaps reflect a little too.

The rest of this issue is a wonderfully eclectic mix of articles and features. The lead story has been specially written by Andrew Squibb from RNLI and is entitled 'Marine surveyors helping to save lives at sea' (page 35). RNLI is a renowned and revered worldwide charity and a leading organisation in their field, but what does it take to keep their substantial, mixed fleet maintained and afloat? This article will give you an insight.

I am grateful to Nick Parkyn for his two articles in this issue, which could not be more contrasting. Cloud computing (page 45) is something every surveyor should be aware of. It is of our time as the saying goes. The same could be said about synthetic rigging too (page 42).

Carbon monoxide has been the cause of several high profile, tragic deaths in the UK in recent years. Undoubtedly this is also the case elsewhere in the world too. But what does a surveyor need to know about the inherent dangers of carbon monoxide and its ability to cause 'death by stealth'? Susan Stockwell provides the answers on page 52 onwards.

Nippin Anand from DNV GL opens up a huge topic for debate in his absorbing article entitled 'Light bulbs, red lines and rotten onions' (page 62), published by kind permission of the Nautical Institute. He argues that there are serious flaws with current safety management systems and regimes and explains why he thinks that is.

There has been a significant legal change in recent months when the new marine insurance act came into force. But what does it mean? Joel Lloyd Pinheiro picks his way through the new legislation (page 68). And speaking of new rules, what about the new verified gross mass regulations that has caught some ports and surveyors around the world on the hop? Lee Warltier has some strong views on this particular topic (see page 58)!

I have been brave enough to tackle the thorny subject of surveyor standards and why I believe they matter. Standards are something that every IIMS member must take seriously and should be concerned about. This has been a recurring theme for me this year and I encourage you to read my thoughts on page 50.

If you ever wondered what the IIMS Chairman of Standards, Paul Homer, gets up to in his garden, he is the subject of 'A day in the life of' on page 76 and you can find out!

Here's to the next twenty five years!

Happy surveying.

Mike Schwarz
Chief Executive Officer
International Institute of Marine Surveying

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The President's Column

Dear Member

I've been thinking long and hard about what to write in this, my first President's column, and after consideration decided not to discuss vessels, survey practice, market conditions, insurances, training or cash flow. It's not to say that I'm not deeply concerned about all of these topics - after many years of working for someone else I recently set up my own survey business in Tasmania, Australia - and like any business owner these all figure in my thinking.

What I've decided to explore in my column is a personal rather than an external matter that affects all of us. We are all getting older and we are constantly exposed to a lifestyle and professional pressures that by any measure place a great deal of strain on our bodies and minds. In my view we generally brush these things aside and just 'get on' with it.

My wake-up call came as a result of a conversation I had a few years ago with a senior surveyor, an IIMS member I'm very fond of, telling me about a serious health scare he'd recently had. I'd always thought the man indestructible and it frankly shocked me that a man of his constitution and calibre had experienced what he had. It set me thinking further. At any surveyors' conference and gathering we discuss work, our peers, friends and mentors and invariably the topic of a colleague's ill health comes up. The issue of surveyors wellbeing is not uncommon.

Most of us alternate between sedentary report writing screen time, large amounts of driving or flying, all-weather work site visits with all their attendant hazards, more sedentary screen time, food grabbed on the run (my weakness is Cape Grimm beef pies- you'd never know it from my figure) and on it goes. Throw in sometimes tense and awkward encounters with clients, authorities and so on and I'm sure you will agree that we are all of us not exactly doing the things that the experts say will lead us to a long and healthy life.

My friend's health scare happened some months before the IIMS Australian Branch 2015 workshop and it prompted us to seek out a real expert on matters affecting our demographic to address the group. If you haven't had a chance to look at the video of Professor Gary Wittert's speech to the workshop I commend it to you. It can be found at http://www.iims.org.uk/media/marine-surveying-videos/iims-australia-branch-2015-workshop. He is a world renowned expert on this subject and his presentation is thought provoking and very funny in parts.

My first column's message is that we all need to be mindful of the stresses and strains the work we do puts upon us. Diet, exercise, regular health checks, proper sleep, talking to people about the way you are feeling and a life outside of work are important factors in counterbalancing these pressures. I'd be the first to admit I don't have this entirely sorted out but I'm trying. The world would be a far poorer place if you were to leave it prematurely, so please do a personal stocktake and if necessary start taking some steps to hang around!

Mr Adam Brancher *President*
International Institute of Marine Surveying
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Marine News

AMSA NOTIFIES CHANGES IN ITS CERTIFICATION AND ACCREDITATION SERVICES FROM 2017

AMSA has issued new edition of its publication 'Working Boats' including information regarding changes in its certification and accreditation services.

Currently, even though AMSA is responsible for regulating domestic commercial vessels (DCVs) across Australia, the way you get your services — such as certificates and vessel IDs, undertaking surveys and the fees associated with these services — is not the same around the country. Those services are currently delivered by each state and territory, which sets its own procedures and fees for these services.

From 1 July 2017, not only will the rules and standards for DCVs be consistent across Australia, but the way you receive services (and the fees for those services) will also be the same across Australia, regardless of where you operate.

Certificate of Competency (CoC) — All crew will still need to have the appropriate skills, competencies and other additional requirements, depending on the CoC they seek. These additional requirements may include a qualification; qualifying sea service and workplace experience (guided by task books); and medical and eyesight fitness standards.

You can undertake nationally recognised training at Registered Training Organisations (RTOs).

Certificate of Survey (CoS) — If your vessel is a new vessel and requires a CoS, it will require an initial survey before it is able to start operating commercially. This will need to be done by an AMSA-accredited marine surveyor, who will then provide a survey report to AMSA advising whether a CoS should or should not be issued. If they are not satisfied that your vessel complies with the relevant regulations and vessel standards, they will let you know what you need to do to the vessel to meet these requirements and you will need to have the vessel assessed again by an accredited surveyor once the prescribed work has been carried out. If your vessel does not require a CoS, you may still need to have your vessel assessed and approved before operating commercially.

Periodic survey — Your vessel may need a periodic survey or inspection to make sure it is fit for purpose. AMSA will let you know when you need to have your vessel surveyed or inspected. When this happens you will need to contact an accredited marine surveyor to carry out the inspection.

Unique vessel identifiers — If your vessel is new, you will need to get a unique vessel identifier (UVI) when your vessel is approved to operate commercially. If your vessel doesn't have a UVI, you can either make a separate application, or a UVI will be issued the first time you obtain a certificate or other approval from AMSA.

Marine surveyors must be accredited under the Marine Surveyor Accreditation Scheme — Although marine surveyors will be working privately under the National System, they must be accredited under AMSA's Marine Surveyor Accreditation Scheme in order to survey vessels and provide survey reports to AMSA. Marine surveyors must be accredited under the Marine Surveyor Accreditation Scheme — Although marine surveyors will be working privately under the National System, they must be accredited under AMSA's Marine Surveyor Accreditation Scheme in order to survey vessels and provide survey reports to AMSA.

Certificate of Operation (CoO) — AMSA will be responsible for issuing CoOs. To apply for a CoO, you will need to complete an application form along with providing any required information about your operation. AMSA will need to be satisfied by your application that you have the competence and capacity to ensure the safe operation of the vessels. This includes the need to show evidence of an SMS for the vessels. AMSA will not issue you with a CoO if it is not satisfied that you are a fit and proper person. CoO holders must meet specific conditions and standards that apply through their CoO.

WÄRTSILÄ'S HYBRID BATTERY TECHNOLOGY TO BE USED ON NEW WIGHTLINK FLAGSHIP FERRY

A ship under construction at Cemre shipyard for UK operator Wightlink will be the first ferry to employ Wärtsilä's technology that uses batteries to manage engine load fluctuations.

The use of batteries in conjunction with four six-cylinder Wärtsilä 20 generating sets – controlled by a 690v main switchboard, an integrated automation system and a power management system also supplied by the Finnish company – is

Impression of the new Wightlink flagship ferry

expected to improve fuel efficiency and reduce emissions while lowering noise levels.

The ferry will serve the crossing between the Isle of Wight and the British mainland. It will feature two fixed vehicle decks to hold the equivalent of 178 cars, and will have space for more than 1,000 passengers. Delivery of the Wärtsilä equipment is scheduled to commence in spring 2017, and the vessel will enter service in 2018.

Elwyn Dop, operations director, Wightlink, said: *"Our new vessel will be Wightlink's flagship, and we are confident that the Wärtsilä equipment and systems are exactly the right choice for this modern ferry."*

Wärtsilä said that its hybrid management system enables a significant energy improvement over conventional systems by running the engines at optimal load and absorbing many of the load fluctuations using batteries.

In addition to the propulsion machinery, energy and automation systems and sewage treatment, Wärtsilä is also supplying technical and project management and system integration.

MCA ISSUES MGN 432: SAFETY DURING TRANSFERRING PERSONS

The UK MCA has issued Marine Guidance Note 432 in order to provide advice for all vessels engaged in transfers of persons at anchor or underway. It gives guidance on taking the necessary precautions, the use of trained persons and carriage of requisite equipment to aid a safe transfer and rapid recovery of a casualty from the water.

Pilots and Pilotage Authorities regularly undertake transfer of persons between vessels at sea, and it is recommended that this guidance should be read in conjunction with SOLAS Ch V, Regulation 23. However this guidance is predominantly aimed at those who are not experienced in such

There have been accidents, some fatal, whilst transferring persons between vessels making way. A fatal accident occurred on the River Humber when a mooring assistant fell whilst transferring between a tug and tanker after losing his footing and grip on a ladder. More recently a naval officer fell into the River Thames when transferring by ladder from a frigate to a Class V passenger vessel. With the smaller vessel secured forward, the painter parted and, as the two vessels separated, the ladder spreader became trapped in the bulwark of the smaller vessel.

The key lessons from such incidents are that trained and fully briefed persons should be used to conduct transfers with appropriate risk assessments carried out and strict operational procedures followed -particularly in cold, wet and adverse sea conditions. These measures will assist in preventing accidents and ensure a rapid recovery from the sea should this occur. Personnel transfer should always be carried out with regard to the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 and relevant guidance, including the Code of Safe Working Practices for Merchant Seafarers, The Embarkation and Disembarkation of Pilots – Code of Safe Practice, SOLAS V as amended and MGN 533 on Means of Access.

Wherever possible transfer of persons should take place with the vessel secured at a berth via an accommodation ladder/gangway. However it is recognised that sometimes it is unavoidable to undertake transfers of persons at sea.

TRANSFERS AT ANCHOR
Transfer of persons, other than those specially trained in the use of pilot ladders, from/to a vessel at anchor should be carried out in accordance with relevant guidance using proven arrangements e.g. accommodation ladder (if provided)/pilot ladder /combination of an accommodation ladder and pilot ladder as appropriate. However there may be circumstances where use of an accommodation ladder is considered to be unsafe as it may result in damage to the launch and/or the ladder, or other operational reasons why a transfer alongside cannot be undertaken.

TRANSFERS WHEN UNDERWAY
Except where a vessel has a specially designed and dedicated passenger transfer system the transfer of persons (other than those experienced in the use of pilot ladders) from/to vessels which are not secured alongside or at anchor should not be attempted unless it is unavoidable. Means of transfer should be carried out in accordance with relevant guidance using proven arrangements e.g. accommodation ladder (if provided)/pilot ladder /combination of an accommodation ladder and pilot ladder as appropriate. Where appropriate, both vessels should make way at the slowest speed necessary to provide a lee and/or a more stable platform with the Masters of both vessels mindful of the possible effects of interaction between the vessels.

Masters should agree beforehand which vessel is the controlling vessel during the evolution. Often it is the larger of the two vessels which assumes control when, in reality, it would more appropriate for the receiving vessel to confirm as safe and readiness to receive personnel.

LLOYDS REGISTER DEFINES LEVELS AUTONOMOUS SHIP DESIGN AND OPERATION

With autonomous ships likely to enter service soon, LR has set out the 'how' of marine autonomous operations in a new ShipRight procedure guidance. The guidance describes autonomy levels (AL) ranging from 'AL 1' through to 'AL 6' denoting a fully autonomous ship with no access required during a mission.

The 'AL' system of levels provides clarity to designers, shipbuilders, equipment manufacturers, ship owners and operators, enabling accurate specification of the desired level of autonomy in design and operations and paves the way to a clearer understanding of the investment opportunity/ risk equation.

The procedure takes the user from identifying the initial 'business need' to a 'systems classed' status of a design and a ship, ultimately, in operation.

Luis Benito, Head of Innovation Strategy & Research says that autonomous ships are a reality: "Maybe a few years ago this was seen as unlikely. Today, the market wants autonomous ships that can be operated with varying levels of control. So, we have now described and delivered the levels required to make decisions enabling the design, construction and operation of autonomous ships to take place. The levels provide a procedure to address the safety and practical issues required to meet classification, regulatory and market drivers."

LR is working with leading industry players to make autonomous shipping a practical reality. This guidance has been peer reviewed by leading technology companies.

Benito adds: "In the future everything will be cheaper, but with better performance. That's what the market is looking for. But most importantly, from LR's perspective, as well as being more cost effective, shipping can also be safer. Safety will reduce costs. We are only at the start of the cyber ship and a cyber-enabled shipping industry but we are making amazing progress. We are trying to help the industry adopt the data, digital and connectivity technologies could deliver benefits to shipping – and to help keep ships safe.

"We are working with clients to create the new generations of cyber ship safety, security and maintenance monitoring and performance guidance that will help secure improved performance and return on investment. Autonomy is one part of our cyber shipping opportunities."

REPORT ON THE SINKING OF THE SCALLOP DREDGER JMT PUBLISHED BY THE MAIB

The MAIB has issued its report into the capsizing and sinking of the scallop dredger JMT in 2015. The report will be of particular interest to surveyors given that the incident raises issues around the effect modifications made potentially had on the stability of the craft.

During the afternoon of 9 July 2015, routine contact was lost with the skipper

The report on the sinking of the scallop dredger JMT has been published

and crewman on board the 11.4m scallop dredger JMT that was fishing off Plymouth, UK. A search and rescue operation was initiated the following morning when the vessel did not return alongside as expected.

The body of the crewman was found floating in a life-ring; he was not wearing a lifejacket. The wreck of the vessel was located 3.8 miles off Rame Head and was later recovered. The skipper was not found.

The MAIB investigation identified that:

- JMT capsized and sank at around 1501 on 9 July 2015; the weather was good at the time, with slight seas.
- The vessel had only 25% of the reserve of stability required by larger fishing vessels.
- The vessel's stability had been adversely affected by structural modifications and by aspects of the vessel's operation.
- Capsize was possibly triggered by emptying the starboard dredges while the port dredges and their contents remained suspended.
- The crew's likelihood of survival was reduced by not having the opportunity to broadcast a distress message, release the EPIRB from its stowage, lifejackets not being worn and the failure of the liferaft to surface.

Safety Lessons

1. Structural modifications that increase top weight and raise a vessel's centre of gravity (winches, bigger gantries, higher lifting points etc), will reduce its stability. The extent of this reduction can only be determined through a full stability assessment.

2. When fishing, suspended loads, keeping the catch on deck, low fuel levels and not closing hatches and doorways have the potential to jeopardise a vessel's stability.

3. Small fishing vessels are not required to meet stability criteria. However, simplified methods of assessing stability, such as the Wolfson Mark, can at least provide a basic indication of safety at very little cost.

4. The crew did not use the 'constant wear' lifejackets that were available on board. Neither survived.

5. The liferaft's HRU activated, but it probably didn't surface because the canister became trapped by the vessel's superstructure. Finding a place to put a liferaft on small fishing vessels where it will not get damaged, interfere with the fishing operation and have a clear route

to the sea surface in the event of capsize is not always easy. However, it warrants very careful and serious consideration.

6. It took over 18 hours for the crewman to be found because the EPIRB was kept in the wheelhouse and was not float-free. The fitting of a float-free EPIRB would have alerted the coastguard almost immediately and would have dramatically increased the likelihood of the crew's survival.

BLOHM+VOSS TO OPEN REFIT FACILITY FOR MEGAYACHTS IN THE MEDITERRANEAN

Blohm+Voss has announced that it has won the tender for the set-up of a new maintenance and refit facility for megayachts in La Ciotat, in the South of France. The company will partner with La Ciotat Shipyards (managed by SEMIDEP-Ciotat), the local company in charge of the site development which is providing a large dry-dock and neighboring workshop premises embedded within the existing shipyard. Blohm+Voss will utilize this new facility in the heart of the Mediterranean to maintain and service megayachts over 80 meters in length. Operation is planned to start in November 2016.

Blohm+Voss Chief Executive Officer, Fred van Beers commented: "Setting up a maintenance facility for megayachts in La Ciotat is an important step in our current growth strategy. With our new office in Monaco and this central location in the Mediterranean we are moving our core business closer to our customers; we are now offering more flexibility and tailored life-cycle.services. The dock in La Ciotat is 200 meters long and 60 meters wide. Our customers now have the choice of utilizing our extensive shipyard facilities in Hamburg or our new base in La Ciotat for large yacht maintenance, refits or conversions. Whatever our customers require: we will provide our renowned, exceptionally high Blohm+Voss quality standards and on-time services at both sites."

Jean-Yves Saussol, Managing Director of La Ciotat Shipyards explains: "We have chosen Blohm+Voss as our trusted partner due to the quality of their business plan, their extensive track-record, the financial strength of the company and its strong desire to work closely with the local community." The services that Blohm+Voss will bring to La Ciotat complement the services currently offered by other companies on the yard. Blohm+Voss aims to utilize the existing synergy potential and will start talking to future partners on and around the shipyard within the next month.

"La Ciotat Shipyards and Blohm+Voss are the perfect match", explained van Beers. "The location is ideal for us because it offers excellent facilities, highly-qualified local craftsmen and an extensive local supplier network for the megayacht industry. In return, we will bring additional business to the yard with our focus on the 80m+ sector and our reputation for undertaking complex refits on time and on budget. We look forward to cooperating closely with La Ciotat Shipyards and the local community to support them in developing a strong local foothold in La Ciotat as well as a worldwide reputation for the maintenance and refit of megayachts."

BEWARE SIGNAGE DROPPING FROM A CRANE BOOM WARNS IMCA

In one of its regular safety bulletins, the International Marine Contractors Association (IMCA) has issued new information on an incident involving parts falling from a crane – in this instance a steel sign. IMCA says that this is not the first time this has happened and individuals may wish to review this in light of other similar reported incidents.

A piece of metal fell from a crane boom. The incident occurred on a vessel whilst alongside during the testing of the luffing motors' braking system on the main crane. During this testing the crane boom made an uncontrolled descent into its crutch, resulting in a 60 kg steel sign falling 15m down to the deck. Investigation revealed that the sign was fixed by 4 x stitch welds, of which three were completely rusted away.

The following immediate actions were taken:

All Stop. The hydraulic technician contacted the bridge and chief engineer to report the incident and stop all associated operations;

The area beneath the crane (starboard dock wall, main deck passageway) was barriered off;

Crew working nearby were asked to make safe any work and leave the job;

A dropped object inspection of the crane boom took place to search for further loose items;

A dropped object inspection on the starboard dock wall and fly jib platform was performed;

A formal investigation began

Initial recommendations – subject to completion of investigation – were:

Review standard operating procedures for testing the brakes of the cranes;

Review the associated Permit to Work requirements (e.g. further consideration of what areas nearby should be barriered off);

Thorough inspection of all elements and parts of the crane (main, auxillary and signage) before further testing and use.

In recent times there have been a number of incidents reported in which objects have fallen from the crane itself. This incident forms yet another timely reminder to redouble efforts to check areas that might otherwise be overlooked in the search for potential dropped objects.

Volvo Penta has launched a new remote control battery management system

VOLVO PENTA CUTS DOWN ON COMPONENTS WITH NEW BATTERY MANAGEMENT SYSTEM

Volvo Penta has launched its latest battery management system, suitable for 12 and 24-volt installations. The device is a remote control and gives users a 'car like experience' offering theft protection, battery control and monitoring.

"It gives total control of the system, both status and health," explained Petter Andolf, product management, Volvo Penta.

"When leaving a boat, people can just switch off and the system will power down and switch off. It's built to be very simple and robust."

He added: *"The main breakers will turn off the control system, unlock and power up. Boat owners can step on board start the engine and cast off."*

The system has been designed to cut down on different components as 'fewer components means fewer sources of failure' claims Volvo Penta.

"In a traditional installation of two battery groups there will be a number of components and power cables bringing the components together," he explained. *"Our unit has all the components and functions built into one unit. There are savings in power cables, electrical components and component points."*

And he explained how the battery management system has been designed around a modular approach to make it suitable for small or larger boats that will have larger consumption and more units.

The modular design also means users can have a system with different levels of features.

These can include items such as time left to charge the batteries, the batteries' health, battery sensors, the distribution and crossover between batteries and alarms.

And with the complete system, Volvo Penta's e-KEY remote can also be added to control part of the system remotely and also control optional equipment such as deck lighting, gangway lighting or a sunroof.

It works with both Volvo Penta and also other makes of engines.

CHEETAH MARINE BUILDS THE WORLD'S FIRST HYDROGEN POWERED BOAT

Cheetah Marine has built a hydrogen-fuel catamaran which demonstrates the potential of zero CO2 technology in the marine industry. It is believed to be the first hydrogen powered craft.

The 9.95m catamaran, designed and built at Cheetah Marine's workshops on the Isle of Wight in the UK, features a Hydrogen Internal Combustion Engine (HICE). The Honda outboard works in the same way as traditional petrol engine, except it burns hydrogen and produces harmless water vapour as the only emission.

The catamaran is the first marine example of HICE technology. Testing of the vessel took place earlier this year and included a 100km voyage round the Isle of Wight.

Commenting on the boat's performance during the voyage, Lucy Strevens of Cheetah Marine, said: "We finished three hours ahead of schedule and still had enough hydrogen to circumnavigate again. It was a great success. Previously craft have been powered using hydrogen fuel cells, but it doesn't appear there's been a boat running on hydrogen in a traditional internal combustion engine."

This catamaran forms part of a government-funded project through Innovate UK, which has also enabled the opening of a refuelling station near the M1 in Rotherham for hydrogen-powered vehicles.

Project partner, ITM Power, installed a marine refuelling station at Cheetah Marine's base in Ventnor. It produces hydrogen from mains water and is assisted by a bank of 26 kW solar panels.

Photograph of the Love for Lydia alongside a marina after the accident showing the canopy as found

MAIB SAFETY BULLETIN PUBLISHED FOR THE LOVE FOR LYDIA CARBON MONOXIDE POISONING INCIDENT

The MAIB has published a safety bulletin after the carbon monoxide poisoning on board the Doral 250 SE motor cruiser Love for Lydia at Wroxham on the Norfolk Broads between 6 and 9 June 2016 resulted in 2 fatalities.

The safety bulletin highlights the dangers of carbon monoxide on boats and calls for people to fit carbon monoxide alarms, similar to those used in caravans and homes.

MAIB Chief Inspector Steve Clinch said: *"Carbon monoxide alarms are commonplace in our homes and in caravans, but the tragic deaths of a couple and their dog on Love for Lydia are a reminder of the dangers of carbon monoxide on boats."*

"This is the third double fatality due to carbon monoxide poisoning that we have investigated in around three years."

"There are many sources of carbon monoxide on boats including engines, generators, solid fuel burners and cookers. Canopies on deck can allow poisonous gases to build up, quickly reaching fatal levels. Ventilation is essential."

"Carbon monoxide is a silent killer with symptoms similar to colds and flu. If carbon monoxide is suspected, it is important to stop the source, get to fresh air and seek medical attention. A carbon monoxide alarm could save your life."

MAIB has produced a short video about carbon monoxide poisoning: **https://youtu.be/ZnITXUVYzUY**

INITIAL FINDINGS:

The motor cruiser's 5.7 litre petrol-driven inboard engine had been left running at 3000rpm while it was moored alongside, probably to charge the batteries. A slight wind blowing from the stern caused exhaust gas emitting from below the aft transom to enter the canopy covering the aft deck from where it spread down into the accommodation area forward.

During in-situ tests with the engine running the concentration of carbon monoxide from the wet exhaust, reached high levels in the accommodation in less than 3 minutes. The accommodation area was not ventilated and the couple and their dog were overcome. No carbon monoxide alarms were fitted.

SAFETY LESSONS:

1. Carbon monoxide is a by-product of combustion appliances fuelled by oils, solid fuel or gas. It has no smell, no taste, is colourless and is extremely difficult for human senses to detect. Therefore, it is essential that carbon monoxide alarms are fitted in areas where carbon monoxide could accumulate and pose a risk to health (such as the accommodation areas of motor cruisers). When selecting a carbon monoxide alarm, preference should be given to those marked as meeting safety standard EN 50291-2:2010, which are intended for use in a marine environment. It is essential to fit alarms following the manufacturer's guidance, to test them routinely using the test button and not to ignore them.

2. The use of canopies can potentially increase the risk of poisoning, even when a boat is making way. Although external engine exhaust outlets discharge exhaust fumes into the open, the wind, aerodynamic effects and the proximity of nearby structures frequently result in the fumes entering the boat. Ensure that all spaces, including those under a canopy or an awning are always well ventilated. Never ignore the smell of exhaust fumes in any enclosed space.

3. Carbon monoxide is a silent killer. Its symptoms can be similar to colds, flu or hangovers; headaches, dizziness, nausea, vomiting, tiredness, confusion, stomach pain and shortness of breath are warning signs of its presence. If carbon monoxide poisoning is suspected, stop the source, get to the open air and seek medical attention.

One of the presentations at the IIMS Small Craft Working Group 'Super Training' day on 24 October 2016 will be on the subject of carbon monoxide poisoning. Watch for further details.

Members' News

IMC GROUP P.C. AND MACEDONIA CONSULTING COMPANY "MMC" HAVE RECENTLY JOINTED THEIR FORCES TOWARDS JORDAN MARITIME COMMISSION "JMC" TENDER NO 01/2015.

The 1st official meeting with **"JMC"** was conducted, at **"JMC"**, premises Aqaba / Jordan on **26th-27th July 2016**, in order to discuss and analyze, tender / project **"Initiation-Phase"** which is the first phase in the **Project Life Cycle**. In particular, during the meetings we have initiated a project by defining its purpose and scope, as has been stated in the **"JMC"** Tender No 01/2015, justification for initiating it and the solution to be implemented. Moreover all project parties involved, concluded to a suitably skilled representative project team.

The scope of the tender / project, contains the following activities:

1. **Study description:** This research project is an analytical-based study, including but not limited to, investigating the existing status of ship registration in Jordan, analyzing the obstacles of promoting ship registration including legislative administrative, regulatory, etc., studying the internal and external factors impacting the ship registration, carrying a comparative study on main regional and international ship registries with that of Jordan focusing on cost, procedures, time, advantages, etc. and identifying ways, measures recommendations necessary for enhancing this sector.

2. **Study goal:** The results of this study will be mainly used to...
   a. enhance ship registration sector in Jordan and increase the number of ships registered under the Jordanian flag,
   b. simplify procedures as to facilitate the fast and efficient of ship's registry's issues,
   c. improve the organization structure /operation of various departments within the registry and provide more financial sound solutions.

3. **Objectives:** The study will achieve this goal by identifying specific factors that have impact on ship registration and will put forth strategies for ship registration enhancement and policy change in this regard.

IIMS INDIA 25TH ANNIVERSARY CONFERENCE

Anyone planning to attend the India Branch Conference on Tuesday 5 October being held as part of the 25th Anniversary celebrations should be aware of some very special rates that have been made available for IIMS delegates. The splendid, 5 star Lalit Hotel in Mumbai is offering a daily room rate of INR 6,500 + 19.50% tax for a deluxe single or double occupancy room, inclusive of breakfast and two-way airport transfer. If you want to take advantage of this great offer, please email Milind Tambe (IIMS India Regional Director) to let him know at **milind@troupe7.com**.

The Conference costs are all inclusive (conference cocktails and taxes). Overseas: USD 250 for overseas members. USD 350 for overseas non-members. Indian members INR 9,750 and Indian non-members INR 10,350.

Full details of the speaker programme are as follows:

SESSION 1

08.30 – 09.30
Registration & Coffee
0930 – 0945
Welcome Address
Milind Tambe,
Regional Director IIMS
Mike Schwarz, IIMS
Chief Executive Officer
09.45 – 10.20
Futuristic Ship Design and the implication on Surveying by Offing Marine & Offshore Consultants
10.20 – 11.00
Autonomous Ships – An Underwriter's perspective
11.00 – 11.20 Coffee Break
11.20 – 12.00
Technology to the aid of Marine Surveyors by Capt. Ruchin Dayal, EDot Solutions
12.00 – 12.30
Cargo Claims – Today & Tomorrow! by Capt. Amol Deshmukh
12.30 – 13.00
Ballast Water Management – The future is now here! by Vedam Ship Design & Consultancy
13.00 – 14.00
Networking
Lunch

SESSION 2

14.00 – 14.40
Simulation & Marine Surveying! An interactive session with the use of a Simulator by BMT Consultants
14.40 – 15.20
Surveyor Education – Raising the bar! by Mike Schwarz, Chief Executive Officer IIMS
15.20 – 15 40 Coffee Break
14.40 – 16.00
Innovation in Testing & Analysis – speaker to be confirmed
16.00 – 16.20 The outlook of P&I Surveying. Where we are & What's Next! by Capt. Hari Subramaniam
16.20 – 16.40
Procedure for empanelment as an IRDA Surveyor by Mr. Mukesh Gautama, Wilson Surveyors
16.40 – 17.00
Human Values & Personal Discipline in Marine Surveying by Mar Tech Surveyors
17.00 – 21.00
Awards Presentation, followed by Cocktails andd Snacks @ The Pool Side

A BIG THANK YOU FROM THE IIMS MUDDY RUDDERS

The girls from IIMS head office raised over £1,000 for Cancer Research following their muddy challenge undertaken during July as the photo shows! They would like to thank those IIMS members who sent messages of support and also to those who generously donated to this cause.

THE FIRST EVER IIMS VIDEO CONFERENCING SEMINAR TAKES PLACE

Having successfully tested the Zoom video conferencing platform, yacht and small craft surveyors from around the world were invited to join the first IIMS online training course in Report Writing, which was fully interactive. The course was run by John Kilhams (who delivers the regular face to face programme) on Monday 12 September and attracted nearly 20 participants. He was assisted by Paul Homer who joined remotely. Commencing at 08.00 UK time, the seminar ran for nearly three and a half hours. It was pleasing to see members online from Canada and Grenada in the west, for whom this was a night time session.

The seminar was charged out at £50 and 3 CPD points were awarded for online attendance. The Report Writing seminar was recorded and those who attended will receive a copy of the video, plus copies of the two powerpoint presentations and a couple of sample reports.

First to formally feedback after the seminar was Uday Moorthi, who said, "I must say it was a successful pilot venture and very well coordinated. The re-cap of the main report writing points were an eye opener and added to my learning curve. Thanks for the opportunity. Lovely effort."

Speaking about the seminar, Mike Schwarz commented, "This is excellent technology and will give us the scope to reach out to members all over the world as we develop a plan of online training seminars. Watch out for news as we build and launch a plan for 2017, which you will be invited to participate in."

IIMS would like to pass on their thanks to John and Paul for delivering a successful first online seminar.

SMALL CRAFT WORKING GROUP TRAINING DAYS

There are two remaining small craft training opportunities to participate in this autumn being organised by IIMS.

First up is the Small Craft Working Group 'Super' training day. The venue is the Horizon Suite, Action Stations, 19 College Road Portsmouth Historic Dockyard, Portsmouth PO1 3LJ. There is ample paid car parking within a few minutes' walk of the venue. Action Stations, set within the Portsmouth Historic Dockyard, a most iconic venue for what promises to be an excellent training day.

Thanks to Matrix Insurance Services Ltd and Cygnus Instruments Ltd for their kind sponsorship of the event.

The programme in full:
08.45 Registration and coffee
09.30 Welcome from John Excell followed by Mike Schwarz
10.00 Susan Stockwell, Nereus Alarms: Awareness of Carbon Monoxide, its causes and the dangers
11.15 Coffee break
11.30 Nic Fieldhouse: Social media basics for surveyors
12.15 Karen Brain: Mediation and the surveyor
13.00 Lunch
14.00 Cygnus Instruments: Surface thickness gauges
14.40 Jim Vintner: Delivery of a product and/or service
15.40 Phil Duffy: Preparing a valuation report
16.30 Close

The cost, to include lunch, is £100 (no VAT) for IIMS members, or £110 (no VAT) for non members.

The second opportunity is the Small Craft Working Group Scotland training event that is taking place over two days on 14 and 15 November. The venue, agenda and cost are still to be announced. To reserve your place at either training event please email Tania Bernice at **ca@iims.org.uk** or call her on +44 (0) 23 9238 5223.

IIMS Certifying Authority coding surveyors are reminded that there is a CA Training Day scheduled to take place on 31 October. Further details to follow.

IMCA ANNOUNCES MAJOR CHANGES TO ITS COMMON MARINE INSPECTION DOCUMENT (CMID) SCHEME

IIMS subsidiary, Marine Surveying Academy Ltd, manages and runs the CMID accreditation scheme for inspectors on behalf of IMCA. Recent news released by IMCA represents the biggest shake up in the 17 year history of the scheme.

IMCA has provided the IMCA M 149 – Common Marine Inspection Document – for 17 years and it has seen a number of interactive changes over this period and has also seen the introduction of IMCA M 189 – Marine inspection for small workboats (common marine inspection document for small workboats). Since 2009, when the electronic CMID (eCMID) database was introduced, there have been calls from the industry to increase the integrity of the common marine inspection document (CMID) system.

So, IMCA has announced it will only recognise formal reports conducted using the eCMID database. This means that paper reports not uploaded into the database will no longer be considered by IMCA to be 'authorised' CMIDs. Secondly, only validated AVIs will be able to use the eCMID database and thereby conduct these authorised IMCA CMID and MISW inspections. This move to enabling only accredited CMID inspectors to use the eCMID database will become effective from 1 January 2018.

Marine Surveying Academy has already noticed increased interest in the scheme (currently standing at 200 accredited AVIs after its first year of operation). As a consequence, it has recruited additional and assessors and trainers as things are expected to become even busier in 2017 as the deadline for accreditation looms.

The full story can be read here: http://www.iims.org.uk/biggest-shake-imcas-cmid-inspectors-17-year-history-scheme-announced

Since launching this accreditation programme on behalf of IMCA mid 2015, over 200 CMID auditors and inspectors in the offshore sector have been approved and accredited.

NEXT REGISTERED MARINE COATINGS INSPECTORS (RMCI) COURSE LINED UP FOR VIAREGGIO

Over the past two years, nearly 70 coatings inspectors and surveyors have achieved the RMCI qualification since its launch. The RMCI qualification, supported by SYBass and ICOMIA and aimed at those involved in inspecting superyacht coatings, has proved to be popular and is gaining credence within the industry and around the yards.

The lead course tutor is IIMS member, Rory Marshall.

The next course is planned to take place in Viareggio from 10 to 14 October. The course includes a formal examination on the fifth day. For details see: **rmciinspectors.com**

IIMS MEMBERSHIP TRAVEL SERVICE SCHEME

Norad Travel Group runs the Membership Travel Service scheme for IIMS members. The scheme offers a range of exclusive benefits for IIMS members only.

The Norad team of Marine Specialists are based at their Liss (UK) European Headquarters. They operate alongside their Global partners in Greece, The Philippines, India, UK, Ukraine, South Africa and Australia. Norad Travel Management holds marine fare contracts with all major airlines.

Why not make contact for a quotation for your travel requirements?

Norad's UK office can take your telephone calls on **+44 (0) 1730 894700** from 08.30-18.00 (GMT) Monday to Friday, or any time by email on: **marine@noradtravel.biz** or see the web site: **iims.org.uk/membership/membership-benefits/iims-membership-travel-service**

All photos by Kirk Schwarz - www.kirkschwarz.co.uk

The International Institute of Marine Surveying
Annual General Meeting 2016

The 2016 Annual General Meeting of the International Institute of Marine Surveying took place at Herringham Hall, Regent's University on Wednesday 31 August at 14.45. The meeting was called to order and opened by President, Capt Bertrand Apperry.

Those who attended the AGM were:

President:
Capt Bertrand Apperry
Deputy President:
Mr Adam Brancher
Deputy Vice President:
Capt Zarir Irani

Members:
Capt Sergey Batmanov
Mr Ian Biles
Mr Geoff Bowker
Capt Allen Brink
Mr Alan Broomfield
Mr George Brown
Engineer Javier Bru
Mr Graham Burt
Mr Andrea Carlevaris
Eur Ing Jeffrey Casciani-Wood
Capt Ruchin Dayal
Capt Philip Duffy
Mr John Excell
Mr Nic Fieldhouse
Capt Nigel Hartley
Capt Syed Humail
Mr John Heath
Mr Emeraku Ijioma
Capt Andrew Korek
Mr Paul Lockhart
Mr Harry Martinez
Mr Brian Keating
Capt Chris Kelly
Capt Khalil Khan
Capt Peter King
Mr John Kilhams
Mr Uday Moorthi
Capt John Noble
Mr Lionnel Parant
Mr Paul Homer
Mr Joao Peixoto
Capt Hugh Raynor
Mr James Renn
Mr William Rosie
Mrs Ursula Smith
Mr Milind Tambe
Capt Barry Thompson
Mr Ricky Tropman
Mr Luc Verley
Mr Robert Vjuzaninas
Mr Geoff Waddington
Mr James Walker
Mr Lee Warltier

Acceptance of the minutes of the 2015 AGM were proposed by Capt Khalil Khan and seconded by Capt Syed Humail.

The President gave his verbal report to those in attendance, his final one before stepping down. He said:

"It has given me great pleasure to have been your President for the last two years. It is special that my presidency has coincided with the Institute's twenty fifth anniversary in 2016. Since our formation in 1991, the organisation has grown steadily and we have reached this significant milestone in good shape.

I have been fortunate to have seen the process of change at first hand since Mike was appointed as CEO. When I became President, the Institute faced financial uncertainty. But now as I step down two years later, things are greatly improved. And IIMS is becoming an increasingly important and respected organisation in the maritime sector because of its activities and innovations.

So as I prepare to stand down and hand over to Adam Brancher shortly, it is time to reflect a little. We have more full members now than at any other time in the Institute's history; and membership is growing strongly worldwide. New branches have opened in Canada and Nigeria this year. Our new professional qualifications in marine surveying are proving popular. And the work that our Certifying Authority does is of a far higher standard than it was.

Our communication to members continues to develop through the printed word and by social media channels. Each quarter, The Report Magazine carries excellent articles, features and news written for you.

Tomorrow you will hear why enhancing surveyor standards matter. Also there is an outline plan for a marine surveying apprenticeship scheme. As a forward thinking, international organisation, these are areas we must care deeply about and be involved with to develop the future of our industry.

Since I have been President, the Marine Surveying Academy was born too. Already this wholly owned subsidiary of the IIMS is making excellent progress. In particular the CMID accreditation scheme we are running for IMCA is proving to be robust and successful. Already over 200 inspectors have come forward for accreditation. This structured programme of objectively assessing those who are competent to audit complex vessels in the offshore sector is already making a significant difference to safety in our industry.

It has been an honour and a privilege to serve as your President. Thank you."

IIMS Chief Executive Officer, Mike Schwarz gave a detailed verbal overview of the activities of head office. He thanked the management board, regional directors and head office team for their ongoing support and work.

The Directors who were present each gave a short verbal update on their specific areas. John Excell, Chairman of Yacht & Small Craft Surveying, talked in particular about the success of this year's training events held in the UK and Europe.

Fraser Noble, Chairman of the Certifying Authority, gave an overview of the IIMS Certifying Authority's current work and mentioned how pleased he was to welcome half a dozen new coding surveyors this year. Capt John Noble, Chairman of Administration and the Education Committee, gave a succinct report on the head office administration and education functions. Capt Chris Kelly, Chairman of the Professional Assessment Committee, told members about the growing membership trend with new applications coming from all parts of the world. The following Regional Directors also gave verbal reports, Capt Andrew Korek (Canada), Capt Khalil Khan (Pakistan), Capt Barry Thompson (New Zealand), Capt Zarir Irani (UAE), Mr Adam Brancher (Treasurer Australia), Mr Milind Tambe (India) and Mr Emeraku Ijioma (Chairman Nigeria).

Following the reports, the IIMS Chief Executive Officer invited President Capt Bertrand Apperry to formally stand down and to pass the baton to the new President, Mr Adam Brancher in a short ceremony. In his first duty as IIMS President, Adam praised Bertrand for his efforts over the past two years and in particular for being a stabilising force during a difficult time for the Institute. He also presented the now immediate past President with a small medal.

The meeting moved on to consider the four matters which required voting by members at the AGM.

Item 1. It was proposed that the current Management Board be elected en-bloc.
Proposed by Mr Emeraku Ijioma
Seconded by Capt Andrew Korek
In favour: 27 plus 3 proxy votes
Against: 1
Abstentions: 0

Item 2. Geoffrey (Geoff) Waddington's name had been put forward as part of the presidency succession planning. It was proposed that Geoff Waddington be approved as the new Deputy Vice President.
Proposed by Mr Paul Homer
Seconded by Capt Allen Brink
In favour: 45 plus 3 proxy votes
Against: 0
Abstentions: 0

Item 3. The proposed revised fee structure for 2017 membership was presented and discussed. As part of recognising that there are currently challenges for members in certain parts of the world, it was proposed to use the area system of membership to determine and differentiate the percentage increase. In effect this means a 3% increase for Area 1, a 2% increase for Area 2 and a 1% increase for Area 3. Fellowships were proposed to increase by 3% no matter which area.

Proposed by Capt Phil Duffy
Seconded by Mr Paul Lockhart
In favour: 38 plus 2 proxy votes
Against: 2 plus 1 proxy vote
Abstentions: 1

Item 4. Following a review of the Institute's members' disciplinary rules and procedures, a recommendation and proposal had been put before members. The disciplinary rules have not been reassessed for a number of years. It was felt that the management board had insufficient ability to impose sanctions should the need arise following or as part of the disciplinary procedures. The proposal stipulated a number of new sanctions to be included in the revised document.
Proposed by Capt Andrew Korek
Seconded by Jeffrey Casciani-Wood
In favour: 44 plus 3 proxy votes
Against: 0
Abstentions: 0

The presentation of Honorary membership certificates to Capt William MacDonald and Mr Uday Moorthi was delayed until the Gala Dinner later that same evening.

All photos by Kirk Schwarz - www.kirkschwarz.co.uk

IIMS Silver Jubilee Awards for Excellence

The process to recognise excellence in various areas of marine surveying as part of the Institute's celebratory year started back in January when details of the categories and nomination process were unveiled.

The Silver Jubilee Awards for Excellence have been filmed and released on video through the IIMS web site and YouTube channel: www.youtube.com/c/MarineSurveyingIIMS

Setting out to uncover excellence for the first time in any industry is a challenge and so it proved with marine surveying. It took a while for members to become engaged with the process, but the end result was some excellent nominations and finalists in the nine categories.

The judges had a fun and challenging afternoon working through the nominations and whittling them down to a list of finalists in each category before selecting the winners. Some categories were very keenly contested indeed and required a fair degree of discussion before the finalist shortlists and eventual winners were agreed.

The judging panel comprised:

Mike Schwarz, *Chief Executive Officer, IIMS - Chairman*
Bridget Hogan, *Director of Publishing & Marketing, Nautical Institute*
Niamh Cullen, *Proprietor, Hoot Marketing*
Fraser Noble *FIIMS, IIMS Certifying Authority Chairman*
Lee Warltier *MIIMS*
Jeremy Knight, *AsocIIMS, CEO, Clipper Ventures plc*
Capt Andrew Korek *MIIMS, Regional Director IIMS Canada Branch*

The Silver Jubilee Awards for Excellence were presented as part of the IIMS 25th Anniversary on 31 August in Herringham Hall, Regent's University, London by Sir Alan Massey, Chief Executive Officer of the UK Maritime & Coastguard Agency. Sir Alan also gave a short key note address to the assembled audience at the end of the awards ceremony. In his speech, Sir Alan praised the work of the IIMS and spoke warmly about our organisation.

The finalists and winners of the nine awards were as follows:

Innovation Award
sponsored by Matrix Insurance Services Ltd and Chaucer Syndicates Ltd

The concept behind this award was simple. IIMS wanted to recognise someone or an organisation, not necessarily a member of the Institute, who had developed an innovative product or service in the marine sector.

Joint Winners: **Sky-Futures Ltd and Ocean Signal Ltd**

James Harrison, Co-Founder of Sky-Futures said, "We are thrilled to receive this award. It is a token of appreciation for the hard work of the whole team."

Nomination extract: "Sky-Futures is an organisation that is at the 'bleeding edge of technology'. They are pioneers in their field and seek to provide safe, cost effective and experienced Unmanned Aerial Vehicle (UAV) Oil and Gas inspection services: Offshore and onshore inspections; HD video, still and thermal imagery; Technical inspection reports; Experienced Remote Pilots. Sky-Futures is heavily immersed in developing drone technology, which has the potential to transform the surveying and inspection business beyond recognition leading to smarter and safer working."

Nomination extract: "Ocean Signal recently introduced the world's smallest personal locating Automatic Identification System (AIS) Man OverBoard device. The MOB1 is compatible with even the most compact inflatable lifejackets. The device is intended to be installed within the life-jacket and will activate automatically on inflation, sending the first alert within 15 seconds. The panel felt this was an innovative product that will surely save lives.

Finalist
MRS Training & Rescue - Highly Commended

Rising Star Award
sponsored by Sterling Global Marine Ltd

The judges were looking for someone who is still learning his/her craft or those who are still very much developing their surveying careers and businesses.

Winner: **Lee Warltier**

Lee Warltier said, "I am totally surprised by this nomination and award. I did not expect to receive it. Bring on the future!"

Nomination extract: "Based on the south coast of England, but engaged in projects all over the world, Lee Warltier was nominated for the progress he has made over the past year since establishing his own business. He started with just one other surveyor and the business has quickly established itself to the extent that they now have four surveyors. Lee has contacts worldwide and this means that he and his colleagues spend little time at home and are constantly travelling. The order books are strong and the business goes from strength to strength. After just eighteen months this is an outstanding achievement."

Finalists:
Capt Delzin Irani
Paul Lockhart

Customer Focus Award

The judging panel were looking for examples where someone, or an organisation, routinely puts customer service first without a second thought.

Winner: **Chris Moody**

Chris Moody said, "This is a very proud and humble moment. I am truly honoured to receive this prestigious award. This will keep me focussed on the goal after a difficult year."

Nomination extract. "He has been increasingly helpful, providing guidance and support whenever requested and offering practical, workable solutions to the challenges he was presented with. His willingness and enthusiasm to offer more than the service of just carrying out coding surveys alone has been marked – in addition, he offers helpful ideas and suggestions in abundance, all of them based on a wealth of knowledge and experience as a surveyor. In terms of the all-round level of customer service provided, Chris goes above and beyond all expectations."

Finalists:
Uday Moorthi
Capt Zarir Irani

Best Web Site Award

In this hotly contested category, the judges were looking not just for sites that are aesthetically pleasing. They also considered the depth and relevance of content, site functionality and how well each one was optimised for search engines.

Winner: **Chris Olsen**

Chris Olsen said, "Very big thanks for the award. Totally surprising."

Nomination extract: "The home page slider attracts the eye and boasts some decent quality images that show the sort of vessels Chris is all about. His telephone numbers are clearly displayed in the top right hand corner of the site. The case studies are helpful to a site visitor. Chris is not shy to talk about his capabilities in enough detail on the home page. The panel on the right of the home page entitled 'What's involved in a boat survey?' is most helpful for the uninitiated."

Finalists
Andrea Carlevaris
Gary Miller

Most Effective Use of Social Media Award

The panel was keen to see examples of how the use of social media is being routinely utilised to assist an organisation's business and to disseminate knowledge.

Winner: **Nic Fieldhouse**

Nic Fieldhouse said, "Thank you very much to the people who nominated me and all the other people who are prepared to give social media a go and to remember to give something before you receive it."

Nomination extract: "Nic set up and runs the yacht and small craft LinkedIn forum which has nearly 1,500 members see. https://www.linkedin.com/groups/4087306/profile. It is a forum by application on LinkedIn for surveyors and others interested in surveying. In addition he is very active with his own website 'blogging' regularly about his surveys and what he does."

Finalists
Jacek Goszczynski
Steve Truss

Marine Surveying Project of the Year Award (Yacht & Small Craft)

The judges were keen to find an unusual project which completely endorsed the skills and experience of the attending surveyor.

Winner: **Mike Andrews**

Mike Andrews said, "I am really surprised to have won this award due to the incredible competition. Thank you."

Nomination extract: "The new owners of a prestigious classic ocean racing yacht contacted Mike because they suspected that the pre-purchase survey had failed to identify major structural problems. Subsequent inspections revealed that approximately 60% of the laid teak deck was detached from the plywood sub-deck. In many places, the sub-deck was rotten. Other major defects were discovered. Following presentation of his survey reports to the owners, they invited Mike to oversee the repairs as their independent project manager and this arrangement is nearing completion.

Finalist **Lee Warltier**

Marine Surveying Project of the Year Award (Commercial Shipping) sponsored by A.R.Brink & Associates

In this category, the panel sought to find a large scale project that boasted the 'wow' factor.

Winner: **Capt Andrew Korek**

Capt Andrew (Drew) Korek said, "Although totally unexpected, I am truly honoured to receive this prestigious award."

Nomination extract: "Drew was nominated for his attendance in capacity of the Marine Warranty Surveyor and for the successful completion of the heavy lift project while acting on behalf of Liberty International Underwriters and Sandvik Canada Inc. who chartered a heavy lift vessel m/v "Happy Star" from the BigLift Shipping BV to transport two complete shiploaders from China to Canada. Discharging and assembly operations at the destination point were carried out in extreme arctic weather conditions with temperatures plummeting to -27 degrees Celsius plus windchill factor. The project is now the subject of a Mighty Ships programme."

Finalists
Capt Zarir Irani
Peter Broad

Outstanding Contribution to the Commercial Shipping Marine Surveying Industry Award sponsored by Henderson International Asia Pacific Group

In this category, the panel sought evidence of an individual whose exemplary surveying career was taken for granted, but who also had gone beyond his remit and made a significant contribution to the industry as well as to IIMS.

Winner: **Capt Barry Thompson**

Capt Barry Thompson said, "The Institute and the surveying profession are close to my heart.

Thank you very much for the recognition. I am most grateful and feel very humble."

Nomination extract: "Barry has been a stalwart member of our Institute since the early inception of the IIMS over many years. Despite being in one of the remotest outposts of the IIMS empire, Barry has continuously supported the organisation and was the founder and chairman of our first overseas branch in New Zealand. Barry gained immense respect with the New Zealand Government maritime department. Through Barry's sage advices he became an adviser to the department enabling them to draft national standards and protocols. He is a Master Mariner, consummate diplomat, author of various books and other journals and manuals and various technical papers."

Finalists
Capt Khalil Khan - Highly Commended
Capt Syed Khalid Humail - Highly Commended

Outstanding Contribution to the Yacht & Small Craft Marine Surveying Industry Award

Award sponsored by Galleon Marine Insurance Agency and Winter & Co

The judges were looking to find an outstanding individual who has not only enjoyed a successful career as a surveyor, but who also contributed by putting back into the Institute.

Joint Winners:
Paul Homer and Ian Nicolson

Paul Homer said, "I am honoured to receive this award. My aim has always been to raise the standards of small craft surveyors for the future and I hope to continue to do so."

Ian Nicolson said, "Very many thanks for my Award which my son Richard collected on my behalf in London. It's a great honour and so rare. Surveyors seldom get recognised."

Nomination extract Paul Homer: "Paul is one of those people - once seen, never forgotten. He is ebullient, friendly and if cut in half he would have IIMS written right through him like a stick of rock! He does not seek the limelight and although being outwardly noticeable he is actually quite a shy person. Paul has been a member, board member and Director of the Institute for many years. He has undertaken the role of Director of Standards and Discipline in a highly professional manner acting with fairness, diplomacy and sage comment. His professionalism should be emulated by all our members."

Nomination extract Ian Nicolson: "Now in his late 80s, Ian started his career as a surveyor 71 years ago. He remains active having recently come back from survey in Italy and still travels the world with work. Ian has had 25 books about ships and boats published, with three more contracted for, including 2 for IIMS. He is perhaps best known for his "BOAT DATA BOOK", now in its 7th edition. Ian once tried to work out how many surveys he had done, but stopped counting at 10,000.

Finalists
Fraser Noble - Highly Commended
John Excell - Highly Commended

Commenting immediately after the Award, IIMS Chief Executive officer, Mike Schwarz, said "Only once I saw the winners coming up to receive their awards from Sir Alan Massey, some in a highly emotional state, did I realise that this recognition by their peers really meant something to them. It was humbling to be part of this experience and to share in their moment of glory. My hearty congratulations to all those nominated, finalists and winners."

Mike Andrews (right) congratulated by Mike Schwarz

IIMS Silver Jubilee finalists and award winners

Regent's University

IIMS celebrates its 25th Anniversary in style

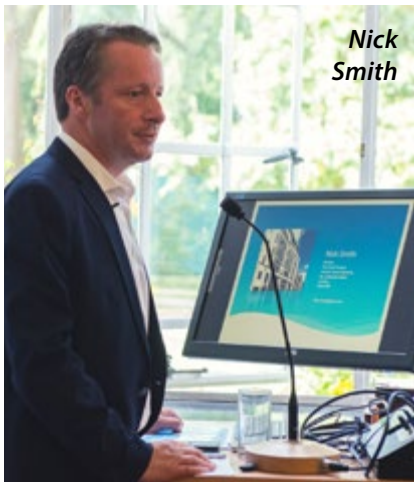
Members of the IIMS came from far and wide to celebrate the Institute's 25th anniversary and silver jubilee in London on 31 August and 1 September. Three iconic venues across the city had been chosen to mark this special occasion in what turned out to be two action packed days. Regent's University, set in the heart of one of the jewels of London, Regent's Park, is a splendid building dating from the 1920s. The Gala Dinner was held in the historic Museum of London Docklands, dating back to the early 1800s. And the second day, comprising ten presentations, took place in the splendour and serenity of The Old Library, Lloyd's of London. Unveiled in the coming pages, you will see the event depicted through a series of photographs taken over the two days.


View at night from the Museum of London Docklands

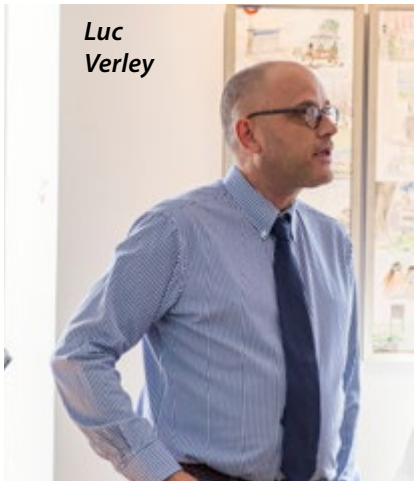

Entrence to Lloyd's of London

Over 100 photos from the conference can be viewed in the 'Complete IIMS 25th Anniversary Conference 2016 Photo Album': www.iims.org.uk/media/galleries

The first day opened at Regent's University, the centrepiece of which was the delightful Herringham Hall. Delegates had five technical workshops to choose from. Presentations took place in two elegant spaces within Regent's University, namely the Tuke Common Room and the Knapp Gallery. The range and depth of presentations was far reaching and from feedback received, all were of great interest.


Nick Smith

Nick Smith from Charles Taylor Adjusting covered the fascinating subject of commonly breached warranties for small craft and their implications for insurers and insured. IIMS member, Luc Verley (based in Singapore) talked passionately about dredging technology and gave an insight into his audience about the perhaps little known world of dredging contractors, projects and the equipment itself.


Luc Verley

John Reynolds

The next two presentations of the morning could best be described as 'chalk and cheese'. Representing FLIR UK, the leading provider of thermal imaging equipment, John Reynolds gave an overview of the products currently available to surveyors and their potential uses. He brought a range of equipment for surveyors to trial and play with. Whilst over in the Knapp Gallery, seasoned veteran, Sam Ignarski, co-founder of FOB Network, a networking platform for the maritime classes, and editor of Bow Wave and co-publisher of The Maritime Advocate, extolled the virtues of social media to an eager audience.


Sam Ignarski

Carol Powell, one of the foremost experts in corrosion in the UK, brought the morning's proceedings to a conclusion. In her presentation to a sizeable audience, Carol spoke eloquently and knowledgeably about marine alloys, their corrosion behaviour and how to avoid it. Despite being an age old problem, there is clearly always new thinking and evidence to review on this most fundamental of topics that a surveyor just has to understand.

IIMS is most grateful to the five speakers who came to present their technical workshops. Videos were made of Nick, John and Carol's presentations and are available to IIMS members via the web site or YouTube channel.


Carol Powell

During the morning, delegates were free to mingle around the small exhibition in the Herringham Hall and to network with other members.

Following a lovely, stand up buffet luncheon, the IIMS Silver Jubilee Awards for Excellence in Marine Surveying swung into action and were presented in a packed Herringham Hall by Sir Alan Massey, Chief Executive Officer of the UK Maritime & Coastguard Agency. Full details, a report and photos of the Awards can be found from pages 19 to 23.

After luncheon and a quick room set up change, the Institute held its AGM, which featured the transfer of the Presidency from Capt Bertrand Apperry to Mr Adam Brancher. Full details and photos of the AGM are on pages 16 to 18.

The Muscavado Hall at the Museum of London Docklands

All photos by Kirk Schwarz - www.kirkschwarz.co.uk

IIMS Gala Dinner

Surprises aplenty had been promised for the 25th Anniversary Gala Dinner and guests were not disappointed! Indeed the first surprise guests encountered were two fearsome looking pirates on stilts waiting by the front door of the venue to meet and greet. And what a menacing pair they made too.

Guests assembled from 18.30 in the shadow of the imposing Canary Wharf skyscraper in London's now fully transformed and prosperous east end. After time to take in the museum's exhibits, guests headed for the 'Sailor Town' area, a space which has been used to recreate an old Victorian quayside scene, for a special drinks reception, wandering quietly through the dimly lit and atmospheric streets with their drinks.

The Museum of London Docklands was originally No. 1 Warehouse of the West India Docks. Opened in 1802, the West India Docks were London's first enclosed dock system, built away from the open river on the Isle of Dogs.

The surprise pirates with Sam Owen, Elle Hardham, Elly Bryant and Tania Bernice

Mike Schwarz with Baroness Joy von Penzer (left) and Johanne Penzer (right)


Adam Brancher with his mother, Lesley Peat


Uday Moorthi


Fraser Noble

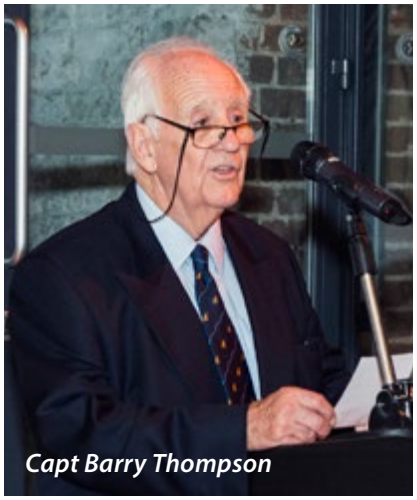

John and Deborah Kilhams


Paul and Sue Homer with her mum Betty Symonds


Nigel Hartley, Julia Northover, Carole Bryer and Alan Coleman


Tina and Harry Martinez

Following the drinks reception, guests headed downstairs to the imposing, high ceilinged Muscavado Hall for dinner. Capt Barry Thompson read a specially selected poem of remembrance entitled 'Lost at Sea' by Lillian Harris. Immediate Past President, Capt Bertrand Apperry, delivered Grace; and new President, Mr Adam Brancher, proposed the Loyal Toast to Her Majesty the Queen.



Capt Barry Thompson

Capt Bertrand Apperry

Head chef Joe and his team of talented chefs had been tasked with creating a unique international buffet to reflect the nature of the global nature of IIMS, befitting of this special occasion. He and his team did not disappoint, delighting guests by preparing a lavish selection of cuisine with the countries of India, China, Italy, America and Australia as their primary sources of inspiration.

The special 25th Anniversary cake

A special 25th Anniversary cake in the shape of a boat had been specially commissioned and it fell to Capt Bill (William MacDonald), the Institute's founder and first President to perform cake cutting duties, which he fulfilled with some style too. During dinner, guests had been richly entertained by Ivo the caricaturist, who amazed people with his fast and accurate sketching abilities; and by close up magician Keven Starl, whose skill at deceiving the eye was quite simply astonishing. Some of his magic and trickery simply defied logic and belief.


Mike Schwarz

Three speakers (and a brief, frivolous comedy routine) brought the evening to a close.

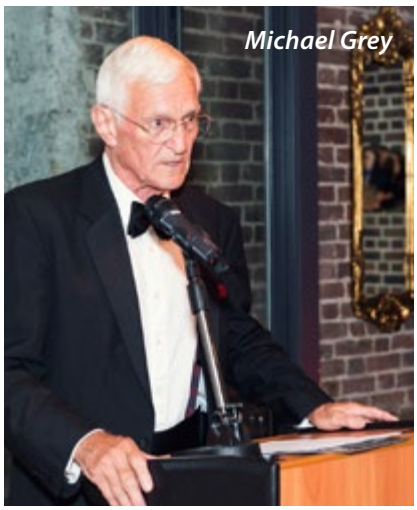
First to speak, Mike Schwarz, IIMS CEO, praised the management board, regional directors and head office team. He made presentations to Vicky Lawrence, Financial Controller, for 10 years' plus service. He also recognised the work of Membership Secretary, Jan Cox, for whom this conference would be her last with retirement early in the New Year looming with a further presentation. Mike acknowledged the eight past Presidents who were present at the event. His final presentation was to Capt Bill (William MacDonald), the founder of the IIMS. Recognising his foresightedness and ambition all those years ago, Mike presented Capt Bill with a specially engraved glass crystal.


Presentation to Vicky Lawrence


Presentation to Jan Cox


Presentation to Capt Bill MacDonald

Mr Michael Grey was next to speak. He continued in a similar vein challenging the audience to think about where the next generation of surveyors might come from and how they are to be trained to become competent.


Michael Grey

There followed a highly unusual interlude following Michael's speech. Mike Schwarz and Peter Hancock took to the stage to perform a specially scripted routine to remember the 'Two Ronnies' duo, a famous British comedy double act. Back in 1991 when IIMS was formed, Ronnie Corbett and Ronnie Barker (The Two Ronnies) would regularly command television audiences of 20 million plus viewers on a Saturday night and at Christmas with their unique style and brand of humour. As a mark of respect to these two greats, Mike and Peter delivered the 'spoof' news headlines in the manner of the Two Ronnies and amused the audience.

And so it fell to Peter Hancock to bring the evening and Gala Dinner to a close. Bravely returning by popular demand, Peter used his skills to deliver twenty minutes of wit.

A collection was made for President Adam Brancher's chosen charity, which this year was MIND, the mental health charity. A sum of £500.65 was raised and thanks are given to those who generously donated to this worthy cause.


Peter Hancock


Peter Hancock and Mike Schwarz converse as the 'Two Ronnies' duo.

Day two at the Old Library, Lloyd's of London

Special thanks were given to the two main sponsors of the day, Capt Zarir Irani, Constellation Marine Services (Platinum sponsor) and Allen Brink, A R Brink & Associates.

Delegates were on parade bright and early to hear the new President, Mr Adam Brancher, give his first address to Conference. He said how honoured he was to have taken over the reigns as President of IIMS.

He was followed to the stage by Mike Schwarz who spoke about developments at IIMS over the past few months before peering into his crystal ball to come up with some ideas of what the Institute might look like by 2041 in another twenty five years' time.


John Guy

The next presenter, John Guy, a veteran of the very first IIMS Conference a quarter of a century ago, talked about crisis management, a subject dear to his heart. He made the point that an event is only a crisis if the media deems it so, saying that killing seafarers can often pass without comment, but harming beautiful beaches with oil spills, or killing thousands of penguins is determined to be more a far more heinous crime by the media.

IIMS was delighted that Philip Wake OBE, Chief Executive of the Nautical Institute (our friends and media partners for the event) had accepted an invitation to speak. Philip tackled the challenging subject of Maritime professionals or automatons? Brave new world or not? His view was very much one that whilst autonomous vessels are coming, it may be longer than anticipated before they make a big impact.

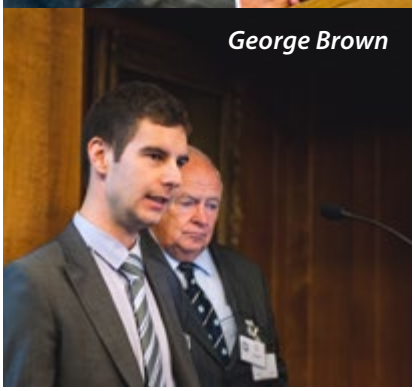
Capt Peter King presented his vision of the next generation of marine surveyors in which he argued the case for an apprenticeship scheme. His colleague, George Brown, a young and upcoming surveyor, joined him on stage to say a few words about his experience so far, incorporating something akin to an apprenticeship route into the industry.

Future challenges facing marine insurers was the topic tackled by Chris Curran. After a look back in time to the background of the marine insurance industry, he turned his attention to what might lie ahead. Once again the subject of autonomous vessels was mentioned and the potential ramifications for underwriters.

James Harrison, co-founder of Sky-Futures Ltd, who had picked up the Innovation Award the previous day, gave a far reaching and insightful presentation, largely focusing on the impact that drone technology is having on the marine industry. He also won the prize for the most innovative presentation title of the day - Bringing the assets to the experts – meshing visual, telemetry, 3D and other complex data types to enable advanced asset assessment from your desk.

Philip Wake


Capt Peter King


George Brown


Chris Curran


James Harrison


Capt Andrew Korek


Nippin Anand


Dr Alexandros Ntovas

The case study of the m/v Happy Star Big Lift project was presented by Capt Andrew Korek. This presentation had been held over from last year's conference due to Drew's ill health. He spoke about the many challenges he faced, some of which all but prevented the project happening. Mighty Ships have made a television programme about the project, but as Drew was quick to point out they chose to show viewers the more palatable bits!

Safety management systems continue to be on the industry's lips day in and day out. In this informative presentation, entitled Boxing and Dancing: The Broken Promises of Safety Management Systems in Global Shipping, Nippin Anand from DNV GL spoke openly of his concerns about why safety is often overlooked and why lessons are seemingly not being learnt.

Dr Alexandros Ntovas delivered the final presentation of the day and gave an in interesting overview of the impact of autonomous vessels calling on his experience as an oceanic policy advisor and with a knowledge of the law of the seas. His presentation was entitled unmanned commercial vessels: What may lay ahead for marine surveyors in the context of classification.

The second day of Conference concluded with a panel question and answer session. Adam Brancher, Capt Zarir Irani, John Excell and Phil Duffy joined Mike Schwarz on stage, as he posed some questions about the Conference. The audience was then invited to ask questions and duly did so.

15 presentations from both days have been released as videos via the Institute's YouTube channel. They can be found at: www.youtube.com/c/MarineSurveyingIIMS

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Marine surveyors helping to save lives at sea...

BY **ANDREW SQUIBB**

In May 2016, The IIMS Small Craft Working Group joined the Royal National Lifeboat Institution's (RNLI) annual surveyor training conference. Following a detailed tour around the RNLI facility in Poole, the combined group of approaching 50 surveyors listened to a series of presentations and had the chance to network and share ideas amongst themselves. Both RNLI and IIMS felt the occasion was a great success and expressed a desire for the two organisations to work more closely together. As a direct result of that recent gathering, IIMS invited RNLI to write an article. Andrew Squibb MEng AMRINA AMIMarEST, Technical Surveyor RNLI picks up the story.

"It's vital that the RNLI provides its brave volunteer crews with reliable, safe boats and equipment."

About The Royal National Lifeboat Institution (RNLI)

The RNLI is the charity that saves lives at sea in the UK. It provides a 24-hour search and rescue service to 100 nautical miles out from the coast of the UK and Republic of Ireland, along with a lifeguard service on over 220 UK and Channel Island beaches. The charity also operates 4 lifeboat stations on the River Thames.

There are 237 RNLI lifeboat stations operating 349 lifeboats; 128 all-weather lifeboats (ALBs) and 221 inshore lifeboats (ILBs). There are a further 108 lifeboats in the relief fleet.

In 2015 the RNLI's lifeboat crews undertook 8,228 launches (an average of 23 per day), rescued 7,973 people and saved 348 lives, while the charity's lifeguards responded to 15,714 incidents, helping 18,181 people and saving 94 lives.

RNLI lifeboat crew members are on-call 24/7, 365 days a year. Most have a full-time day job, but they carry a pager and, when it goes off, they rush to the lifeboat station and launch the lifeboat to rescue those in danger.

It's vital that the RNLI provides its brave volunteer crews with reliable, safe boats and equipment. The RNLI's team of marine surveyors, or Technical Surveyors as they are known, play a big part in achieving this.

RNLI Technical Surveyors have two core roles:

- To survey existing ALBs and launching equipment, to assess any maintenance or repair work required
- To lead new build, refit and major repair projects to ensure they are delivered to the right quality, deadline and cost.

Who are the RNLI Technical Surveyors?

The RNLI has a team of 13 Technical Surveyors based across the UK and Republic of Ireland, working to ensure the safety of its volunteers and those they rescue.

The RNLI surveyor's job is demanding but rewarding, involving frequent travel and working closely with RNLI coast staff, crews and contractors throughout the UK and Republic of Ireland. In total, the surveyors oversee around 300 projects per year.

The surveying team works remotely, co-ordinated from the RNLI Headquarters in Poole. Work is allocated to particular surveyors based both on its geographical location and on each surveyor's specialist experience and knowledge.

The RNLI's surveyors have a wide range of maritime and engineering backgrounds, creating a strong team with diverse expertise.

Photos by RNLI

Each surveyor has a specialisation of Hull, Machinery or Electronics, with individuals having further specialist knowledge of particular materials, structures or techniques.

New RNLI surveyors complete a formal distance-learning diploma in marine surveying, building on their existing experience and ensuring their knowledge of survey methods and industry standards is up to date. New starters are also paired up with experienced surveyors to gain in-depth knowledge of RNLI boats, processes and equipment. Formal and informal training continues throughout a surveyor's career, both to improve specialist knowledge for particular projects and to keep abreast of technological and other developments.

Technical Surveyors work on every class of ALB (Severn, Trent, Tamar, Shannon, Mersey and Tyne) and every type of mobile launch and recovery equipment. This includes over 30 types of powered and unpowered vehicles, ranging from the Shannon Launch & Recovery System to Rescue Water Craft (RWC) launch trolleys. They also work on E-class lifeboats (used on the River Thames), hovercraft and RWCs. Specialist surveyors also oversee the programmes for ALB engine and electronics overhaul.

Survey work

ALB refit cycles have evolved over the last 15 years, moving away from traditional calendar-based maintenance towards Condition-Based Maintenance (CBM):

Before the introduction of CBM a refit would entail extensively stripping a boat and overhauling/repainting every part, regardless of condition. Modern non-destructive examination equipment and instant digital communication now make it viable to assess a boat's condition in advance and to tailor the work accordingly. However, the "Mark I eyeball" and the surveyor's skill and knowledge are still central to the process. The current CBM survey and refit intervals were established from Failure Mode, Effect & Criticality Analysis (FMECA - a formal method of identifying particular failure risks) by teams drawn from across the RNLI.

CBM surveys include the following:

- Lightship survey
- Structural inspection (for both structural and watertight integrity) – visual, tap testing, non-destructive examination in some cases (e.g. shearography)
- Paint/coating condition, against agreed standards
- Haul-out (if a scheduled haul-out coincides with survey dates)
- Sea trials
- Vibration analysis
- Vulkan coupling deflection
- Decibel level readings
- Thermal imaging electrical systems

"Technical Surveyors work on every class of ALB (Severn, Trent, Tamar, Shannon, Mersey and Tyne) and every type of mobile launch and recovery equipment."

Photos by RNLI

"Technical Surveyors also perform any other surveys required on ALBs and L&R equipment, for instance following damage."

- Speed trial: both engines & single engine running
- All systems tested & checked off using standard trials checklist

CBM surveys are usually performed at station, in co-operation with local coast staff and the station crew. They typically require two surveyors, hull and machinery, and take a full week including travel.

The surveyors record their findings on a standard spreadsheet, giving each item a condition rating and recommending any action needed. Following a 6-year CBM survey, the surveyors will also use their findings to write the specification for the next refit.

Each defect found is also recorded on the RNLI's database and remedial action agreed; many minor defects can be rectified locally, but equally some apparently minor repairs need more controlled conditions than can be achieved on station.

Refit cycles for launch and recovery (L&R) equipment vary depending on type. RNLI coastal staff carry out regular condition inspections of L&R plant, but in some instances surveyors are asked to assess the condition of in-service L&R vehicles. The surveyor will also perform a full condition inspection of components after a vehicle has been stripped down for refit.

Technical Surveyors also perform any other surveys required on ALBs and L&R equipment, for instance following damage. The surveyors write a report of every survey for planning staff at the RNLI HQ in Poole, including the details and urgency of any repairs or refurbishment required. This enables the work to be scheduled and arranged, including relief fleet movements if necessary.

Project management

Wherever possible, the RNLI's coast staff arrange maintenance and repairs on station or (for L&R vehicles etc.) at the local Regional Base. This minimises cost, off-service time and the need for relief fleet cover.

However, more major work requires specialist facilities; either the RNLI's own All-Weather Lifeboat Centre (ALC), or external contractors. Technical Surveyors oversee these projects – major repairs, planned refits and new builds. ALB projects are generally allocated two surveyors, most L&R projects one.

The surveyor's involvement begins once a contract is placed for a new build, refit or repair. The RNLI HQ staff formally hand over the project at this point and the surveyor (or the designated lead surveyor, if two are allocated) takes responsibility for delivering it.

From now on the surveyor is the main point of contact between the RNLI and the contractor. They monitor quality and progress through site visits, inspections

Photos by RNLI

and meetings, make technical and commercial decisions, resolve queries (via other RNLI teams if necessary) and finally accept the finished work on behalf of the RNLI.

The overall rate of new build and refit projects is dictated by the RNLI business plan, with steady-state "lines" set up wherever possible to maximise efficiency. This means that each "slot" for a steady-state build or refit is of a fixed duration; for instance new Shannon ALB's are delivered from ALC at a rate of 6 per year, while refit duration for a Severn class is 14 weeks.

A typical week for an RNLI surveyor

The breadth of work undertaken by RNLI surveyors means that there is almost no such thing as a typical week – the variety, both in the nature and location of the work, is one of the attractions of the job. The work at a given time depends on the mix of projects in progress.

Although efforts are made to minimise travel and keep surveyors within regions relatively close to where they live, the need for specialist knowledge on many projects means most surveyors cover long distances and require frequent nights away from home.

Some tasks, e.g. a CBM survey or acceptance of an ALB refit, are a full week's work in themselves. Others, say project progress meetings and certain L&R inspections, may only require a day – but there can be a succession of these in different parts of the country! When not travelling, the RNLI surveyor's job consists mostly of project management by phone and email.

In Conclusion

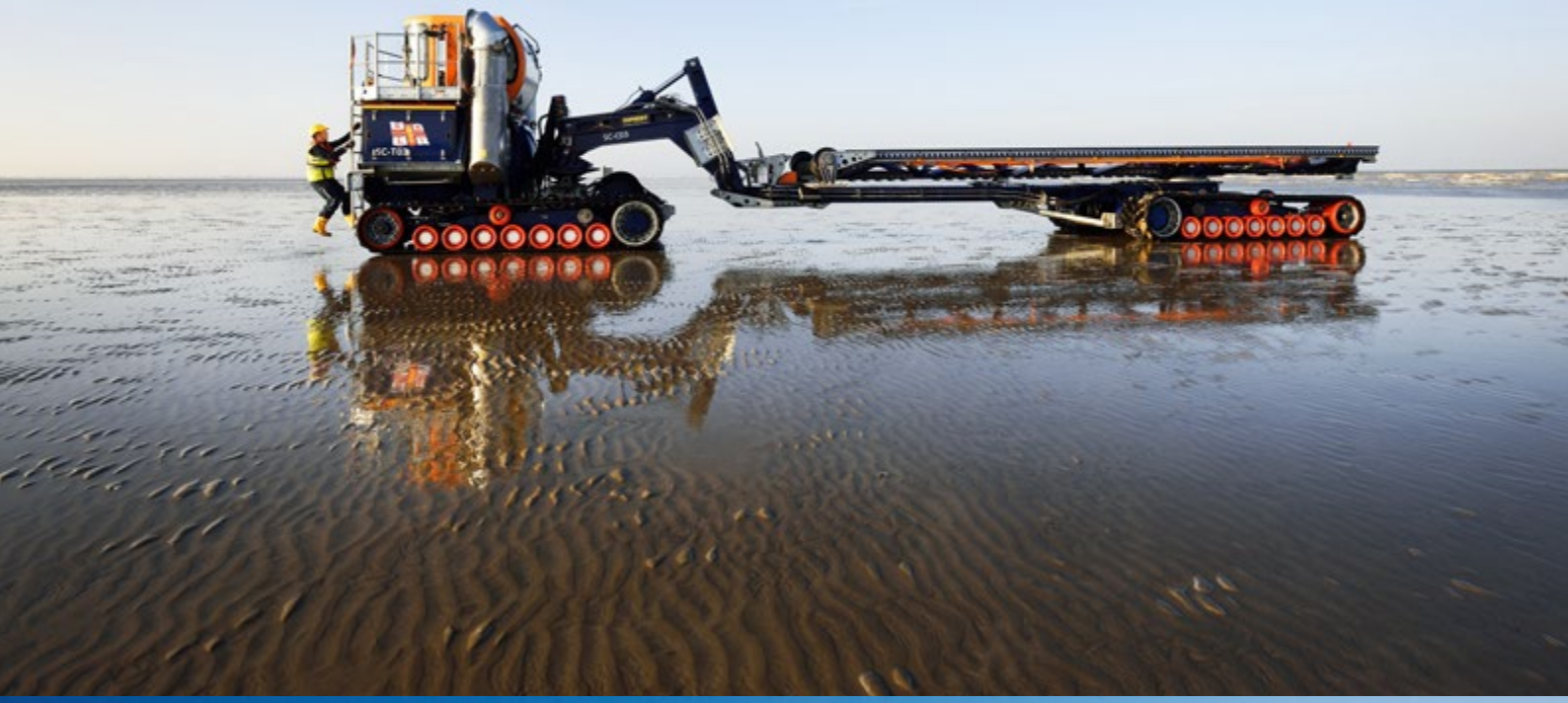
Despite their geographical spread, the RNLI's surveyors form a close-knit team. This not only helps to make the job enjoyable, but also allows knowledge and ideas for improvement to be shared very rapidly. Like all RNLI staff, the surveyors take great pride in the charity and its work.

"Despite their geographical spread, the RNLI's surveyors form a close-knit team."

For more information about the RNLI, visit ***www.rnli.org***

Photos by RNLI

Photos by RNLI



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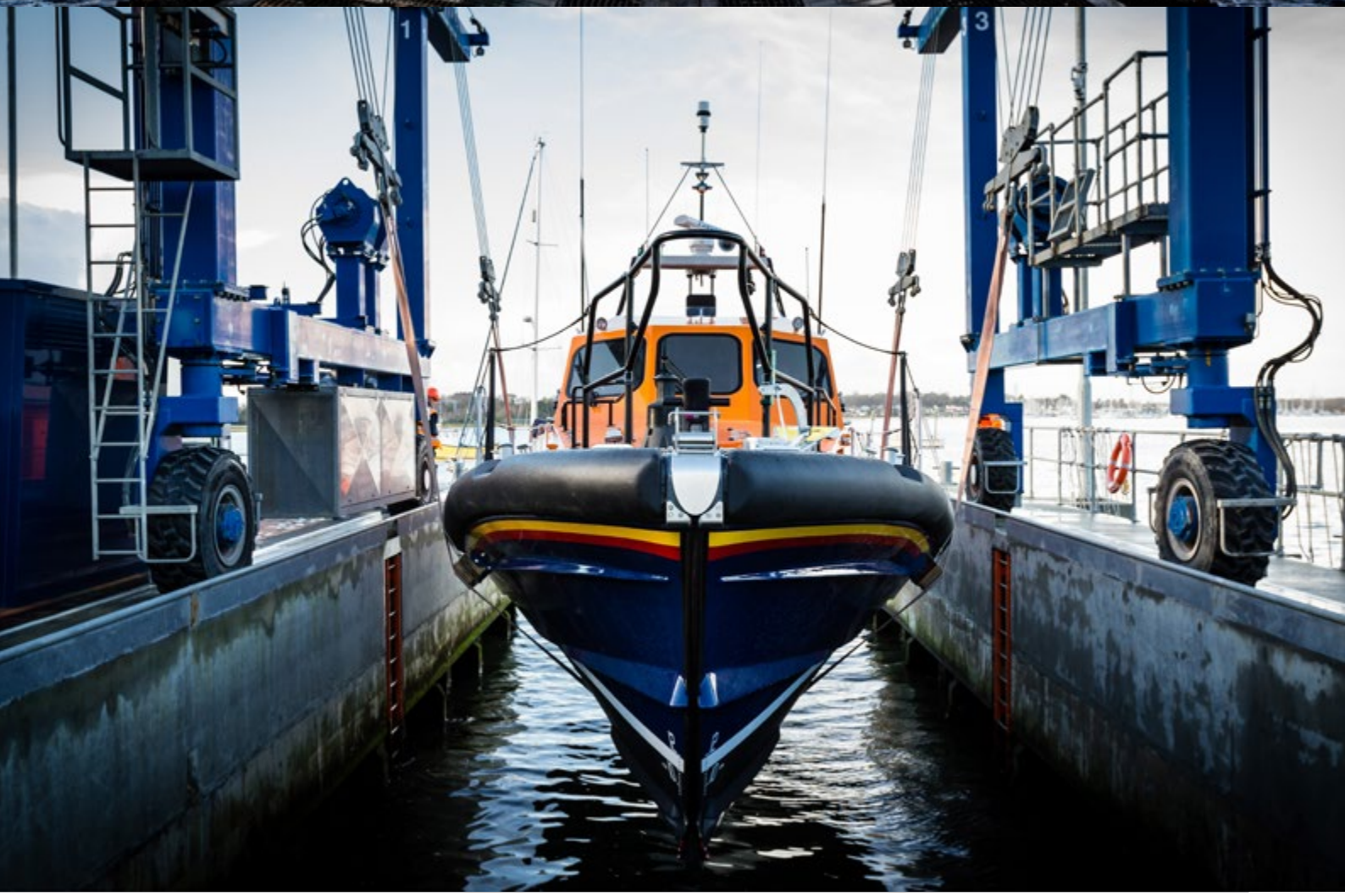


SYNTHETIC (COMPOSITE) RIGGING

-AN INTRODUCTION-

BY **NICK PARKYN**

Synthetic rigging (also referred to as composite rigging) is disruptive technology that in time will replace stainless steel wire rigging. Since marine surveyors will increasingly come into contact with this type of rigging, they need to understand this new technology to enable them to carry out surveys on craft which use it.

Many new types of synthetic fibres have been discovered in recent years. Typically, they are initially used in aerospace applications and later become available for other application where high performance is required. Most of the high performance fibres are characterised by impressive tensile properties, which with the exception of carbon fibre significantly exceed their compressive strength. With yacht rigs, the mast, spreaders and struts are the only components taking compressive force, and the shrouds (stays) operate as tension only structural members. Therefore, the impressive tensile properties of these fibres make them ideal for standing rigging.

There are always new, stronger fibres being developed, however currently available fibres used for synthetic rigging include:

- Synthetic (PBO)
- Synthetic (Carbon Fibre)
- Synthetic (Aramid)
- Synthetic (HMPE)

PBO (Zylon): PBO is short for (polybenzoxazole) is a trademarked name for a range of thermoset liquid-crystalline polyoxazole. This synthetic polymer material was invented and developed by SRI International in the 1980s and is manufactured by the Toyobo Corporation. In generic usage, the fibre is referred to as PBO.

Carbon Fibre: Carbon Fibres are long parallel chains of carbon atoms that are formed by stretching and heating certain forms of organic filaments. Carbon fibre laminates have fatigue limits far in excess of steel and excellent

vibration damping characteristics, but have poor impact strength. Carbon fibre is commonly used high performance fibre which is extensively used in the marine industry for high performance structures including hulls, masts and rigging.

Aramid: A para-aramid synthetic fiber with the trade name Kevlar was developed at DuPont in 1965 and first used commercially in the early 1970s. A similar fiber to Kevlar called Twaron with roughly the same chemical structure was developed by Akzo in the 1970s with commercial production started in 1986. Twaron is now manufactured by Teijin.

HPME: Spectra fibres were first introduced into the marketplace in 1985, after a decade of intensive research, engineering and development by the Allied Fibres division of Allied Signal Technologies. Spun from a solution of Ultra High Molecular Weight Polyethylene (UHMWPE), HPME fibres combine a very high degree of molecular orientation with a very low density which results in fibres with unique and quite extraordinary performance profile. Even among the so-called high performance fibres, the unique physical properties of HPME place it in a class of its own. It is marketed under the trade names of Spectra and Dyneema.

Most forms of synthetic rigging exhibit stretch over time (creep). However creep can and is controlled by appropriate design with stretch equivalent sizing being used.

Different approaches are used to create synthetic rigging solutions:

- Continuous rigging: Using continuous fibres the vertical and diagonal shroud elements are fused to form a single, homogeneous piece of rigging.

- Endless winding of single elements: Using a process that involves continuous winding of fibres around two thimbles until the target cable strength or required cable stretch has been reached

- Fibre rod rigging: Using thin pultruded rods, bundled together to achieve target strength.

- Fibre solid rod rigging: Using rigging elements that are formed as a solid rod like traditional rod rigging, not bundled.

- Rope rigging:
  - Fibres in parallel strand form encased in a protective polymeric sheath
  - Fibres in a rope form typically 12 strand

With continuous rigging and endless winding, fibres are wound around terminals as part of the manufacturing process (see figure 1). When using fibre rod rigging the fibre bundle is typically bonded into terminal fittings. While with rope rigging terminals of similar concept to Norseman Sta-Lock are used for parallel fibre type while the stranded rope form is spliced around special thimbles similar in concept to Merriman thimbles (see figure 2).

With the exception of Carbon Fibre solid rod rigging and HPME stranded rope rigging, the fibers are packaged in some form of sheathing to protect the product from physical damage and exposure to the elements, particularly moisture and UV light (figure 4). Stranded rope rigging made from HPME fibers is not adversely affected by moisture and UV light so it is not sheathed, but may be surface treated.

Pictures courtesy Colligo Marine
Figure 2: Special thimbles used with spliced termination on stranded HPME rope rigging

Picture courtesy Aramid Rigging **Figure 1: Factory sheathed and terminated parallel aramid rigging**

Picture courtesy Aramid Rigging

Figure 3: Sheathed Aramid Rigging

1. Aramid black braid with a special coating
2. Aramid pure (yellow) braid with a resin coating
3. A sturdy black PE cover

Synthetic rigging is gaining acceptance and widespread use on sailing craft of all forms, from monohull to multihull, racer and cruiser with typical usage being indicated in table 1.

The advantages of synthetic fibre rigging are:

- significant gains in strength
- significantly lower weight aloft
- ability to easily inspect (when using synthetic rope rigging)

PBO rigging has had over a decade of proven success at the America's Cup level. As an example PBO is claimed to be 65% lighter than traditional rigging at 110–130% of the price of rod rigging.

PBO, Carbon and Aramid rigging as it is made to specific length, terminated and sheathed using specific processes and equipment, it is typically provided by specialist rigging companies as a manufacture and fit service.

HMPE particularly that based on stranded Dyneema SK75 rope rigging is cost effective for cruiser and cruiser/racer craft. HMPE specifically Dyneema SK75 is typically sold under trade names Dynice DUX (Hampidjan) and STS-12 (New England Ropes) and is braided rope of 12-strand construction. Dynice DUX is heat set which removes constructional elongation and further reduces stretch increasing its performance and suitability for use as standing rigging. Since the ends are spliced and since companies like Colligo Marine in the USA manufacture and supply innovative connection hardware it has allowed this HMPE rigging to be provided by smaller rigging companies or done by individuals as a DIY project (see figure 4).

Synthetic rigging results in a more reliable rig, a stiffer, faster boat with greatly reduced pitching moment. Reducing weight aloft on any sailing craft lowers the vertical position of the center of gravity (VCG), which dramatically improves a yachts handling, stability, and response. Consequently moving to synthetic rigging can represent a cost effective "upgrade" for any type of sailing craft. Based on acceptance and use of affordable synthetic rigging marine surveyors will increasingly surveying craft using HMPE rigging. Inspection of HMPE rigging is easier and outcomes are more conclusive than traditional stainless steel wire rope rigging inspections as all aspects of terminations are visible (see figure4).

Lifespan of synthetic rigging, if well cared for, is expected to be at least as good as wire rigging, however many rigging suppliers based on specific experience indicate longer lifespans. Since the use of synthetic rigging is relatively new, data regarding lifespan is still being gathered.

The innovative use of HMPE is growing, with applications in replacement of lifelines and "soft" shackles.

This article is an introduction to this subject, the IIMS will be publishing a Self Help Guide – "What a Marine Surveyor needs to know about Synthetic Rigging which covers the subject in greater depth, provides data and suggests types of inspection required for synthetic rigging.

The author would like to thank Colligo Marine and AramidRigging for allowing the use of their pictures.

Picture courtesy of Colligo Marine

Figure 4: HPME stranded rope rigging (Dynice DUX) spliced around special thimbles and attached to (turnbuckles) rigging screws. It should be noted that the shroud in the foreground (without black chafe protection can easily be fully inspected.

Table 1: Typical Usage

Type of Rigging	Usage			
	Racer	Racer/Cruiser	Cruiser/Racer	Cruiser
Synthetic(PBO)	✔	✔		
Synthetic (Carbon Fibre)	✔ (high/intermediate modulus)	✔ (standard modulus)		
Synthetic(Aramid)	✔	✔	✔	✔
Synthetic(HMPE)	✔	✔	✔	✔

CLOUD Computing

BY
NICK PARKYN

What is Cloud Computing?

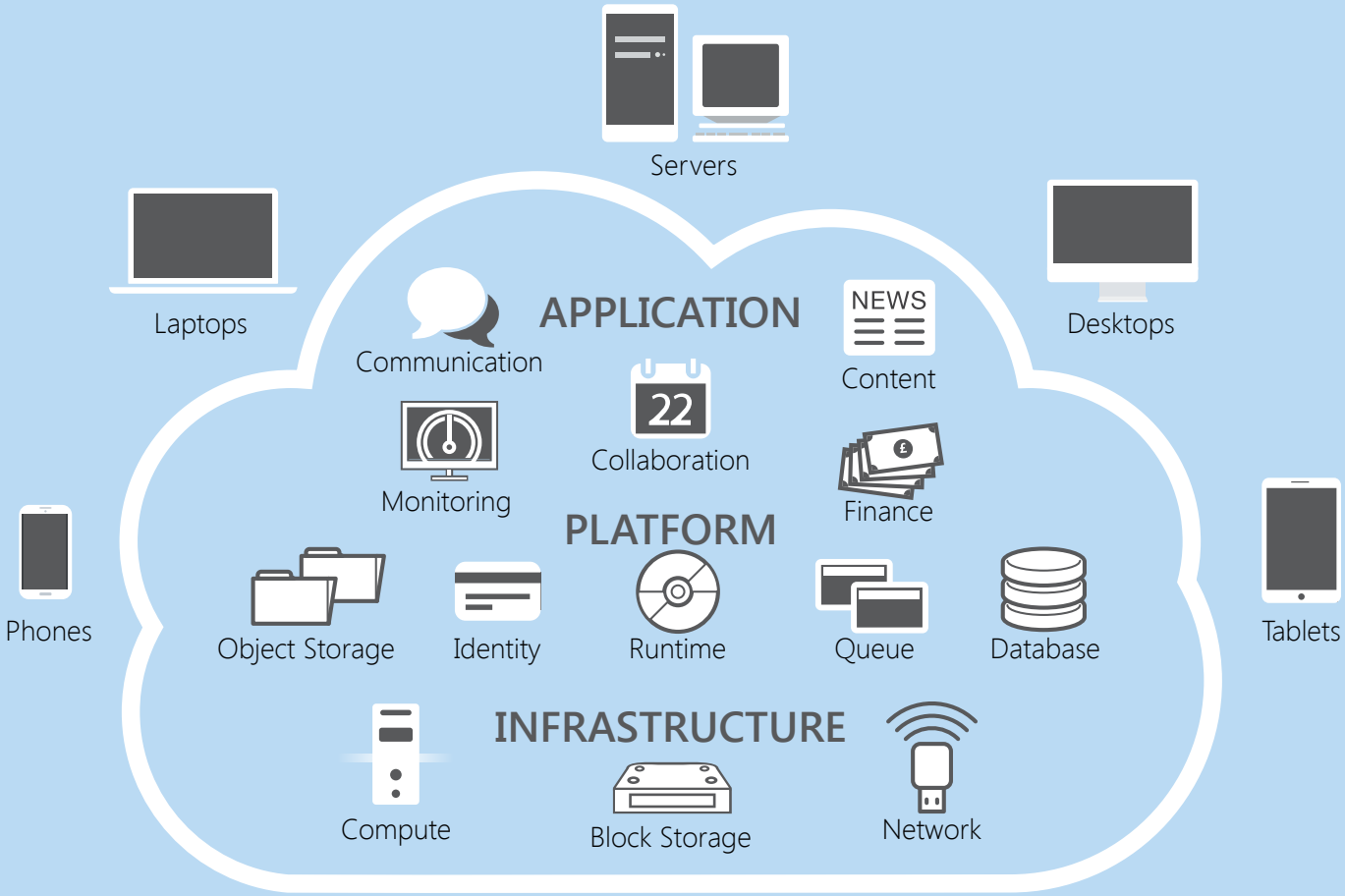
> ***Cloud computing*** *is a kind of Internet-based computing that provides shared processing resources and data to computers and other devices on demand. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services). Cloud computing and storage solutions provide users and enterprises with various capabilities to store and process their data in third-party data centers It relies on sharing of resources to achieve coherence and economy of scale, similar to a utility (like the electricity grid) over a network.*
> ***Source Wikipedia*** *: https://en.wikipedia.org/wiki/Cloud_computing*

Cloud Computing is a new disruptive technology that will change the way that we work, reduce the complexity of computing and enable our businesses primarily through ease of use of our computing infrastructure, device independence and location independence.

Since marine surveyors spend large amounts of time onsite, seamless access to their applications and data can enable them to operate their businesses more efficiently and provide better customer service. Cloud Computing is a key enabler of this, however you need to understand which aspects of Cloud Computing are of value and how to best utilise them.

Cloud computing is the result of the evolution and adoption of existing technologies and paradigms. The thin client model is evolving with more powerful mobile phones and tablet computing devices. Today Tablet Computers like Apple iPad, Microsoft Surface and Android based tablets (e.g. LG G Pad, Google Pix C and Samsung Galaxy Tab) are more portable, but have limited local (solid state) disk storage. They are designed to support a Cloud based model where data and applications are stored on the cloud, not locally.

The goal of cloud computing is to allow users to take benefit from computing, without the need for deep computer knowledge or expertise. The cloud aims to cut costs, and helps the users focus on their core business instead of being impeded by the complexities of IT.



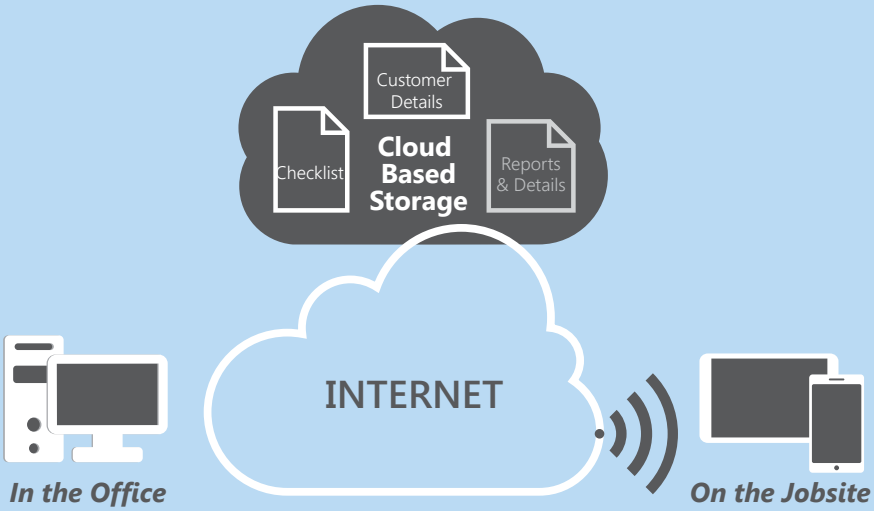
CLOUD COMPUTING

Cloud computing enables the following key characteristics:

- **Device and location independence** enable users to access systems using a web browser regardless of their location or what device they use (e.g. PC, mobile phone). As infrastructure is off-site (typically provided by a third-party) and accessed via the Internet, users can connect from anywhere
- **Maintenance** of cloud computing applications is easier, because applications do not need to be installed and maintained on each user's computer
- **Performance** is monitored by the cloud computing service provider. It is based on standardised service levels
- **Productivity** can be increased as multiple users can work on the same data simultaneously
- **Reliability** can be achieved using multiple redundant sites and other approaches which allow cloud computing to support business continuity and disaster recovery requirements
- **Scalability and elasticity** enabled by dynamic and self-service provisioning capability of resources provided by cloud computing service providers
- **Security** can improve due to centralization of data, increased security-focused resources, however there can be concern about loss of control over certain sensitive data.
- **Agility** improves with users' ability to have access to computing capability as and when required
- **Cost reduction** is enabled with a cloud based computing model. It reduces capital expenditure but requires operational expenditure. Pricing is on a utility computing basis. It is fine-grained, with usage-based options, but actual costs savings depend on the type and nature of usage.

When engaging Cloud Providers, you must read the fine print to be sure you understand what is being provided and with what level of service guarantee and quality of service. Many cloud services start out being free, but if you exceed certain defined usage quotas you will be charged for usage.

Device and location independence is possibly the most valuable aspect of cloud computing as it enables users to access systems using a web browser regardless of their location or what device they use (e.g. PC, mobile phone, tablet). As infrastructure is off-site (typically provided by a third-party) and accessed via the Internet, users can connect from anywhere at any time provided that some form of internet connectivity (wireless, or wireline) is available.



Initially typical Cloud usage by marine surveyors would be storage centric, supporting location and device independent (offices and onsite) access to data (files) with applications being hosted on their mobile computing device.

This is detailed in the picture above where:

1. Files are stored in the cloud (cloud storage) and accessed from it via the internet
2. These files can be accessed from office based desktop system and mobile device
3. Office based system is typically connected to the internet through fixed line (copper or fibre)
4. When on the jobsite the mobile device is connected via the most cost effective data connection (mobile data or local Wi-Fi network (if available))
5. In all cases the computing device sees the cloud based storage as disk drive, so use of data is seamless.

Marine surveyors could evolve from basic cloud model to future models which could include use of the facilities of a full service cloud provider (e.g. Amazon (AWS)).

SECURITY

There is a lot of "fear mongering" and cloud services are not as insecure as is often suggested. Most of the cloud service providers e.g. Dropbox, iCloud, Google Drive and OneDrive are offerings from large companies which have both the budget and motivation to provide a high level of security for their data stores and services. This is much higher level of security than can be achieved by the average individual within their budget.

With cloud based solutions security can improve due to centralization of data and increased security-focused resources, however there are often concerns about loss of control over certain sensitive data. Security is often as good as or better than other traditional systems, in part because providers are able to devote resources to solving security issues that many customers cannot afford to tackle. However, the complexity of security is greatly increased when data is distributed over a wider area or over a greater number of devices.

Your data is your responsibility!

When engaging Cloud Providers, you must read the fine print to be sure you understand what level of security is being provided for data in transit to and from the cloud and while at rest (stored in the cloud) and with what level of service guarantee and quality of service. Many services start out being free, but if you exceed certain defined usage quotas you will be charged for usage.

You should still "sync" files back to your office computer and backup key files from that system yourself to ensure that your business is never at risk. If your security assessment determines acceptable level of risk, you may relax the frequency of your backups of your office (desktop system) as copies of files are stored at more than one site.

Security of data in transit is essential and cloud service providers at a minimum must should encrypt data when it is in transit (transferred into and out of the cloud) and most will also encrypt the data at rest (when stored).

Secure connection and communication to the cloud provider is typically based on use of HTTPS and SSL protocols, while data at rest (stored) is typically encrypted using 128-bit or 256-bit AES encryption.

If data is not being encrypted at rest, or if it is and the cloud service provider is controlling the encryption keys, it does mean that the data can be made available and isn't as secure as it might otherwise be.

If you have sensitive data and wish to ensure that your data is secure, then you should encrypt it yourself prior to storing it in the cloud. If you own and control the encryption keys then you have control over the decryption of your data. On the fly encryption service such as BoxCryptor, Whisply or similar encryption tools can be used to encrypt data prior to uploading it to the cloud.

"A chain is only as strong as its weakest link"

Security however is only as strong as the weakest link which is not the cloud service provider, but your ability to protect your passwords. Be sure to follow industry best practise in terms of password composition and usage and employ two-factor authentication when available. Beware of scams which attempt to obtain your cloud login credentials.

Nick Parkyn is the author of the IIMS Self Help Handy Guide, "***What a Marine Surveyor needs to know about Using Computers in Marine Surveying***" which is to be published by the IIMS.

A Comparison of LASHINGS for Heavy Lift Deck Cargoes

BY
MIKE WALL

CARGOES carried by sea require more lashings than for those carried by road or rail. Deck cargoes, because of their very location and the means by which they are secured, will be subjected to velocity and acceleration stresses greater, in most instances, than cargo stowed below decks. Over the years lashing techniques have evolved to suit particular cargoes loaded on various types of vessel operating in different weather conditions. With the introduction of new technologies in the offshore industry lashings have had to change with the times.

More recently there has been a rapid expansion in offshore oil and gas operations but more so in the development of land based and offshore wind farms employing wind turbines to generate electricity. This in turn has generated a new industry in the construction of wind turbines and towers with the need for shipping from manufacturer to user with appropriate lashing arrangements.

Traditional methods of lashing heavier loads have been with wires and occasionally chains. However, the development of polyester webbing has added an alternative.

CHAINS

The use of chain alone for the securing of general deck cargoes is not widespread. Where chain lashings are used they tend to be supplied in precise lengths already fitted with terminal points and tightening devices. Bottle screws or tension levers will be required to tension the chains after fitting. Where there are several chain lashings in close proximity there can be difficulty in adjusting bottle screws or tension levers.

Chains are widely used in the securing of freight containers, timber cargoes and vehicle trailers. In general, chain used for non-specific uses is awkward to handle, tiresome to rig, difficult to cut to length, and does not render easily. For general purposes it is most effectively used in relatively short lengths in conjunction with, or as a part of, lashings otherwise composed of wire or webbing.

Chains tend to need daily checks on their tension during a voyage, which might not be possible in heavy weather. There is also a limit to the amount of adjustment of the chains due to the design of the bottle screws. They are re-usable but are susceptible to heavy corrosion wastage which can significantly reduce their performance.

WIRE ROPE

It is recommended that wire ropes should be round-stranded, flexible and not so great in diameter as to make their use cumbersome. They tend to come in coils requiring cutting to length with the need for bulldog grips and bottle screws.

Wires of different construction and of varying sizes or strength may be needed for particular lashing purposes and the certificated minimum breaking load should always be verified before using such wires.

Where there are several wire lashings in close proximity there can be difficulty in adjusting bottle screws, both during initial lashing and tensioning during the voyage.

Wires tend to need daily checks on their tension during a voyage, which may not be possible in heavy weather. There is also a limit to the amount of adjustment of the wires due to the design of the bottle screws. Wires are also not re-usable.

WEBBING

The use of webbing slings and webbing lashings for cargo securing purposes has steadily increased over the past decade or so. There are instances where webbing is ideal for securing deck cargoes and there are other instances where it should be used with caution.

Whilst it was previously believed that webbing should not be applied to large, heavy, crated items or high standing heavy machinery where relatively long spans may be involved the systems now available can effectively overcome this problem.

Webbing is manufactured from impregnated woven polyester fibre and therefore will stretch more than wire rope. It is supplied in reels and may be easily cut and fashioned to any required length, Those using it on a regular basis have lengths made to order.

Webbing should not be used without checking the manufacturer's literature as to its nature, breaking load and application. Recent independent tests confirm that good quality webbing will not fracture at loads less than those specified by the manufacturers. Tension on a hand ratchet can be obtained easily up to 0.54 tonnes and then with increasing difficulty up to a maximum of 0.60 tonnes. These figures may be increased further with specialised tools used during the ratchet tensioning.

Recent tests have shown that webbing under tension will return to its original dimensions on release of the load which makes it re-usable.

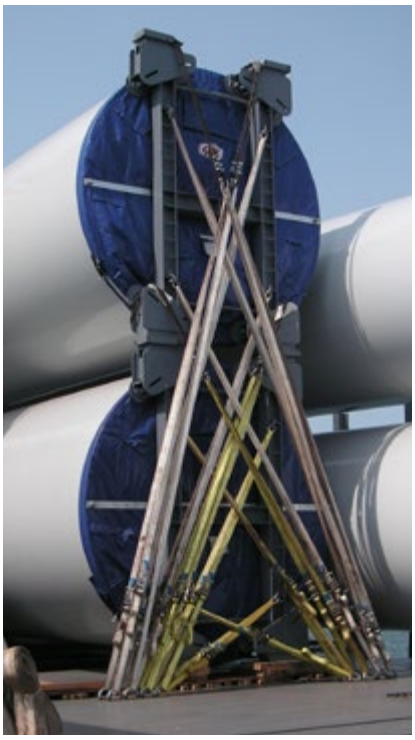
Webbing has the following advantages:

- It is light and easy to add or remove in a system.
- A webbing system is quicker to fit than any other lashing system.
- It is by far the easiest to adjust at sea with no limit on the amount of adjustment.
- It is safer for stevedores, lashing gangs, and crews to handle (SOLAS).
- There is less chance of cargo contact damage.
- It can be returned to the origin port at low cost.
- It is reusable.
- It has elasticity which means a more constant tension on the cargo as the forces increase but more importantly as they diminish.
- Web lashings are environmentally friendly due to the ability to re-use.
- Whilst chains and wires have a lower initial capital cost, webbing is much less costly when taking into account the number of times it can be re-used.
- The load capacity of webbing is easily identifiable.

Ship's officers also report that they do not have to retension webbing lashings as much as wire or chains during a voyage.

Chains and wires are known to remain permanently elongated after loading, hence the need for frequent retensioning. Web lashings once stretched will retract when the load is removed giving a more consistent tension. Once stretched wires or chains have to be tightened or will be slack to some degree. If the slack remains shock loading of 2 x breaking load may result.

It is important to note that several carriers have been using webbing for lashing of heavy loads, eg, wind turbine towers for several years without problem. It is therefore suggested that web lashings have become the custom of the trade for certain heavy loads.



Why enhancing your standards as a surveyor really matters

BY **MIKE SCHWARZ,** *IIMS Chief Executive Officer*

"The wonderful thing about standards is that there are so many to choose from"

Wherever I travelled throughout the world in 2015, I heard the same comments time and time again in many different countries. There are incompetent surveyors on my patch who charge less than me, what should I do? How do we as an industry get rid of the quacks? How can these people be allowed to survey, they are incompetent and have limited experience?

My answer is a simple one, but with hidden depths to what is a thorny subject. Enhance your standards as a surveyor, rise high above the mediocrity that pervades the surveying business and leave the quacks in your wake.

I have taken this most special of years, the IIMS 25th anniversary year, to speak out about surveyor standards in general and the need to enhance and develop them as a matter of priority and urgency. So let's start by defining what a standard is. The dictionary definition says: 'a required or agreed level of quality or attainment'. Some of the synonyms for the word standard, such as acceptable, basic, normal or usual are uninspiring. As a surveyor you must aspire higher than them.

There needs to be a minimum acceptable standard, but determining that is not straightforward. It could be based on time served, or on experience and knowledge acquired. Your education achievements might come into play. But at the end of the day, what is an accepted minimum?

The test of any great standard is that it becomes so ingrained and 'a part of the system' that the end user does not give it a second though. Consider for a moment how the blue chip, multinationals invest many millions of dollars to develop standards acceptable to us all. Yes enhancing and improving standards do not emerge without costs, without time invested, without effort, commitment and contributions from you as an individual.

So what are the motivations for you and why should you bother to enhance your standards?

Here are a few:

- To make you an even better surveyor than you are now
- To enable you to keep a grip on the rapidly changing world driven by technology
- To set yourself ahead of and apart from incompetent and less experienced surveyors
- To further your reputation in your field of expertise
- To make you an even more marketable marine surveyor
- Ultimately to give you a sense of pride in your work, safe in the

work methods then make plans to improve and enhance your own performance. When you are ready, you can implement your plans, followed by a period of monitoring and evaluating your progress. And if you are very brave, why not approach them to mentor you, or to share their knowledge with you?

Some of the steps you could take to enhance your standards include:

- Gain further professional qualifications although theory without practical is less useful
- Seek help in self-acknowledged areas of weakness. We all have them, so do not be shy to admit yours and seek advice in those areas
- Learn some new skills, for example you could attend relevant training events put on for your benefit, or take an afternoon's course about how to make social media work for you, or attend a word training course to enable you to prepare even better reports
- Keep your Continuing Professional Development current
- Network with your peers at relevant events – it is free

The professional surveying bodies have a role to play and have a responsibility to help you further develop too. They offer appropriate training days, conferences and events as well as providing networking opportunities. Some offer mentoring services. But they all cascade information and regulatory news to their members and are intent on sharing best practice and knowledge. The professional bodies also have a key responsibility to ensure incompetent surveyors are denied membership and left out in the cold.

Now here's the crunch - why does all this matter? It matters because it is time to rid the industry of incompetent surveyors and those who just talk a good story, but who cannot back up the chat. I refer not to new, young and aspiring surveyors who are keen to learn and develop. They are entitled to make mistakes as they are learning the complex art of marine surveying. As an industry we must nurture them for they are our future. But good habits must be instilled early and they must learn from the inevitable mistakes they will make. It is not they to whom I refer but to those who knew a lot once and forgot to develop further in a rapidly changing world. In my opinion, a surveyor who was competent 15 or 20 years ago is not necessarily so now unless he/she has kept on learning.

I mentioned earlier that an investment is required and sure you need to commit some money to this. But how much should you invest in yourself, recognising that if you do not do so, the harsh reality is that no-one else is likely to? Equally important is how much time you are prepared to set aside for your self-development. Time is money of course. As a general rule of thumb 3% of turnover is the amount you should be reinvesting in yourself annually.

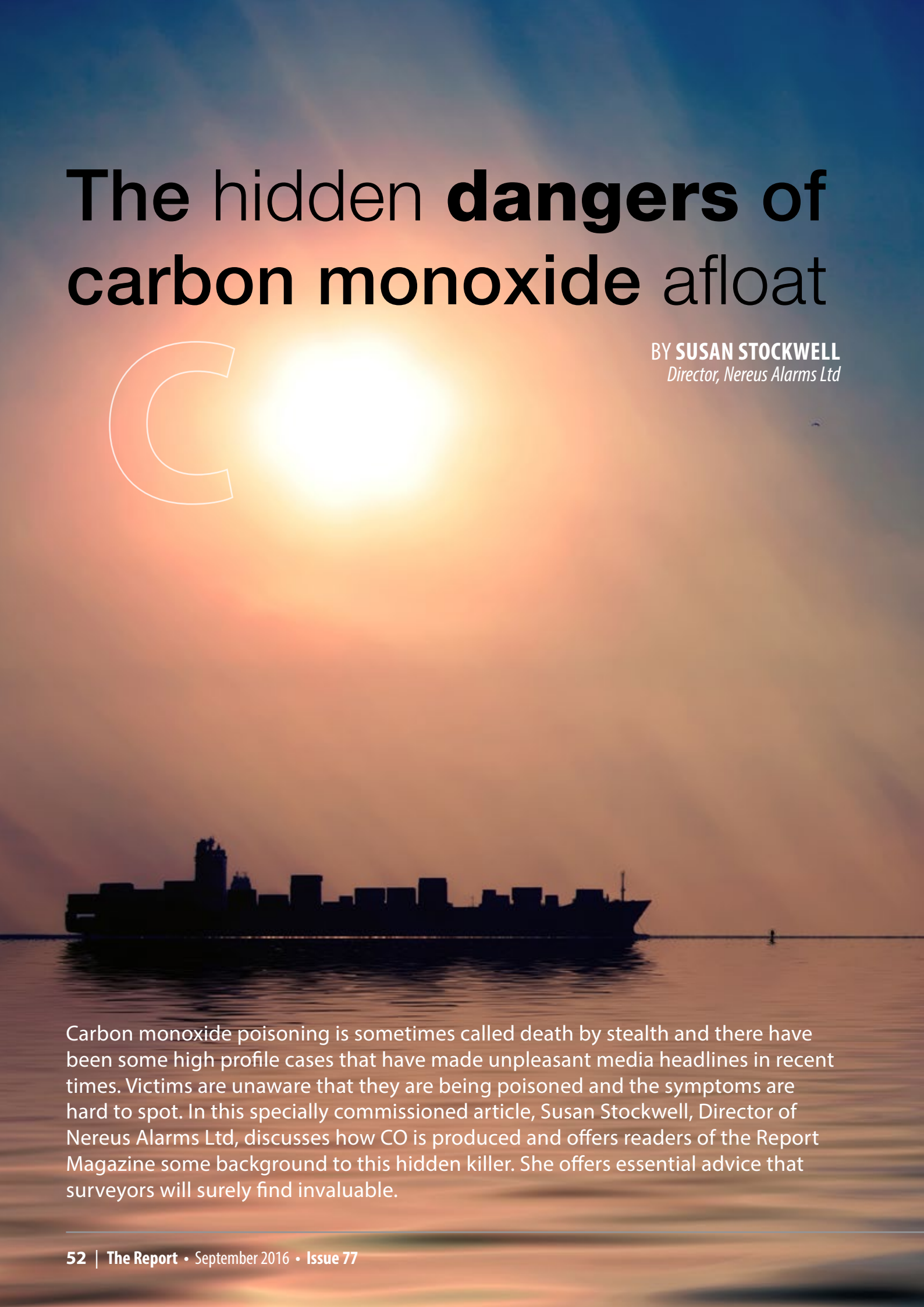
My final words on standards. As Warren Buffet once famously quoted, "The best investment you ever make will be in yourself." And he is right. But this is an industry responsibility as well as an individual one. So, if we truly care about the profession we must care about enhancing and maintaining ever higher surveying standards.

knowledge you have carried it out to the highest possible standard and not just to an acceptable standard

To better understand how good your own personal standards are, you can easily benchmark yourself. To benchmark means to evaluate something by comparison with a standard. Ah but what if no standard exists? You could find a surveyor whose work you admire or someone you respect in the industry. Study how they achieve their results and what it is they do that is to a high standard. Analyse their

The hidden **dangers of carbon monoxide** afloat

BY **SUSAN STOCKWELL**
Director, Nereus Alarms Ltd



Carbon monoxide poisoning is sometimes called death by stealth and there have been some high profile cases that have made unpleasant media headlines in recent times. Victims are unaware that they are being poisoned and the symptoms are hard to spot. In this specially commissioned article, Susan Stockwell, Director of Nereus Alarms Ltd, discusses how CO is produced and offers readers of the Report Magazine some background to this hidden killer. She offers essential advice that surveyors will surely find invaluable.

Carbon monoxide poisons by starving the body of oxygen. It displaces oxygen in the blood when the red blood cells bind with it in preference to oxygen. Consequently, the body cannot function as multiple organ failure occurs.

Symptoms of low level carbon monoxide poisoning can include headaches, nausea, stomach pains, tiredness, dizziness and confusion. Understandably this makes it very difficult to diagnose as the symptoms can be confused with so many other conditions. More so because no symptoms may be present at all. Low level symptoms can become progressively worse over time, or can subside when away from the source. High level poisoning can occur very quickly and rapidly leads to unconsciousness and death. Death can be almost instantaneous from first exposure. Older people, children and domestic animals are at higher risk of this poisoning because of their smaller body masses. Thus, on craft used by people bringing animals aboard, or used, or crewed by people from either of these groups, care taken should be increased proportionately. Similarly, if the boat is used for drinking alcohol then the likelihood of people being more careless of safety should be taken into consideration. On a chartered vessel then the temporary users have to relied on to read, understand and follow all instructions as to operating equipment properly. A child, someone who doesn't read or understand the English language, or even just someone bloody minded who doesn't believe in health and safety is at high risk of simply not following instructions. And what is fondly referred to as "canal disease" i.e. being drunk, is not confined to users of those particular vessels.

Carbon monoxide is generated by incomplete combustion of a carbon based substance. This might be gas (LPG), petrol, diesel, oil, wood, charcoal, solid fuel (coal or coke), kerosene/paraffin or methylated spirits. During complete combustion carbon and oxygen combine to create carbon dioxide. During incomplete combustion they combine to create carbon monoxide. This occurs when the carbon based product being burnt, or combusted, is not provided with enough oxygen to generate only carbon dioxide and monoxide is created instead. On a vessel, if a living creature, whether a mouse or a human stowaway, comes to the end of their days in the ventilation system then the burning taking place on board may be starved of oxygen and so carbon monoxide may generated at anything up to fatal levels. The same affect will of course be created by sleeping or hiding in the ventilation of a vessel.

"Carbon monoxide poisons by starving the body of oxygen. It displaces oxygen in the blood when the red blood cells bind with it in preference to oxygen. Consequently, the body cannot function as multiple organ failure occurs."

One traditional way of spotting that incomplete combustion is occurring is by looking for sooting near where the combustion is taking place. As a classic car enthusiast was recalling to the writer recently, if the engine is running too rich you can tell because the spark plugs will be sooted up. Too much petrol being squirted in apparently means not enough oxygen in the mix, so that it won't burn properly and soot is generated. Just one apparently of the many obstacles to be overcome on the highly satisfying route to a smoothly running TR2. Sooting indicates incomplete combustion, which in turn means that Carbon Monoxide has been generated. In checking for this the following mainstay of crime fiction beloved of the female reader should be borne in mind. If the area where you would expect to have seen sooting is much cleaner than might have been suspected eg that room, or part of it, seems to have been cleaned more recently that elsewhere, then suspicions should be aroused.

The use of sticker icons warning against whatever is banned whether smoking, or charcoal may reduce the risk of the ban being ignored.

Carbon monoxide afloat can be created in many ways. The first set of circumstances are those in which carbon monoxide is expected to be a bi product. Smoking a cigarette, cooking on a barbecue with charcoal, smoking a shisha pipe, or running an engine on petrol or diesel will all be expected to generate CO. The danger from these forms of burning has been well known from ancient times to the present. In ancient Greece shutting someone in a room with slow burning coals was used to kill through poisoning of the air. The use of carbon monoxide in car exhausts for suicide is also well known.

On a small vessel such as a pleasure craft simply banning the use of barbecues, hookah pipes and even smoking will stop CO from these sources. However, it is only as effective as the ban's enforcement. On a charter vessel the risk of users ignoring safety instructions is high. Drinking alcohol and thinking health and safety requirements are some sort of conspiracy are quite common in our culture and this should be taken into account in deciding the level of warning given. Therefore it is suggested that all users of a vessel, whether the person paying for hire or their guests, signs for reading these warning regarding what is banned as well as any other safety measures. Whatever they read needs to be in large enough print to be legible and ideally signed on every page and copy provided.

The use of sticker icons warning against whatever is banned whether smoking, or charcoal may reduce the risk of the ban being ignored.

On a larger vessel prone to stowaways, or use as sleeping accommodation in areas not designed for such, enforcing a ban is similarly difficult. People fleeing countries where their families and friends have been killed and their property, including land, taken from them by the authorities, will not be reading health and safety briefings when stowing away or using rented space to sleep in dangerous areas of a ship. However, just as the owner of property has a legal duty regarding the safety of burglars (man traps have been illegal for many years) so a ship owner should be mindful of the safety of everyone on the vessel. Death or illness through carbon monoxide poisoning is a real hazard for people confined to very small spaces without heating who will light fires to keep warm. This should be taken into account in devising procedures generally for ongoing checks for stowaways aboard. Areas which could be used for this purpose need to be checked on an ongoing basis.

Banning of petrol and diesel engines on land is certainly being mooted in various countries, particularly for cities. Banning of diesel engines at least is also reported on some waterways. Perceived problems from noise and pollution from exhaust fumes of pleasure craft in marinas, particularly inland, has led to pressure to ban use of diesel and

certainly to prevent the building of more moorings. The increased demand for the luxuries provided by electricity including technology means that diesel generators and engines can be running almost continuously during mooring. The next approach to situations which, in ordinary use, are guaranteed to produce CO is ventilation. This is in fact two fold. There is ventilation to minimise the production of CO by maximising the amount of air and therefore oxygen which reaches the point of combustion. There is also ventilation which takes away the exhaust fumes which contain CO. Installation of the ventilation system needs to be carried out professionally, so that the design of the vessel and the fitting of anything which carries away exhaust fumes should be effective. Maintenance and correct operation are also essentials. Corrosion and poor jointing is a risk on large and small vessels as is the possibility of the exhaust system becoming blocked. The smallest of leaks from the exhaust will allow fumes to escape into what are generally very small well sealed areas on ships and boats. The fact that ships even need a set of regulations covering confined spaces shows the potential for accidents in these areas. Fumes associated with freight as well as the ever present risk of carbon monoxide escapes have caused enough accidents for these regulations to be put in place. On a boat the cabin area is a classic place for fumes to be able to build up. In fact, some manufacturers consider carbon monoxide detection in all cabins. Blockages of exhaust ventilation is a potential problem where vermin nest or die in the area whilst a boat is laid up. Similarly, ventilation can become blocked by vegetation caught up in it. Simply mooring inappropriately hard up against something which bocks the exhaust can be a problem. Blow back in high winds is another risk for vessels of all sizes. Poor maintenance and in particular failure to service solid fuel burners and gas fires for cooking can starve the appliance of air needed for safe combustion. Fuel such as LPG which would normally burn without generating CO or with relatively low levels will start to generate dangerous levels when starved of oxygen by blocked ventilation. The colour of a gas flame burning healthily, with enough oxygen, is expected to be blue. Without enough oxygen and smouldering it is likely to be orange. Users of small craft, particularly those not used to spending time afloat, have a tendency to block off ventilation in order to try to keep warm, particularly in the winter months. Sealing up any drafts around windows and blocking off deliberately installed ventilation points is likely to occur where passengers and crew are not aware of the risks run in doing so. In the same way that vermin and birds' nests will block chimneys and pipes on land and in smaller craft, larger craft can also run the risk of blockages in ventilation.

Carbon monoxide incidents occur both on land and afloat.

Ralph Waldo Emerson, sometime leader of the transcendentalist movement in America, said "Build a better mousetrap and the world will beat a path to your door".

Mice are still a problem today and so is carbon monoxide. Unlike mice, which we can see hear and smell, human beings cannot see, hear or smell carbon monoxide.

Relying on the medical profession for warnings and diagnoses of this poison is a bit hit and miss. Awareness has risen in France following the death of a doctor called to a carbon monoxide poisoning case. The doctor himself died as he, like the rest of us, had no means of detecting the presence of the gas through his own bodily senses. The French are now reported in our press as recording 100 cases a year of death from carbon monoxide poisoning. However, in this country routine post mortem testing for this form of poisoning doesn't take place despite that fact that so many deaths occur in places where

Carbon monoxide incidents occur both on land and afloat.

carbon based fuel is burnt for heating or cooking. The brighter blood colour does not always occur in carbon monoxide poisoning cases and unless the skin is broken, spotting it on a body whose skin colour is dark would obviously be more difficult than someone with fairer skin.

It is now possible to monitor carbon monoxide levels in the body much more easily. This is apparent in recent reports of a former smoker in this country who was being monitored for carbon monoxide in his body. It was assumed he had failed to give up when his levels didn't respond by dropping as expected. As an ex smoker his poisoning as a result of a bird nest in the ventilation blocking air to a boiler was only picked up because his blood tests showed high levels of carbon monoxide. This is a recognised risk for carbon monoxide and just one example of a large bird's nest creating conditions which generated this poison in someone's home.

Human beings cannot see, hear or smell carbon monoxide.

A conviction for manslaughter was made in the case of the Arniston, when a Gas Safe fitter who brought a petrol generator on board a boat on which he himself had bodged the exhaust system. As a result two deaths occurred on board, one that of a child. He himself awoke with the classic symptoms of the poisoning which he believed to be heart problems. This was a recent case that received national press coverage and took place on Lake Windermere.

Still under investigation at the time of writing is the case of a couple in their 50's and 60's as well as a dog who all died in mid 2016 at Wroxham Island on the Norfolk Broads. Their engine had been left running whilst moored, probably to charge batteries. The exhaust fumes had blown in under the canopy over the boat. On testing by the Marine Accident Investigation Board the levels reached dangerous levels within 3 minutes. The reminder not to ignore the smell of exhaust fumes echoes childhood warnings remembered by the writer of this article to avoid sitting at the back of buses near the engine where the smell of fumes could be pretty awful.

Eschol is the name of a scallop dredger which was used as overnight accommodation by two people who died from carbon monoxide poisoning. In this case the fumes from a butane grill clearly lit for keeping warm had killed them. It was still burning when they were found dead in their bunks. Readers may recall student accommodation officers' warnings not to use cookers for heating in student digs on the same principle. Something which may be safe for burning for the relatively short period whilst being used for cooking may not be so for hour upon hour of burning without good enough ventilation for heating.

The Marine Accident Investigations Branch carries various other reports of accidents involving this form of poisoning which can be found by using the search facility on their section of the .gov website.

Writer's credentials and first-hand experience of CO poisoning. The writer of this article is able to draw on basic chemistry learnt at school, incidents of carbon monoxide poisoning in both her workplace and her own home, experience acting for a victim of carbon monoxide poisoning, 15 years marketing marine gas detectors and a soupcon of help from Wikipedia.

The carbon monoxide incident in a former workplace had resulted in several casualty admissions for a colleague who as young girl was assumed to just be prone to fainting. Fortunately, I noticed that the room she worked in was probably poorly ventilated after a conversion of the building and that the gas fire was right next to her desk. Only after being asked to test for carbon monoxide presence was it discovered and the standard treatment of the use of a decompression chamber was used.

The incident in the writer's own home occurred some years, ok decades, ago in student digs. A gas cooker had been poorly maintained so that soot was visible around the pilot light. On discussing this earlier student event with the medical expert when representing a carbon monoxide poisoning victim, he, the expert, asked how I was after having lived with carbon monoxide in the house. Fortunately, I myself had been sleeping in the room furthest from the faulty appliance, a cooker with a sooted up pilot light. He asked after the other occupants, whether they had done as well as expected in their degrees. Certainly the girl directly over the kitchen had not. The girls in the other rooms hadn't shone but the one directly above the carbon monoxide and sleeping there with low level poisoning for several weeks had, as the expert expected, had a far worse set of results than expected. The expert suspected that the low level poisoning would have caused brain damage.

The girl suspected of poisoning was in fact a very small slight person which again would put her at higher risk of poisoning. As mentioned above, children and older people as well as domestic animals, are considered more vulnerable to poisoning because they have a smaller body mass.

Even as a small child I came across the risk of carbon monoxide. My grandparents would bank up the fire just before going to bed and close off the floor draft to the fire so that the ashes would keep hot rather than put the fire out. Essentially the fire was left to smoulder as slowly as possible by depriving it of air. Banking up would mean pulling the ashes over what was still burning. Something slow burning isn't getting enough oxygen to burn safely and will generate deadly carbon monoxide in preference to carbon dioxide. I can recall the arguments as my mother remonstrated with her in laws over this. This form of smouldering fire is very similar to the burning of a cigarette, in which the tobacco is packed so tightly that little air can get to the strands of leaf. In fact fifteen years ago Googling carbon monoxide would have just brought up a lot of French websites referring in French to carbon monoxide in cigarettes.

These incidents are mentioned to emphasise the fact that increased awareness is likely to lead to much higher records as people realise what has been creating symptoms so easily confused with infections like flu, heart disease and just feeling "off colour". As the oxygen starvation affects the entire body the effects can be felt almost anywhere.

To summarise, carbon monoxide can emanate from many different sources or many different forms of craft, large and small, commercial and non-commercial, maritime and inland. All have potential for rapid build-up of any gas in confined spaces. Detectors for carbon monoxide for use in marine applications may, depending on the type of craft, need to withstand humidity, temperature changes and motion. It is respectfully suggested that surveyors will be able to assist users of craft in whether carbon monoxide detectors should be fitted based on the risks outlined in this article. Similarly the particular features required of the detectors should be apparent from the expected conditions aboard. Most situations afloat will expose a detector to motion, temperature extremes and humidity for which the design of a domestic alarm is unlikely to have made provision.

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Carbon monoxide can emanate from many different sources or many different forms of craft, large and small, commercial and non-commercial, maritime and inland.

Verified Gross Mass? Hmmm.

BY **LEE WARLTIER** MIIMS

On 1 July 2016, one of the most significant changes to affect the container business since its inception came into force. New requirements to verify the gross mass of a packed container were introduced under the International Convention for the Safety of Life at Sea (SOLAS). Knowing the accurate gross mass of a packed container is critical to ensure correct stowage and stacking and to avoid collapse of container stacks or loss overboard. IMO says this is an important safety measure, which is aimed at saving lives and preventing injury and the destruction of property.

Just a couple of months since this the launch of this new requirement, a slightly bemused Lee Warltier, considers where the industry is at with this and what further steps need to be taken as a matter of urgency to embrace the new regulations.

It is extremely worrying when I stand on quaysides around Europe and at ships' side rails in the most prominent of UK container ports and I not only hear, but also see a huge lack of understanding of our global container industry. This saga, potentially an epidemic, came to light in early 2014 when the new CTU code of practice was first put to the ILO and IMO for recognition and approval. Here lies the problem; how many of our cargo surveyors actually knew this was happening in 2014 and more so, how many are aware of the content of the new code and how it affects container transport today? The answer? A disappointing few. In 2016 alone I have emailed the 'new' CTU code to over twenty different surveyors (albeit not all IIMS members, but some readers may now feel a twinge of recognition) who did not even know the 'new' code existed when we were discussing packaging related issues on the quay.

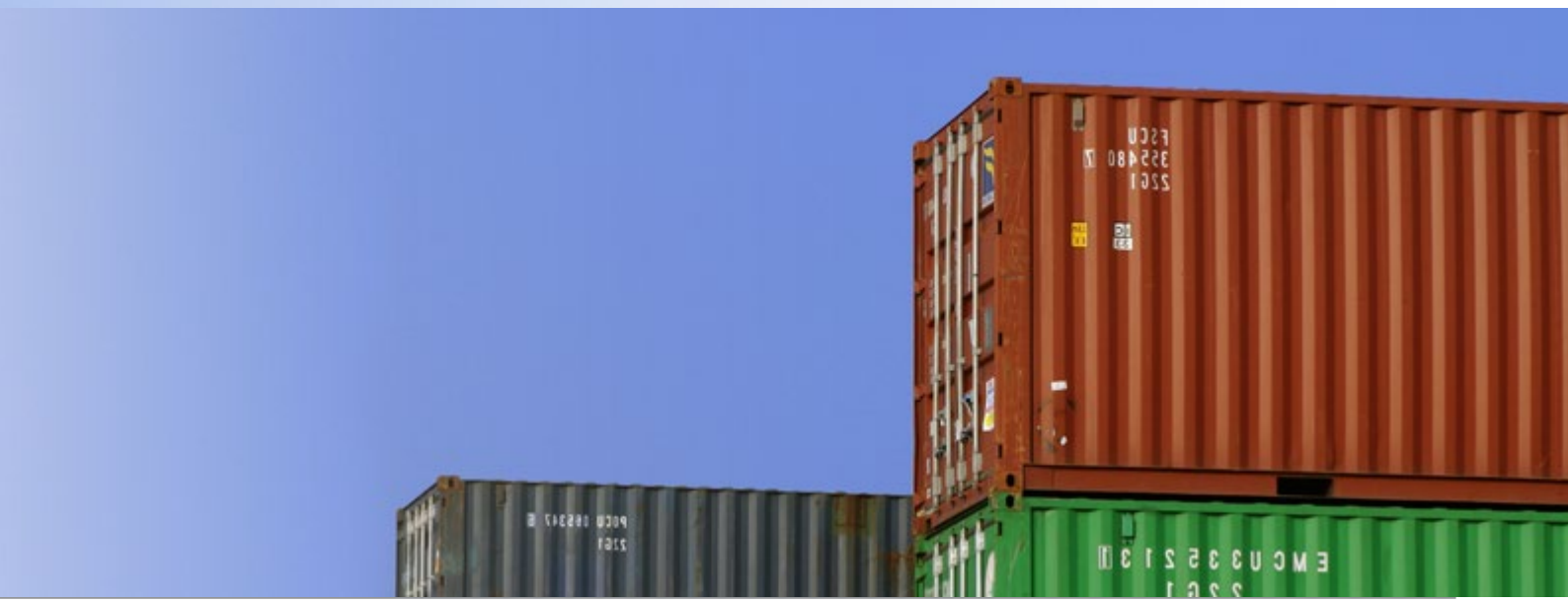
The original blue book guidelines for the packing of cargo transport units were published in 1997 and provided a set of practical measures for ensuring the safe packing of cargo in container, road vehicles and railway wagons. This applied to all operations throughout the entire intermodal transport chain but was only intended as a set of guidelines and as such was not mandatory. For those budding cargo surveyors who have actually read the blue book (I doubt that the number of readers that have a copy within their grasp amounts to double figures) you will be aware of its limitations with regard to the types of commodity shipped and the methods available. Times have changed and technological developments now need to be taken into account. The new code of practice was initially intended as a non-mandatory publication to form the basis for national legislation currently recognised and being prepared for by 163 countries. Effectively this has become one step below a mandatory UN regulation, which is effectively what the international industry needs – that is a kick in the steel box backside in an effort to raise standards across the board. Here's the next problem; despite the courageous work of our friends at ICHCA (the International Cargo Handling Coordination Association) very few industry members (and that includes surveyors) actually know about it, let alone the content and the implications of the requirements. The importance of such legislation only comes to light when something goes wrong and that is the problem and, historically has been. After all, we've all heard it before; 'that's the way we've always done it'. Well not anymore and not on my watch!

The new CTU code is from the outset a vast improvement on the original guidelines and it is divided into the following chapters for consideration:

1. Introduction.
2. Definitions.
3. Key requirements.
4. Chains of responsibility.
5. Transport conditions.
6. CTU properties.
7. CTU suitability.
8. Arrival; checking and positioning of CTUs.
9. Packing cargo in CTUs.
10. Additional advice (relevant to specific cargo).
11. Actions on completion of packing.
12. Advice for receipt and unpacking.
13. Training on packing.

Relevant supporting annexes show a vast improvement for educational purposes and cover related areas such as manual handling, lashing guidelines, working at height, packing and securing calculations, friction considerations, load distribution and practical inclination tests. Phew! It's a lot if you don't know the basics, but already the introduction of the code has seen a rapid improvement in packing and securing quality of the hundreds of containers our office has inspected in the last eighteen months.

So, is the CTU code a book you need to learn? Of course! But it could never be that easy; it does, has already and will continue to change as various updates are introduced,



just to keep you on your toes. Who reading this has heard of MGN534 from the MCA? The UK's version of just one section of reference entitled 'CARGO SAFETY - Guidance on the implementation of the SOLAS VI Regulation 2 amendment requiring the verification of the gross mass of packed containers.' It's all there and the various regulations interlink in a rather annoying way. Especially when updates and amendments are sporadic. Alas! Section 4.2.3 of the CTU code – the Packer's responsibility (and yes there's a bit in there for every party) shifts the whole requirement for container weighing to those that pack it rather than handle it. The CTU code states that "The gross mass of the CTU needs to be verified before any transport operation commences. Incorrect gross masses are a hazard for any mode of transport, especially container ships where stack weights are critical. Therefore, the gross mass verification should be carried out before the unit leaves the premises of the packer. If a certain transport mode deems it necessary that a re-verification has to take place when the CTU is transferred from one mode to another, this is beyond the scope of this Code and may be regulated in the regulations of that mode. Where a cargo is to be transported by road or rail only, the packer need only provide the mass of the cargo and any packing and securing material to the carrier when the tare of the transport vehicle is not known." Section 4.2.12 then states that all parties are now responsible for the provision of the VGM (verified gross mass) of the container in addition to all the other information along with the container number, seal number and contents. Now, many will say that container weights have always been stipulated on bills of lading but how accurate are these? From our own survey inspections at the ports of Felixstowe, Tilbury, DP World London Gateway, DP World Southampton in the UK alone I can confirm; not very.

So let's look at this in basic principles, courtesy of our friends at OOCL and DP World, in order that we can lay the generic terms out as below:

What is VGM?

VGM is the total gross mass of a packed container, which includes the cargo weight, block and bracing materials and container tare. The SOLAS Convention offers two methods to obtain the VGM:

Method No. 1 – Weighing the packed container using calibrated and certified weighing equipment.

Method No. 2 – Calculating the sum of the single masses = Mass of cargo items + all packages (pallets, dunnage, securing material packed in the container) + container tare weight as certified and approved by the national authorized body.

Note that:

1. It is inappropriate and impractical to adopt Method No. 2 for scrap metal, un-bagged grain and other cargo in bulk.
2. If a container with a gross mass exceeding its maximum permitted limit (the maximum payload) as indicated on the Safety Approval Plate under the International Convention for Safe Containers (CSC), the container will NOT be loaded onto a ship even with the proper VGM documentation.

Who is responsible for VGM?

The responsibility for obtaining and documenting the VGM of a packed container lies with the shipper shown on the Ocean Carrier Bill of Lading. The shipper is responsible to provide the VGM to the ocean carrier and/or port terminal in order to meet the SOLAS and local regulatory requirements and/or specific port terminal procedures where applicable.

When did VGM come into force?
The new SOLAS requirements were effective on the 1st July 2016. The shipper must ensure that the VGM is provided sufficiently in advance for use by the Vessel's Master and the terminal representative towards the ship stowage plan. The VGM cut off time should be advised in the form of a Booking Confirmation once available, though it is anticipated that the VGM cut off times will vary from one country/port to another.

So, with the mandatory requirement of VGM now in force who was ready for it? Shipping lines and container terminals across the world have been promoting the prospect of mandatory container weighing with the focus being on shippers to ensure that they have a VGM for any laden export containers that they are shipping out of the UK with a clear message; if a VGM is not provided then the container will not be loaded. Many container terminals have looked to assist in the process (in return for a nominal fee of course) and set up their own VGM provision which is usually done in one of a few ways; this being by weighbridge, reach stacker verification, straddle carrier load cell or gantry crane weight cell during the various stages of handling. All weighing systems must be certified for the task and in order for the container terminal to assist in the process the container needs to arrive on site for weighing well in advance of the vessels arrival time. DP World and Hutchinson ports in the UK insist on VGM declaration a minimum of twenty-four hours before vessel arrival or the container will be cut from the load plan. For those eager shippers with their own certified weighing system a VGM declaration can be made well in advance.

This all sounds like a well established system, perhaps even well oiled. But is it? The TT Club published a seminar update following ICHCAs annual conference in Antwerp in early June stating that with the original deadline of 1st July 2016 for VGM conformance globally, less than 15% of the 162 IMO member states in which VGM regulations will be mandatory had actually issued any form of guidance in procedure, implementation and enforcement. The summary of a Maritime Safety

Committee Meeting with ICHCA in June recognised that VGM would need to be considered as part of not only SOLAS rules but also the ISM Code, IMDG Code and our beloved CTU code and this alone could see updates to the various codes of practice which affect all our work in this ever technical industry sector.

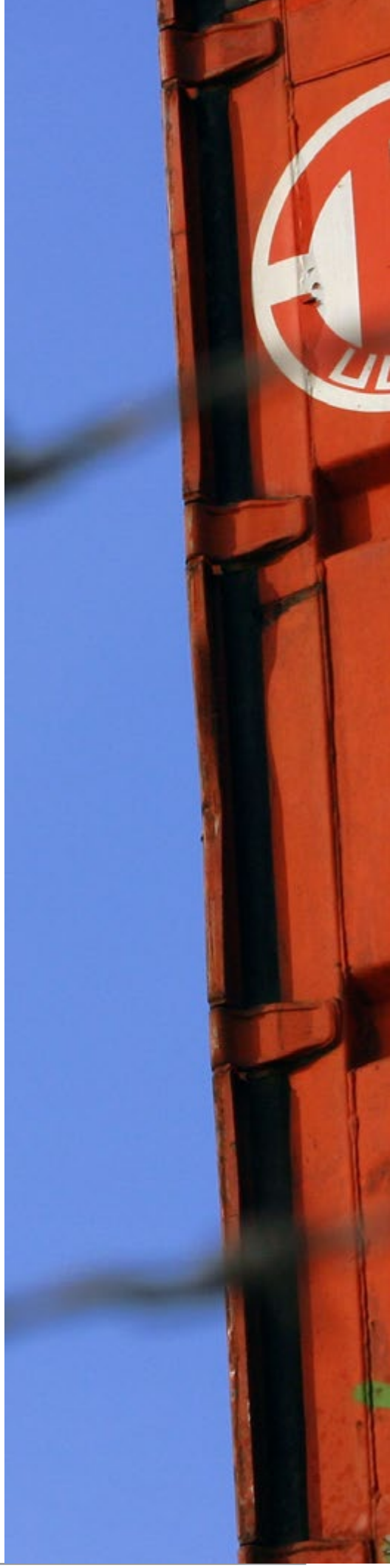
Following on from this we have reviewed the physical implementation of the new rules looking at how both shippers and handlers react to situations that are expected to arise. One example viewed only last week in the London Container Terminal (Tilbury) concerned a single TEU of particularly high value. Due to its special nature the container was delivered by road transport directly to ship with Police escort, private security and budding surveyors in tow. On lifting by gantry crane from trailer to ship an interesting message flagged up on the planners system that the weight was not in accordance with the VGM declaration made twenty-four hours previous. The container was rejected from the carrier leaving its fan club on the quayside feeling somewhat useless. Determined to prove our worth we banged on the planners desk until they would reconsider and pushed the terminal to re-measure the containers weight. Interestingly by straddle carrier the weight was the same as per declaration but by crane it was slightly heavier despite both units being calibrated and certified for the task. After several minutes of finger pointing we achieved our aim and the dejected planners succumbed and allowed the container to load. Gold star for us, though where does this leave the validity of the VGM system when two approved methods of weighing result in different outcomes? The answer is a more regulated, expensive system with margin for error, despite our best attempts to be rid of it. The margin may be small we agree but on an 18,000 TEU carrier is even a 50kg margin of error in every container acceptable?

The VGM system is we agree critical is improving safety on board our container vessels. Historically guesswork and assumptions accompanied by poorly completed bills of lading were the tools for planning stack weights and hold distributions. When we still can't get it 100% right 100% of the time it is easy to understand why stack collapses occur and vessels are placed in jeopardy, the efforts of the combined parties worldwide should assist in the reduction of such. This is potentially yet another case of hurry up and wait to see what the impact will be. However aside from the negatives of additional paperwork and costs the real outcomes will be positive and the enforcement and promotion of the safety of our ships and those who work on and around them. This is where we can all play a part.

Within the surveying world the understanding and awareness of the new code needs to be increased at a higher level and hopefully the modifications currently underway to the IIMS Container Surveying self-study module and potential practical course to accompany this will lay the foundations to this opportunity.

Key references:

- Implementing Guidelines issued by IMO's Maritime Safety Committee.
- Guidelines for Improving Safety and Implementing the SOLAS Container Weight Verification Requirements by World Shipping Council (WSC)
- IMO ILO UNECE Guidelines for the packing of cargo containers 1997.
- IMO ILO UNECE Code of Practice for the packing of transport units 2014.
- ICHCA seminar reports, June 2016.
- DP World Southampton VGM information database.
- OOCL Shipping, VGM information database.
- MGN 534.



Light bulbs, red lines and rotten onions

Debunking the myths of the safety management system

BY **NIPPIN ANAND,**
PhD MSc Master Mariner FNI

In January 2015, the pure car and truck carrier (PCTC) *Hoegh Osaka* developed a severe list on departing from Southampton, and was left stranded outside the port for more than 19 days. The official investigation revealed how decision making became the victim of production pressures. The vessel sailed from port without determining accurately the stability conditions upon completion of cargo. It was a routine practice to leave this task to be carried out once the vessel was out at sea; a practice that appears to be common within the PCTC industry. The weights of the cargoes declared at the time of loading were significantly different from the actual weights; a practice that extends even beyond the PCTC industry. The port captain never felt the need to involve the chief officer in the preparation of the stowage plan. The chief officer, on the other hand, did not feel he had the authority to question the pre-stowage plan.

The preventive actions that followed from the accident should not surprise anyone. A volley of plans, presentations and questionnaires were sent off to the entire fleet reinforcing the importance of compliance with procedures and checklists, and warning the crew against being influenced by perceived commercial pressure. But will these actions actually do anything to improve safety?

Safety Management System

During the 1980s a number of very serious accidents including the *Herald of Free Enterprise* led to the introduction of the International Safety Management (ISM) Code, based on the principles of the ISO standards, and taking a structured, systematic and documented approach to the management of safety and quality. A key requirement of the Code was for every organisation to formally adopt a safety management system (SMS).

And what exactly is the purpose of the SMS? It can be illustrated using the 'Swiss Cheese' model of accident prevention, where several slices of cheese are lined up against each other. The cheese slices represent organisational barriers to prevent accidents. These typically include crew competence and training, emergency preparedness, maintenance of safety equipment, analysis and reporting of accidents, documentation control, effective control and monitoring from the shore side etc.

The holes in the cheese represent noncompliances – instances where rules, regulations and procedures were not followed. These are referred to as noncompliances. When an accident happens, the conventional explanation is that there was a hole in the barrier because rules and procedures were not followed. The purpose of the SMS is to ensure the systematic identification, detection and follow up of noncompliances so that the organisation is better prepared to manage safety risks.

If the capsize of the *Herald of Free Enterprise* led to the introduction of the safety management system, the stranding of the *Hoegh Osaka* has surely reaffirmed that we need more of it. More rules, procedures and checklists to plug those holes! But the existing approach to safety management has proven deeply flawed and dangerously misleading. For the rest of this paper I will illustrate some myths about safety management systems, and then debunk these myths by offering a new view about safety management systems.

> "The existing approach to safety management has proven deeply flawed and dangerously misleading"

SAFETY MYTHS

Light bulbs and the myth of compliance

Light bulbs either light up or they do not. There is no middle way to determine whether they work or not. The underlying philosophy of a safety management system is similar to the working of light bulbs - bimodal and absolute (yes and no), with the sole aim of establishing whether rules, regulations and industry standards have been complied with or not.

But if we apply this bimodal approach to the *Hoegh Osaka*, there are not many instances of noncompliance. The vessel complied with all the statutory requirements and was manned by competent crew who were adequately rested at the time of the accident. The loading computer program was 'approved' and would have worked accurately if the correct cargo weights had been fed into the computer. The remote gauges for tank sounding were not operational at the time of the accident – but this was not necessarily a noncompliance, as long as tank soundings could be obtained manually. It appears that in the absence of compliance risks, the company regarded rectifying the fault in the remote gauges as a low priority. The official accident report stated that: 'In light of the low priority given by the company to repairing the gauges, a similar low priority was assumed by *Hoegh Osaka*'s chief officer, who resorted to estimating ballast tank quantities.'

A defective ballast sounding system that was otherwise compliant with regulations was encouraging 'unsafe practices' onboard.

> “The crew on board the *Hoegh Osaka* had crossed the red line on numerous occasions.”

Crossing the red line

At a maritime symposium on ‘safety culture’, the importance of following the rules and procedures came up, as one would expect. An elderly gentleman stood up and said, ‘Ladies and gentlemen, we are in the business of transporting flammables, remember you must never cross the red line’. What he meant was that the workers should under no circumstances dare to breach rules and procedures. The crew on board the *Hoegh Osaka* had crossed the red line on numerous occasions. The Master did not hold a pre-load meeting with the deck crew and officers. The chief officer underestimated the importance of accurately calculating the stability condition before departure. Instructions on the use of loading computer were not part of the chief officer’s familiarisation checks. The heavy lift cargoes were not secured in accordance with the CSS Code 2011, IMO Resolution A.489 (XII), IMO Resolution A.533 (13), IMO Resolution A.581 (14), IMO Resolution A.581 (14), as amended by MSC.1/Circ.1355, MCA publication Roll-on/Roll-off Ships: Stowage and Securing of Vehicles Code of Practice (and add to this a raft of regulations, circulars and industry standards that even the experts specialising in cargo securing plans may be unaware of).

All of this would have played its part in the accident. But pick a routine cargo operation on any PCTC and chances are that you may find an even more comprehensive list of rule violations. A seafarer with whom I recently discussed this issue stated: ‘If you go to this level of detail, you will find problems in everything I do’. A dozen experts analysing split second decisions influenced by intense production pressures will no doubt establish numerous instances where rules were violated and procedures were not followed. But is this approach really effective in managing safety?

The proceduralisation of everything

The accident investigation report into the *Hoegh Osaka* found that there were a total of 213 checks to be completed by the chief officer for cargo operations alone. This exemplifies a ‘rotten onion’ style of management; one where multiple layers of procedures and checklists can cover up the core issues. These procedures (referred to as ‘objective evidences’ in the language of SMS) make it extremely difficult for an outsider (ie regulator) to gain insight into the core practices and culture of an organisation. I am reminded of a fire damper that was found fully corroded and inoperable during a survey, despite maintenance management plans indicating fully operational firefighting systems in ‘excellent condition’. No amount of processes, procedures and checklists can solve core problems of this nature. If anything, they only make core issues more inaccessible.

To a large extent the problem lies in how safety audits are conducted. The auditor finds a few non-conformances and the company addresses them by adding a set of procedures and half a dozen checks to the SMS. The quest for paperwork to prove safety generates even more paperwork for managing safety. Everything from starting the main engines to switching the kettle on is ‘proceduralised’ and ‘risk assessed’ and the SMS eventually becomes a monster. There is very little foresight and thinking in this mundane ‘check-do’ process.

The *Hoegh Osaka*’s two hundred or so checks for cargo operations alone are a true reflection of this contagion. While the company was busy creating the checks, the chief officer was busy ticking the boxes on the checks, the Master was too busy to verify the checks, the regulator was kept busy assessing the checks, the investigator was busy counting the checks – and with these multiple layers of protection, the safety management system was drifting into failure beneath all these checks. The imaginary world of procedures and checks had drifted too far away from the real world of practice.

'No blame' myth

Most accident investigations' reports and safety audits start by stating that the purpose of the exercise is not to apportion blame or find faults with individuals. In practise, this is far from achievable with our current approach to managing safety. Within the 83 page *Hoegh Osaka* incident report, the term 'chief officer' appears 132 times, and Master 89 times. By contrast, the organisation responsible for the safety management system appears in the report only on 60 occasions. Of the two dozen conclusions drawn from the report, 16 are centred on the vessel and the crew on board. It is obvious that the focus of the report remains on the behaviour and actions of those proximally closer to the scene of accident. Research in accident studies views this tendency of focusing excessively on the actions of those physically closer to the accident as 'proximity bias'.

It is interesting to see how a highly ambiguous and uncertain situation is captured and presented as a structured and systematic report. In an attempt to present an official narrative, the report illustrates a one-sided construct of the entire ordeal. The report suggests the problem begins with an erroneous stability condition and ends with an extremely tender vessel that capsizes just after departing from the port. There is no mention in the report of the last safety audit, management onboard visit, charterer's inspection, or QHSE plans and reports. How could so many entities have missed so many unsafe practices that were so common on board? The voices from the control room and wheelhouse are lacking. The inability to calculate final stability conditions prior to departure is considered a 'drift from fundamental principles of seamanship'. But it should be noted that there is not much rigour in such statements. Under these circumstances, how can we preach the mantras of 'no blame', 'just culture' and 'safety first' to anyone involved in an accident?

A new view of safety management

Having summed up the four popular myths of SMS, there are several questions to be answered.

- First, we place so much faith in compliance with regulations in managing safety – but is compliance really as straightforward (yes and no) as it appears on its face? And if not, can we still make effective use of compliance in managing safety?
- Second, can we think beyond the punitive language of 'rule violations' in managing safety?
- Third, can we ever manage safety genuinely without shaming and blaming our workers?
- And finally, if excessive procedures and checklists are taking us away from our core problems, what can we do to bridge this gap?

The answers will offer an alternative approach to the safety management system (and hopefully debunk some myths).

Purposeful compliance

Technology moves far faster than our ability to control and regulate it. When compliance with 'rigid' regulations conflicts with operations, owners may seek 'alternative compliance' through risk assessments, waivers, and exemptions and even threatening to transfer their vessels to 'business friendly' flag states. What appears a matter of absolutes on the surface is in fact imperfect, convoluted, interpretive, and open to abuse. Many high risk industries have realised the limitations of compliance with rules and regulations and resorted to requiring a duty of care and responsibility from the operators even if this requires undertaking measures beyond compliance. (Of course, this approach is not without its own problems.)

In the case of the *Hoegh Osaka*, it surely made sense to use all available Codes, Circulars and IMO Resolutions to verify compliance with cargo securing when compiling the accident report – except that this was undertaken in hindsight and with ample time (the official report took more than a year to publish). The knowledge surely existed when the vessel

was being loaded, but could it ever be applied as a means of preventing accidents, rather than just identifying noncompliances in the wake of an accident? This is an important question that we need to ask in designing and implementing our SMS.

Compliance must have a meaning and purpose, not be something demanded for its own sake.

Approximate adjustments

In many societies, even the thought of breaching the rules can be intimidating (just as in other societies it is a way of life). After all, rules and procedures are there to assist us. It is unthinkable for many of us to imagine that a vessel could ever sail from port without obtaining final stability calculations. And how could the chief officer tick off checks that were never really carried out? Why, despite clear instructions in the SMS, were tank soundings not obtained on a daily basis? Is this really a case of unreliable seafarers 'falsifying records' and crossing red lines? Far from unsafe practices and a drift away from seamanship, this is exactly how work is performed. If the chief officer had diligently followed the rules and performed all the two hundred or so checks, the vessel may not have departed from the port in time. In many countries, working to rule is a deliberate form of protest.

When the chief officer was selective in following the checklist, it could well be that he was indeed applying seamanship (using his professional judgment, prioritising and making adjustments when faced with time constraints) rather than 'drifting away' from it. What we consider as 'red lines crossed' are approximate adjustments required to succeed at all levels within the organisation. These adjustments are approximate because we cannot write precise rules and procedures for every single task; because those procedures demand resources that may not always be available (for example ample time, competencies); because procedures are underspecified, involving terms such as 'apply good seamanship' that do not specify what is expected from the individual in a given situation. Approximate adjustments have to be made to get the job done. This is how we succeed in everyday work despite demanding deadlines and budget constraints.

The equivalence of success and failure

Do we always need someone to blame in the wake of an accident, or is there an alternative? Let us examine the fine details of the *Hoegh Osaka* accident: a last minute change that made Southampton the first call in the port rotation plan rather than the last; a historical trend of guessing ballast quantities rather than obtaining actual tank soundings; a routine practice of declaring less than the actual weights in cargo manifests; a metacentric height (GM) marginally short of the required stability standards; a mere 0.6 metres bow trim that led to a high rate of turn; and a righting moment that brought the vessel back upright when she developed a heel while turning at a speed of 10 knots, but which became insufficient at a mere two extra knots speed at the next turn in the channel. Note the dynamic nature of certain variables and how the routine practices and approximate adjustments came together. Where is the root cause of the accident? This shows how approximate adjustments and routine practices can sometimes emerge as disproportionate, non-linear outcomes.

> "Pay close attention to whether crucial decisions are made based on incomplete, incomprehensible knowledge and poorly written procedures."

Change any one of those variables and there is a good chance that the *Hoegh Osaka* would have safely exited the channel just as do most PCTCs and many merchant vessels each day. None of us would have noticed the 'deep rooted' problems so pervasive within the industry. On the contrary, the management would have rewarded the employees in their next performance review. Who would not wish for a workforce that could balance safety with quality so well? Is this not how competitive organisations are meant to operate in an aggressive market?
It does not help to explain why we should blame people who exhibit a 'can do' attitude and are willing to go that 'extra mile'. Granted, there are negligent behaviours and unsafe practices – but the boundaries between success and failure seem to have diminished.

Business is safety

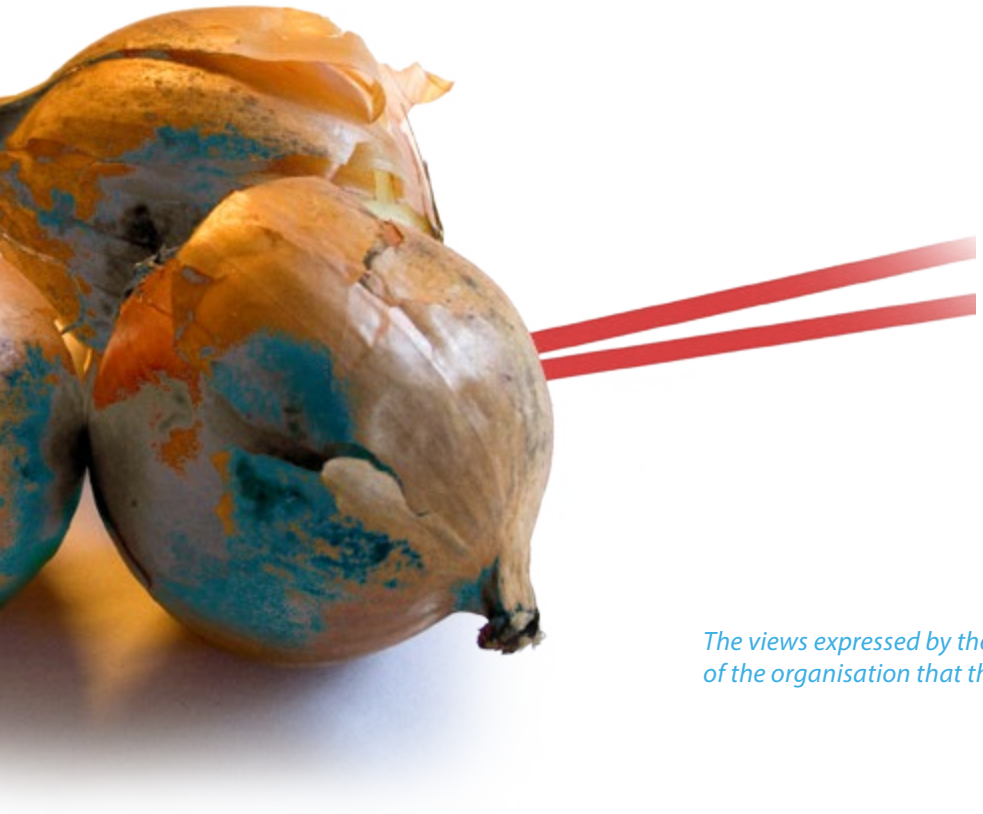
It does not make much sense to react to 'unsafe practices' by replacing a handful of seafarers and introducing more checks, controls and barriers. When something goes wrong, it has usually gone well many, many times before.
That is why people do it! So without understanding why it was done in this way and why it went well, we have no hope of understanding why it went wrong. It pays to observe a successful routine operation with an open mind.

Recall the last minute changes to the port schedule of *Hoegh Osaka*. This is a usual problem for many ships (it was also an issue in the case of the *Herald of Free Enterprise*). Therefore, we should begin by looking at the usual and normal actions in this case. How do crew members adjust to last minute changes to port schedules? When time is limited, how does the crew meet deadlines when getting their jobs done? How does the vessel still manage to depart from the port on time despite a late arrival in port?

Pay close attention to whether crucial decisions are made based on incomplete, incomprehensible knowledge and poorly written procedures. Observe how work is performed when not all crew members are adequately experienced in handling key operations.

Find out how shortcomings in apparently certified equipment are compensated for in everyday work. It is here that we start to appreciate human performance. It is here that we realise the need to remove the unnecessary checks and barriers that impede rather than facilitate decision making. It is also here that we start to realise that we cannot write procedures and checks for every conceivable situation.
And it is here that procedures and checklists start to mesh with the messy world of operations. Here lies an opportunity to genuinely promote a 'no blame' culture and reduce the administrative burdens that are helping neither safety nor businesses.

After more than two decades of futile attempts to implement a 'structured, systematic and documented approach' in managing safety, it should be clear that it does not exist. The case discussed here was chosen not because it was unique or one-off. It only serves as a recent example available in the public domain to expose the fatal fallacy that we call safety management system. Perhaps the time has come to leave behind the light bulbs, red lines and rotten onions and embrace a new view of safety management system. Safety is not a crime against business. Business is safety.



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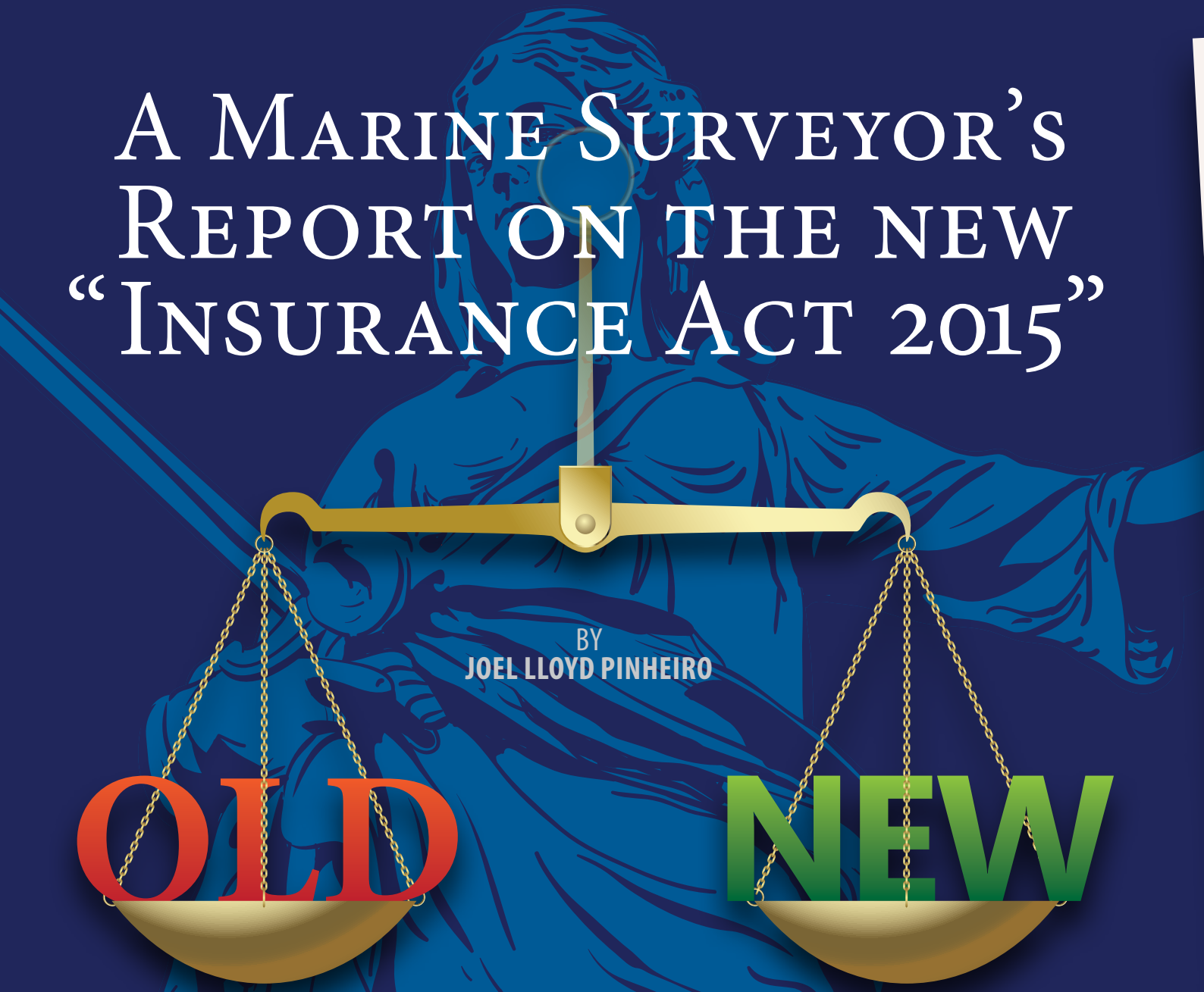
FURTHER READING:
Safety – I and Safety – II: The Past and Future of Safety Management, Erik Hollnagel

The views expressed by the author in this paper may not be the views of the organisation that the author represents.

A Marine Surveyor's Report on the new "Insurance Act 2015"



BY
JOEL LLOYD PINHEIRO

British insurance law largely developed in the 18th and 19th centuries and the most significant piece of legislation, the Marine Insurance Act 1906, was well over 100 years old. Over that time international commerce and the insurance market had changed significantly. In 2006 the Law Commission was asked to consider the existing insurance law regime in the UK to consider whether it was still fit for purpose in the modern insurance market.

The Commission's conclusion was that the current law was outdated and out of step with the realities of 21st century commercial practice. As a result, the Law Commission published The Insurance Bill 2014 which was first put before Parliament in July 2014. The Bill received Royal Assent on 12th February 2015 to become the Insurance Act 2015, but the vast majority of its provisions only came into force in August 2016. The Act seeks to extend reforms made in 2009 to consumer contracts of insurance. The Act makes wide ranging reforms to the law relating to non-consumer insurance contracts which, inter alia, will make it harder for insurers to avoid claims as a result of technical breaches by the insured.

Joel Lloyd Pinheiro, Marine Surveyor and Consultant for Quest Marine LLC considers the changes...

The New "Insurance Act 2015"

1.0 Instruction:

This survey was carried out on a 'without prejudice basis' in order to assess the nature, cause and extent of changes that were made to the "Marine insurance act 1906", as compared to the "Insurance Act 2015".

2.0 The Survey and Reporting:

This survey and report provides an independent opinion of the surveyor, based on his review of information accessed by him with regard to the two (2) Insurance acts and various comparative information, available from other sources, including the internet.

3.0 General details:

The United Kingdom Law Commission published "The Insurance Bill 2014" which was first put before the UK Parliament in July 2014. The Bill received the Royal Assent on 12th February 2015 to become the "Insurance Act 2015". However, the vast majority of its provisions will only enter into force on 12th August 2016, to allow the market time, to adjust its practices.

4.0 Background:

The British insurance law was largely developed in the 18th and 19th centuries and the most significant piece of legislation, "The Marine Insurance Act 1906", is now more than 110 years old.

In the last 110 years, international commerce and the marine insurance market have changed significantly. In view of the above, the UK government introduced a new act called the "Insurance Act 2015".

This act applies to all commercial contracts of insurance and variations to existing contracts of insurance, from **12 August 2016**.

Note: The act is no more called the "Marine Insurance Act", but is called the "Insurance Act".

5.0 Importance of the Act to the World's Maritime fraternity:

Marine insurance, as it is known today, originated in London. Therefore, London continues to remain the pre-eminent centre for Marine Insurance. Most marine insurance deals are transacted with companies like the Lloyd's syndicates and protection and indemnity (P&I) clubs in London, as compared to anywhere else in the world. London currently has the largest share (approximately one third) of the global insurance market, ahead of the USA, Japan, Germany and France. P&I clubs continue to provide the majority share of the world's shipping fleet with insurance cover against legal liabilities to third parties.

All contracts of insurance, re-insurance and retrocession, which will be concluded after 12 August 2016, are governed by English Law and will be subject to the Act. Moreover, all variations to existing contracts of insurance, reinsurance and retrocession which are concluded after 12 August 2016 will be governed by the Act.

To determine whether a contract of insurance will be subject to the new Act involves two subsidiary questions: (i) is the contract governed by English Law? and, (ii) when was the contract concluded?

Further, it may be highlighted that eight (8) of the Clubs in the International Group (IG) are affected by the new Act because their Rules are subject to English law. However, in the interest of continuity across the wider International Group (IG), the consensus amongst the eight IG Clubs is to contract out of certain aspects of the new Act.

6.0 Surveyor's Findings:

The Act makes it harder for Insurers to avoid claims as a result of technical breaches by the Insured. The Act is designed to update the statutory framework in line with best practice in modern insurance market. We noted that the Act will make five (5) main changes, when compared to the current law (Marine insurance act 1906):

6.1 Duty of fair presentation

- Insured's pre-contractual duty is now re-characterised as "the duty of fair presentation", but retains the core elements of the duty of utmost good faith.
- Previously, either party could avoid the insurance contract if the other failed to act in accordance with 'utmost good faith'.
- New requirement mandates that the Insured's risk presentation to be reasonably clear and accessible.
- Insured may fulfil the duty of fair presentation if it discloses sufficient information to put a prudent Insurer on notice. However, the Insurer is open to make further enquiries to ascertain circumstantial evidences that demonstrate merit of the case.

Note: The new Act replaces the Insured's current duty of disclosure with a requirement that the insured must make a "fair presentation of the risk". This will mean that Insurers no longer have the right to avoid an insurance contract for breach of the duty of utmost good faith. The view is that a fair presentation and a professional assessment of the risk are of mutual benefit to the Insurer and the Insured. The Act creates a positive duty of inquiry for the Insurer too.

6.2 Knowledge of Insured and Insurer

- Law governing what is known to an Insured and an Insurer (for the purposes of defining what must be disclosed) is substantially reformed.

- Introduction of new concept of what an Insured ought to know, namely : anything that should reasonably have been revealed by a diligent search of information (section 4(6) of the Act). This may increase the burden on Insureds.

- New exception to the Insured's knowledge : confidential information obtained by the broker in its business relationship with a third party, not connected to the insurance.

Note: When deciding what an Insured knows, what matters is the knowledge of senior management (which will include the board of directors but also those who play significant roles in the making of decisions about how the Insured's activities are to be managed or organised) and of those responsible for arranging the insurance which matters (blind-eye knowledge is included). An Insured must carry out a reasonable search for information, and what is reasonable will depend on the size, nature and complexity of the business.

An Insurer "ought reasonably to know" something if it is known to an employee/agent who ought reasonably to have passed it on, or relevant information, which is readily available and held by the Insurer (section 5(2) of the Act). An insurer will also be presumed to know things which are common knowledge, or which, an Insurer offering insurance (of the class in question) in the field of activity in question, would be expected to know in the ordinary course of business.

6.3 Warranties:

- Breach of warranty will no longer permanently discharge Insurer's liability. If the breach of warranty is remedied prior to loss, cover will remain in place.

- Breach of any term which, if complied with, would tend to reduce the risk of loss of a particular kind, or at a particular location/time, cannot be relied on by Insurer to reduce/extinguish liability. If the Insured proves that the breach could not have increased the risk of the loss which actually occurred in the circumstances in which it occurred.

Note: One of the major reforms in the Act has been the re-classification of warranties. Currently, under the Marine Insurance Act, a breach of warranty by an Insured, in the insurance contract will entitle the Insurer to treat the contract as it end from the date of the breach. However, under the new Act, a breach of warranty will only suspend, rather than discharge, an Insurer's liability to pay a claim. This suspension will apply from the moment of the breach of warranty until the breach has been remedied by the Insured, assuming the risk underwritten is essentially the same.

6.4 Contracting out:

- In Business Contracts, the parties may contract out of any provisions in the Act, except for the abolition of basis clauses.

- Contracting out is subject to requirements that (i) the contracting-out clause is brought to the attention of the Insured, or its agent; and (ii) that the clause is clear and unambiguous as to its effect.

- Part 5 of the Act prevents an Insurer from contracting out of its provisions, if the effect of placing an insured party in a worse position, than they would have been in, under the provisions of the Act

Note: In other words, business insurers cannot expect to restore the current position and carry on "business as normal" simply by inserting a clause into a policy to the effect that the changes in the new Act (when it comes into effect) do not apply. Instead, insurers will need to identify each and every change which they do not intend to apply and cater for an opt-out for that change separately in the policy. It will probably be best if Insurers focus on what is truly important to them, and set out the consequences of breach of any policy terms.

6.5 Fraudulent Claims:

- Under Section 12 of the Act, an Insurer will have the option of terminating the contract from the date of the fraudulent act (not the discovery of it), without any return of premium.

- The Insurer will not be liable to pay any part of a fraudulent claim and may recover any money paid in respect of that claim prior to discovery of the fraud.

- In the event of a fraudulent claim by one beneficiary under a group scheme, cover for the innocent beneficiaries is not impacted.

- The Insurer is not liable to pay fraudulent claims. This also includes any parts of the claim which are genuine. For example, if an insured has in fact suffered loss, yet fraudulently exaggerates some aspect of the claim, the Insured will forfeit the entire claim. However, previous valid claims are unaffected.

Note: Previously, in the event of fraud, an insured party would forfeit the whole claim and insurers could also avoid the whole contract. Part 4 of the 2015 Act now sets out a clear statement of insurers' remedies in the event of fraudulent claims brought by policyholders.

7.0 Conclusion:

As with any new legislation, there will be initial uncertainty over the interpretation of new concepts and the changes introduced.

In terms of the other jurisdictions enacting or considering similar legislation, particularly Hong Kong, Singapore and Japan, this has yet to be announced. But it is widely perceived that new legislation will happen once the UK insurance market starts implementing the new Act.

Fifty Shades of Insurance: Chapter 10

INNOVATION?

ALICE THROUGH THE LOOKING GLASS?

Many of you know Lewis Carroll's "Through the Looking Glass". In it there are these words:

"'The time has come', the Walrus said, 'to talk of many things - of ships and shoes and sealing wax - of cabbages and kings'".

Lord Denning

We hope you spend some time with us today to "dally" on some of the greatest innovations of recent times...

We hope you spend some time with us today to "dally" on some of the greatest innovations of recent times. As we wind our way through the path we hope your mind will wander and consider the far reaching effects on all of us.

Innovation and Lord Denning are synonymous; sometimes controversial but definitely innovative; probably one of the most famous and influential judges and a champion of innovation of law that affects you and me as individuals and in business.

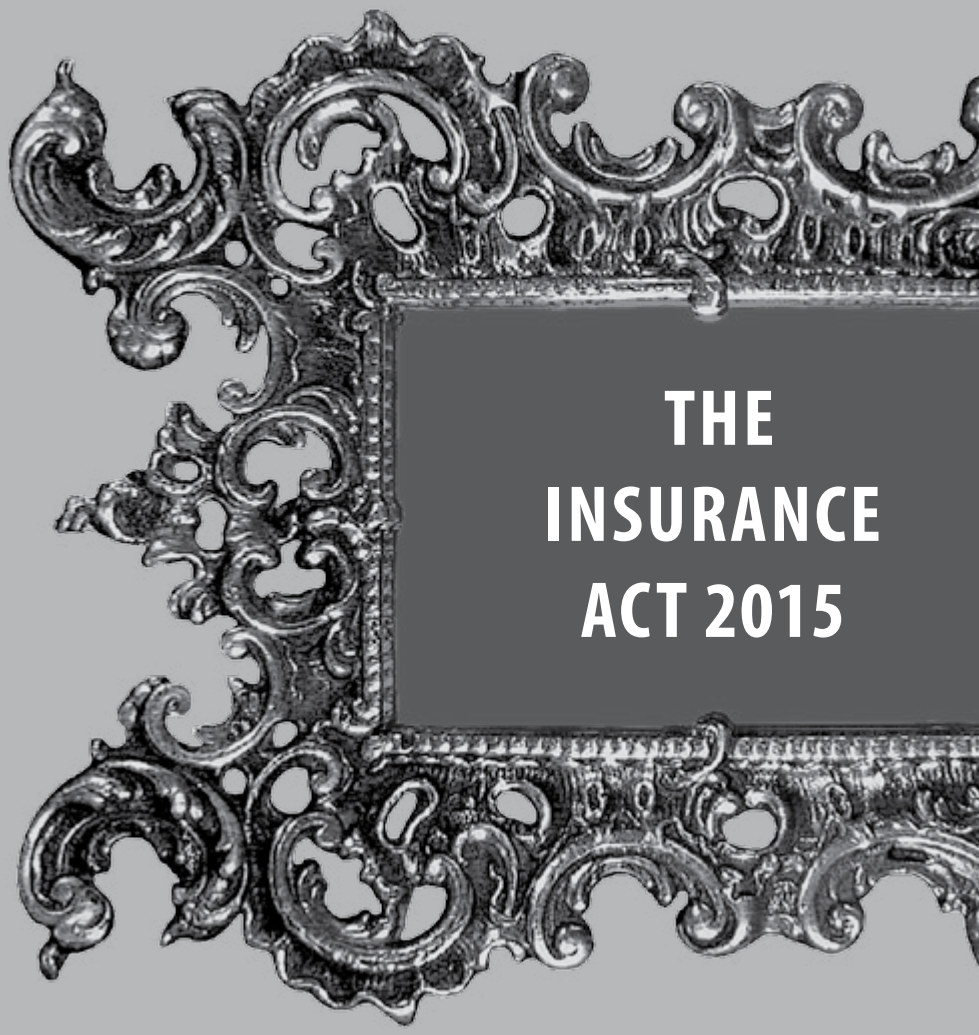
Today we are going beyond the immense changes made by Lord Denning and are in to the 21st Century, in fact 2016, and the effects of what we believe are the two most important Acts that have come into force this year – Third Parties (Rights Against Insurers) Act 2010 and The Insurance Act 2015.

Today we only have time to "touch on" the rudimentary elements of these Acts; sufficient hopefully to "whet" your appetite to read our further articles on the fascinating subject of innovation, Acts and how they affect you.

THIRD PARTIES (RIGHTS AGAINST INSURERS) ACT 2010 – SOME ASPECTS

Before the change in law the old 1930 Act aim was to protect insurance proceeds from the effects of an insured's insolvency. It was not straight forward, the company had to be resurrected and it did not reflect the current trading world although it did provide for automatic transfer of an insured's rights to a third party on the happening of any one of a series of specific insolvency events. The new Act retains the automatic transfer of rights to a third party that qualifies to proceed but enables third party's to pursue their claim in a single set of proceedings and makes it easier to find out information about the insurance policy from an early stage and has expanded the list of insolvency procedures that are included under the new Act to reflect the changes in the insolvency law since the 1930's.

- If a person decides to voluntarily dissolve a company to avoid a liability you have the right to bring an action direct against insurers now which was not possible before
- You only have to issue one set of proceedings against insurers if you wish
- The declaration will bind an insurer
- The transfer rights are not subject to any conditions that require the insured (dissolved/insolvent etc.) to provide information or assist insurers



WHAT ABOUT THE INSURANCE ACT 2015? – SOME ASPECTS

The 1906 Marine Act gave the fundamental principle of utmost good faith which placed the onus on the insured when presenting their risk for insurance. The new Act replaces utmost good faith with "a duty of fair presentation" to prompt transparency and improve the customers journey along the path of obtaining insurance and hopefully when a claim arises.

- Non-Disclosure/ misrepresentation
  - o Providing an insured discloses sufficient information to put a prudent underwriter on notice that they need to make further enquiries it is up to the underwriter now to do so – quite a change!
  - o An insured is not obliged to disclose:
    - anything that diminishes the risk
    - information already known to the insurer (such as information existing on claims files)
    - anything which the insurer ought to know
    - what insurers are presumed to know
    - or if an insurer has waived the need for certain information
  - o Where a fair presentation has not been made then the remedy an insurer can apply changes from the single 'all or nothing' principle of avoidance of the policy to a response that varies depending on whether or not the breach of fair presentation was deliberate or reckless.
    - 1. Deliberate/reckless allows insurers avoidance of a policy, refusal of all claims and retention of customer's premium (just as previously).
    - 2. Not deliberate/ reckless requires a proportionate remedy

- Basis of The Contract Clause
  - o It is no longer possible for insurers to convert the proposal information into warranties on which they can rely

- Warranties
  - o Under previous law, breach of a warranty in an insurance contract automatically discharged the insurer from liability from that point onwards, even if the breach was subsequently remedied or completely unrelated to the type of loss occurring.
  - o Under the new Act, breaches of warranty can be remedied (if it can) – cover is suspended for the period during which the warranty is not complied with. An insurer will again be liable for losses that take place once a breach of warranty has been remedied, unless the loss is attributable to something happening after the warranty was breached and before it was remedied

That is all for now but please wander a little more with us in our next article; perhaps even through the looking glass...

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Paul Homer *HonFIIMS* has been a stalwart member of IIMS for many years. He has also served as a member of the IIMS management board and is a current Director of the Institute's subsidiary, the Marine Surveying Academy Ltd. Paul also continues in his role as IIMS Director of Standards, the first port of call when a complaint about a member is received and requires further investigation.

Paul was recognized for his services to the organization when he was given the *Outstanding Contribution to the Yacht & Small Craft Surveying Industry Award* at the recent IIMS Silver Jubilee Awards in London.

A day in the life of Paul Homer

Paul is in conversation with Mike Schwarz...

Introduction: How did you get into boat surveying Paul?

Initially, I started work in the motor trade and took an apprenticeship with Rolls Royce and then ran my own garages. This was where I gained my engineering knowledge.

After a number of years and following the breakup of my first marriage, I was employed as a trouble shooter for various firms and then settled as accountant, personnel manager and ship's husband for Brittany ferries where I gained inside knowledge of 'big ship' chartering, maintenance and problems.

After five years I then became deputy marina manager and repairs manager to a large Marina group for ten years learning all the 'in and outs' regarding building, repairing and upkeep of small craft. In 1987 I started my own boat surveying business.

Q1: During your time in the marine surveying profession, what have been the key changes you have witnessed?

One of the major changes and developments has to be the new health and safety rules and the new regulations on gas and

electrical safety on boats. Although these rules can sometimes be tiresome, the surveying profession is definitely much safer than in the past. You do not want to be wondering when checking the hull of a suspended boat whether the lifting slings have ever been checked or replaced, or if the craft has been chocked up correctly and placed away from moving vehicles and equipment. I have witnessed several accidents in the past due to poor training and ignorance, for example cranes falling into the river and explosions on boats due to gas and petrol leaks.

Another major change is the new breed of boat surveyors who are now more likely to have entered the profession from a background of books and classrooms rather than practical knowledge in boatyards. This has its benefits, but it is becoming clear that such surveyors leave themselves wide open to problems without the help of a 'mentor' in the early stages due to their limited practical knowledge. This lack of knowledge also means that they are more likely to specialize solely in GRP craft or steel. Very few new surveyors feel confident enough to survey wooden or concrete craft in their early years whereas older surveyors would survey all types of craft due to their boat building and repairing background.

Q2: As Chairman of Standards at IIMS for a long time, you have seen and heard it all over the years. What are the key issues that surveyors need to be mindful of in an ever increasingly litigious world, especially when faced with a serious complaint?

I would say that the most important point is to answer any complaints very promptly before the situation gets out of hand. A minor niggle can become a big problem if the client looses confidence in the whole report due to a lack of cooperation from the surveyor following a small omission or error. It is likely that if the client does not get a fast response, he will employ a new surveyor to re-check the boat who will no doubt find things to cast aspersions on the original surveyor and his report. Before you know it the 'nice' client has taken legal action against you. A £200 payout to rectify a minor problem, or to keep the peace can then escalate into thousands of pounds and your reputation is torn to shreds (so pay up and shut up).

Q3: How important do you believe it is for a marine surveyor to continue to develop and enhance his/her skills and how might they best do so?

It is always very important for all surveyors (old and new) to keep up with the latest ideas, knowledge and technology as these are all changing at a pace. The IIMS and many other marine associations all offer seminars, meetings and conferences. This is the best way to gain knowledge and to earn your CPD points. All new surveyors would also benefit from taking part in practical work shops (eg. IIMS small craft working groups) until they can gain enough knowledge through their own experience.

Q4: Please give readers your three top tips for writing a great report.

1. Accuracy. I see lots of reports that are very inaccurate. Don't make silly mistakes by not checking your report before sending it out. If you use templates don't leave in information relating to another craft. Make sure the information you have received on the craft is correct. Do your homework.

2. Clear style. Make sure your report can be easily understood by the layman. Use simple positive wording that cannot be misinterpreted. Do not make the report too technical and confuse your client.

3. Presentation. A report should be a written document with a few pertinent photos if required but not a picture gallery. Remember, a picture may show the item you are explaining but may also show something you have not reported on, (perhaps a corroded pipe) leaving you wide open to a potential claim.

Q5: What was your most challenging survey and why?

I once surveyed a Sealine F42 near Venice, in a temperature of minus 14, which was completely frozen in 50mm of ice and had to be broken out before it could be craned ashore. Luckily for me, a Fairline Turbo 36, two pontoons away from us, was also being surveyed that day. This surveyor drove his boat as an ice breaker to the craning pad freeing us at the same time. The gelcoat of his boat was heavily damaged (which he stated in his report without mentioning the cause). I was then able to take the craft I was surveying to the craning pad without any damage. Once out of the water, the hull iced up again immediately making scraping for examination extremely difficult. Checking the underwater gear was also a nightmare as this was frozen up and my moisture meter did not appreciate the low temperatures.

Q6: As you look back over a long and successful career in marine surveying stretching back many years, what two pieces of advice would you offer younger, aspiring, up and coming surveyors?

1. Keep your eyes wide open. Be very observant. Surveying is 80 percent visual. Also, write up your report as soon after your inspection as possible otherwise you may forget some of the faults, or be inaccurate in your reporting.

2. Always be ready to take advice from others - go on all the courses you can to gain experience. Don't be too proud to ask for advice. You're never too old to learn. I'm still learning.

Q7: In an ever changing and increasingly digital world, what do you say should be the purpose of a professional body like the IIMS to its members?

Professional bodies should now be interactive with their members worldwide due to new technology. These days face to face contact is possible through Zoom and Skype video conferencing to solve problems and run on-line courses throughout the world as we do at the IIMS. On-line forums mean members can support each other real time with immediate advice and information.

Q8: Your garden is known by many to give you immense pleasure and is, we are told, immaculate. What is it about gardening that attracts you and what will we find in Paul Homer's garden?

Sue and I find the garden very rewarding. It is one of our main sources of relaxation and very soothing after a hard days work. I wouldn't say it is immaculate but you'll find roses and gladiolas intermingled with fruit trees and fresh vegetables and I do try to keep it tidy with constant hedge cutting and mowing which helps keep me fit. We love fresh produce and eat mainly from the garden during the summer months. I also especially enjoy watering in the evening with a glass of wine in my hand as I do so!

Q9: As well as a love of gardening, we also know you have a passion for France. What is it you find so appealing about that country?

Another great source of relaxation. Good food (lobsters and Charolais steaks), tasty wines and good weather. I especially enjoy driving through France on virtually empty roads - so well maintained and a real escape from our congested motorways in the UK and stopping off at their numerous well equipped 'aires' for picnic lunches. We always enjoy the journey down south to Bormes Les Mimosas, Cavaliere and Nice.

Q10: And finally on the subject of France, do you have a favourite French wine and cheese to recommend?

I'm not one for cheese unfortunately but would certainly recommend sampling the regional wines as these are consistently good quality. The locals always take their own containers to the village shops for refilling which is a good recommendation.

Three delicious wines we tried this year were St-Emilion 'Chateau de Corlat' and 'Francais signature' 2014 - Cotes de Provence and Cote de Nuit (Beaune).

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