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Retrofit risks of ballast water treatment systems

The IMO Convention will apply to existing vessels from 8 September 2019.

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HOW HAVE WE DONE?

Let us know what you think of the latest edition. Contact us at: **signals@nepia.com**

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Technology: the good, the bad and the rather attractive

Recent events in the Strait of Hormuz and the wider region have caused concern to all of us in the maritime industry, not least the crew sailing through these waters.

As ever with these situations, the true version of events is rarely published. In the absence of information, speculation fills the void.

One of the theories surrounding the events is the use of technology to manipulate or 'spoof' GPS signals, leading to a vessel unintentionally straying out of international waters. Regardless of whether this was applied in the Strait of Hormuz, the subject of GPS spoofing is hot and in this issue we ask an expert for an explanation.

Environmental regulation dominates the news again and is likely to do so for many years. We continue with our look at the 2020 sulphur cap with two guest articles. The first concerns enforcement in the United States and the second considers a bunker supplier's view.

We look at ballast water regulations in more depth, paying particular attention to the risks associated with retrofitting treatment systems to existing ships. These risks can have charterparty implications and one of North's expert FD&D lawyers explains why. We also take the opportunity to introduce our new comprehensive free-to-download ballast water guidance.

Elsewhere, the human element comes into focus. The role of 'human error' in incident investigations is considered and how it is so much more than simply saying an individual made a mistake or didn't follow an instruction. This is followed by a brief study into an incident where lives were lost when CO_2 was accidentally released.

There are a couple of articles that should interest our lawyer readership. We look at the Singapore Convention on Mediation and the limitations of the WIPON provision.

Finally, some of you might have noticed a change in how we look. September saw the launch of our new brand and we hope you like what you see. It's not just new clothes, we have a brand-new website and are proud to introduce GlobeView, which is our new geographical information portal. Find out more inside.

By Alvin Forster
Deputy Director (Loss Prevention)

Tech tackling dangerous goods cargoes

The frequency of container fires has been a long-standing concern in the shipping industry.

The TT Club recently reported that on average a fire is reported on a container ship every 60 days. The events in Tianjin back in 2015 show that this is not a problem confined to vessels – ports are also at risk. Wherever a container fires occurs, the outcome can be catastrophic.

The causes of these fires are not always established. The evidence is generally lost in the rages of fire. But it can be confidently said that mis-declared and undeclared dangerous goods carried within the containers is at the centre of this problem.

A complex problem is never solved by a simple answer. There are numerous initiatives being explored by different parties to tackle the risks associated with carrying dangerous goods cargoes, ranging from risk-based stowage to cargo booking alert systems and improved fire-fighting arrangements.

One initiative underway is using blockchain technology. It may seem that in recent years blockchain has been extolled as the answer to all our problems. But key features of blockchain include its ability to provide transparency in the supply chain and the ability to display changes quickly and reliably to all involved. This could prove useful when we think of some of the fundamental problems when shipping dangerous goods by sea.

Exploring blockchain

Shipping dangerous goods relies on effective and reliable exchange of information throughout the chain – from shipper to carrier to receiver and all those in between or on the side lines. The current method is slow, inefficient and prone to errors. This is further complicated if the cargo changes hands during shipment.

A new consortium has been launched to explore how blockchain could help. Maritime Blockchain Labs (MBL), a subsidiary of Blockchain Labs for Open Collaboration (BLOC), is running a demonstrator project which is scheduled to run until October 2019.

They are examining the use of blockchain to improve the tracking of dangerous goods cargo. Marc Johnson, Chief Sustainability Officer & Director of MBL, tells of their vision "To reduce the occurrence of misdeclaration of dangerous goods resulting in safety risks such as fires, and personal exposure to hazardous materials aboard ships".

The demonstrator is focussing on booking processes, approvals and information flow processes associated with dangerous goods. This should significantly improve the verification and traceability processes as well as digitising the all-important 'know-your-customer' (KYC) obligations.

How could blockchain technology help?

As blockchain is a shared tamperproof ledger that records the entire history of transactions, used in the right context it can make information exchange quicker, safer and easier. Advocates of blockchain say that in addition to streamlining the process (and saving costs), it provides a high level of visibility and transparency.

Let's look at how this could apply to carrying dangerous goods cargoes. A recognised ploy of some shippers is to declare the cargo as non-dangerous at time of booking but then amend it at the very last minute to declare that it is in fact a dangerous goods cargo.

The shipper hopes that the changes are not processed in time and the carrier fails to be informed at loading, therefore carrying the cargo as if it were non-dangerous. But using a system based on blockchain, the more timely and transparent exchange of information could result in the carrier being better positioned to make the necessary changes and compliance arrangements.

A further benefit is that all of the data related to the nature of the dangerous goods cargo is stored in one place and is immediately accessible to any permissioned party participating in the transaction. This can include material safety data sheets (MSDS) and emergency response procedures.

Tackling wilful misdeclarations

The tamperproof qualities and transparent nature of blockchain are clearly positive. However, blockchain alone cannot solve the fundamental problem of an unscrupulous shipper wilfully mis-declaring the cargo at time of booking.

Marc Johnson is candid about this and told us that MBL recognises that a blockchain-based platform in and of itself will not fully alleviate all the issues the industry currently faces. But MBL see great benefit in making better use of purpose-built remote sensors and devices, that provide actionable in-transit information about the location, condition, and security of the goods being shipped and to securely communicate with the platform to safeguard against any inconsistencies in the cargo declaration, whether intentional or not.

By Alvin Forster
Deputy Director (Loss Prevention)

FIND OUT MORE

Thanks to MBL for their input into this article. Find out more about their projects at: www.maritimeblockchainlabs.com

Incoterms 2020

The ICC has published the latest version of its Incoterms for use in domestic and international sale agreements.

Basics of Incoterms

Since 1936, the International Chamber of Commerce (ICC) has published a set of three-letter trading terms for use in sale and purchase contracts. Known as 'Incoterms', these deal with the obligations between buyer and seller.

Incoterms consist of 11 three-letter trading terms grouped as follows:

- **C rules:** where the seller arranges and pays for carriage to a named place, which indicates the destination of the goods (e.g. "CIF Shanghai Incoterms 2020")
- **D rules:** where the seller arranges and pays for carriage to a named place, which indicates the destination of the goods and the place of delivery (e.g. "DAP 1 China Road, Shanghai Incoterms 2020")
- **F rules:** where the buyer pays for and usually arranges carriage
- **EXW (*ex works*):** where the seller delivers to the buyer from the seller's premises.

In the D, E and F rules, risk passes from seller to buyer at a named place, which is where the goods are legally 'delivered' under the sale contract.

Each Incoterm carries with it a series of obligations on both the seller and the buyer. These may address the obligations of each party, such as:

- delivery of goods
- transfer of risks
- arranging and paying for carriage
- insurance obligations
- procuring of transport documents
- providing proof of delivery
- arranging export/ import clearance
- goods checking operations
- the giving of notices.

These definitions of the obligations on the seller and buyer apply only where Incoterms are explicitly referenced in the sale contract. Many three-letter trading terms – for example, 'FOB' and 'CIF' – have a legal meaning which is independent from and varied by the Incoterms definitions.

Incoterms 2020

In September 2019, the ICC published the latest version: Incoterms 2020.

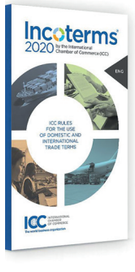
The changes made to Incoterms 2020 since the 2010 edition are largely presentational and clarificatory. The substantive changes include:

- A change to the FCA (*free carrier*) term. Popular in the container trade, under which the seller legally delivers the goods to the buyer before they are loaded onto a ship and so may not receive a bill of lading from the carrier, which it requires to obtain payment under a letter of credit. The 2020 FCA Incoterm now contains an option under which the buyer agrees to instruct the carrier to issue the bill of lading to the seller.
- Under the CIP (*carriage and insurance paid to*) term, the seller must now obtain an increased level of cargo insurance. Under Incoterms 2010, a CIP seller had to purchase cargo insurance on Institute Cargo Clauses (C) terms, which provides cover for a limited number of risks. Under Incoterms 2020, a CIP seller must purchase insurance on Institute Cargo Clauses (A), which is an "all risks" policy with some exclusions.
- A number of terms have been modified to allow the seller or the buyer, as the case may be, to perform the carriage itself.
- All Incoterms now contain an express allocation of the responsibility for security-related obligations.

Incoterms are not often included in contracts of carriage, but instead apply under many underlying sale contracts which underpin international trade.

It is sensible for buyers and sellers to specify which edition of Incoterms are being adopted (e.g. "Incoterms 2020").

By David Richards
Deputy Director (Cargo)



EU confirms law on treatment of waste

The Court of Justice of the European Union (the "CJEU") recently confirmed that waste from ships is not subject to the onerous requirements of EU law on transfer of waste.

The legal case arose from the fire onboard the *MSC Flaminia* in 2012. Owners wanted to send her to a ship yard in Romania for immediate clean-up and repair, but the German environmental authorities refused permission on the basis that the vessel contained debris, sludge and fire-fighting water.

The authorities claimed this was waste and therefore subject to the European Union's Waste Directive 2008 and Regulation 1013/2006, which requires extensive documentation, planning and administrative oversight before any transfer can take place.

Owners argued that Art.1.3(b) of the Regulations specifically excepted waste produced on board ships (etc.) later discharged for treatment. The authorities insisted debris from a casualty was not within the exception. The result of this disagreement was that the ship remained in Wilhelmshaven for seven months before it was finally allowed to go to Romania.

The German courts, in proceedings issued on behalf of Owners to recover the resulting losses from the German State, initially supported the authorities but the Munich Landgericht (District Court) then submitted the following question to the CJEU: was waste resulting from a marine casualty within the exception?

The CJEU ruled that it was within the exception. The Directive had to be interpreted purposively and there was no reason to give special treatment to waste resulting from a casualty, especially as the terms of Art.1.3(b) were unqualified.

Within the EU this now hopefully means vessels can get out of ports of refuge quickly for repair and waste can be dealt with expeditiously.

Conti II v Land Niedersachsen (Case C-689/17) [2019] EUECJ C-689/17.

By David Richards
Deputy Director (Cargo)

The limitations of WIPON and the risk of Charterers doing nothing

We are often asked whether a Notice of Readiness (NOR) can be validly tendered outside of port limits. The answer depends on the wording of the charterparty and the specific circumstances at the port in question.

It is important to know that a WIPON clause, which you may include in your charterparty to allow for a NOR to be tendered "whether in port or not" has its limitations. Such limits were discussed in the recent *London Arbitration 13/19* decision.

This decision also reminds charterers of the danger of doing nothing where owners serve an invalid NOR.

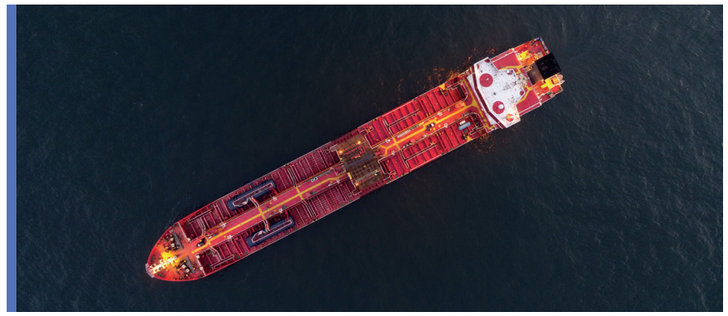
The Facts

The vessel arrived at South West Pass pilot station, Mississippi and tendered NOR. It then entered the Mississippi River, changed pilots and anchored at Point Celeste Anchorage awaiting berth. Shortly after, the National Cargo Bureau ("NCB") Surveyor failed the holds. After further cleaning, the NCB Surveyor passed the holds. Charterers' agents then delivered loading documentation to the terminal, including the NOR. Charterers claimed the NOR was invalid and, therefore, no NOR had been properly tendered before the cancelling date, allowing them to cancel the charterparty. Owners disagreed.

Did the WIPON provision mean the NOR was valid?

The terms of this charter included a WIPON provision which allowed the NOR to be tendered from the usual anchorage outside the limits of the port where the vessel couldn't enter due to congestion. However, the vessel could proceed to an anchorage within the port – which it did (anchoring at Point Celeste Anchorage after taking on the pilot) – and so the Tribunal held that the WIPON provision did not assist owners to enable tender of a valid NOR at South West Pass.

A vessel couldn't *"be considered to have been more than on its way"* when NOR was tendered by the Master at a pilot station in *London Arbitration 19/10*.



The point of picking up a pilot didn't properly represent the point at which the carrying voyage came to an end and the vessel was at the immediate and effective disposition of the charterers in *London Arbitration 8/03*. The Tribunal in *London Arbitration 13/19* said it was *"common for ship masters to tender notices of readiness at the first pilot station at the end of a sea passage, but that was usually done in the mistaken belief that that was the correct procedure, when in fact it was not"*.

Accordingly, even if there is a WIPON provision in the charterparty, this does not mean there is an automatic right to tender the NOR outside port limits. If the vessel can proceed closer to the berth then it should do so, and be at the correct waiting place, before tendering the NOR. Had there been no loading berth or river anchorages available when the vessel arrived at South West Pass and had she waited there, then the NOR would have been valid, subject to the vessel being ready to load.

It was also held by the Tribunal that even if the NOR had not been premature, it was invalid because, under the terms of the charter party, the holds did not pass the NCB inspection. The Master should have tendered a new NOR once the holds had been passed as clean.

The Tribunal highlighted that the owners should have informed the Master of such a charterparty requirement and, likewise, the charterers should have informed their agents.

How did owners' claim for demurrage succeed?

Because the charterer's agents submitted the invalid NOR to the loading terminal, this constituted acceptance by the charterers of the NOR. The greater responsibility in this case lay with the charterers and when they were presented with a NOR they (or their agents) should have formally accepted or rejected it.

Lessons to be learnt

As an owner you should always make sure the Master is aware of the NOR requirements in the relevant charter. We would also remind Masters to keep tendering new NORs "without prejudice" to the last whenever there is a change of position or circumstance.

As a charterer you should make sure your agents are aware of the charterparty NOR requirements and, if you want to claim a NOR is invalid then to officially reject the NOR as invalid. A failure to do so and to continue as if the NOR is valid could lead to you waiving your right to claim invalidity.

By Helen Barden
Professional Support Lawyer (FD&D)

FIND OUT MORE

If you have any queries, or want to know more, then please speak to your usual contacts in the FD&D team.

Singapore Convention on Mediation launched

A new international convention has been launched that aims to help enforce settlement agreements which have arisen out of commercial mediation.

The UN Singapore Convention on Mediation recognises the value of mediation as a method of amicably settling disputes arising in the context of international commercial relations.

The Convention should encourage businesses to mediate cross-border disputes instead of going straight to the courts or tribunals, as it will give the parties greater certainty that the agreements will be enforceable. This may be why some of the large economic powers in the world, including the United States and China, have signed the Convention.

Of course, as with the New York Convention, which recognises the enforcement of foreign arbitration awards, it will take time for the Convention to build up support.

Also, only time will tell how the Convention will work in practice. It will depend on the local laws where the settlement agreement is to be enforced. For example, the evidence that is needed and what the parties may need to produce to enforce an arbitration award under the New York Convention in one country may not be the same in another. Likewise, what a party needs to produce to show the settlement agreement resulted from a mediation within the terms of the Singapore Convention may, in practice, differ from one country to the next.

Don't wait until enforcement

It also seems necessary for the parties who wish to rely on the Convention to address this at the mediation and settlement agreement stage. They must not wait until the need for enforcement. The Convention states that:

"A Party to the Convention may declare that…it shall apply…only to the extent that the parties to the settlement agreement have agreed the application of [the] Convention".

Therefore, it may be wise for the parties to expressly refer to their agreement to the application of the Convention within the terms of the settlement agreement. In addition, as evidence that the settlement agreement arose from a mediation, a paragraph could be included in the mediation agreement, which should be signed by the parties and the mediator, that the parties agree it is a mediation for the purpose of the Convention.

Whether this would constitute sufficient evidence for the purpose of enforcing the settlement agreement under the Convention in all participating countries remains to be seen.

Importance of impartiality

It is also worth noting, in the same way that countries may be reluctant to enforce an arbitration award under the New York Convention where they consider the arbitrator was not impartial, the Singapore Convention on Mediation stipulates that a ground for refusing to enforce a settlement agreement is where they consider the mediator was not impartial. What gives reason to doubt a mediator's impartiality in one country may be different in another.

How the Convention will work in practice remains to be seen, however, there seems to be no reason in theory why it should not be successful like the New York Convention. Also, as per its aim, the hope is that it will encourage commercial parties to mediate disputes where appropriate.

The full text of the Convention can be read here: **https://uncitral.un.org/en/texts/mediation/conventions/international_settlement_agreements**

By Helen Barden
Professional Support Lawyer (FD&D)

Sarah McCann
Solicitor (FD&D)

FIND OUT MORE

If you would like to know more, then please get in touch with your usual contacts in FD&D.

Human error is not a root cause

It is important that we learn from the past. Which is why it is so important that after an incident or near-miss, a proper investigation is carried out and lessons are learnt.

A good quality investigation will identify the root and contributory causes, and this leads to actions that prevent similar incidents in the future.

Unfortunately, standards in incident investigation vary. Some investigations do not go any further than identifying the immediate cause and fail to uncover the real root of the problem. Many conclude with *"human error"* or *"failed to follow procedures"* as the root cause resulting in a crew member subjected to disciplinary action and the addition of a few more procedures into the safety management manual.

This is not helpful. Furthermore, we end up with statements such as "80% of accidents are caused by human error". What does it actually mean?

'Human error' barely scratches the surface of an incident investigation. If someone did something wrong, then it's vital to understand why they did it.

Who, what and why?

Fundamentally, an investigation must establish:

- Who was involved?
- What happened?
- Why did it happen?

Physical and electronic evidence such as documentation, voyage data recorders, CCTV and AIS, can help identify 'who was involved' and 'what happened'.

To explain 'why' someone did what they did, then a fuller picture is needed. It is likely to require interviews and statements from a number of people as well as reviewing company policies and onboard procedures.

Let's return to classic conclusions of *"human error"* or *"failed to follow procedures"* and see how they can be broken down further to provide the real root causes.

Dissecting human error

This essentially means someone made a mistake. It's important to know whether this mistake was:

- An incorrect decision – Did the person make the wrong decision?
- An incorrect action – Was the decision correct but it wasn't carried out properly?
- A lack of action – Did someone fail to do something they were meant to do?

From this, focus can be directed to the factors that affect human performance, i.e. what led to the person making the wrong decision or action.

Reference sources such as the MAIIF Investigation Manual offer numerous factors that could influence human performance. There are too many to include in this article, but it takes into account factors such as the crew's training, fitness, state of mind, as well as onboard management (including safety management systems), shore-based management, living conditions, ship design, weather and traffic. Also considered are external influences such as stevedores, surveyors or agents demanding the crew's time.

All of these factors can affect the crew's ability to perform and can have a detrimental effect on their decision-making.

Violating procedures

Accidents can occur because someone violated a procedure. People break the rules or take short cuts for a number of reasons. These reasons can range from the ignorant to the well-intentioned to the reckless. The problem can only be addressed if the reasons for the violation are understood.

One particular study into the reasons why people violate procedures was developed by Hudson (Shell "Hearts and Minds" Project, 2004) and some of the findings are briefly outlined here:

- *"I didn't know"*: The person was either not aware of or misunderstood the procedure
- *"Everyone does it"*: It is common practice to violate the procedure and becomes automatic behaviour
- *"The procedure is wrong"*: The person cannot do the job according to the procedure as its unworkable so they develop a workaround
- *"I thought it would help the company"*: The person thinks violating a procedure or taking a short cut is in the best interests of the company
- *"It makes my life easier"*: Taking a short cut makes their life easier and could be linked to complacency or boredom
- *"I don't care"*: Reckless or malicious behaviour
- *"I didn't see that coming"*: Rare and unusual circumstances that have not been previously identified

Reaping the benefits

A properly carried out investigation will identify the root cause and a number of contributory factors. Tackling each of these will not only prevent the same type of incident happening again but could also prevent a wide range of similar incident from occurring.

By Alvin Forster
Deputy Director (Loss Prevention)

FIND OUT MORE

Get the most out of your incident investigation. See our loss prevention guidance on Incident Investigation and Root Cause Analysis at: www.nepia.com

2020: Keeping compliant in the United States

In this article, author George Chalos of Chalos Law gives an overview on keeping compliant in the United States.

The shipping industry has been preparing – or perhaps more aptly bracing – for the implementation of the IMO 2020 global sulphur cap.

As the deadline for use of compliant fuel draws near, it is important to consider how the largest environmental regulatory regime in the world, the United States, is likely to treat enforcement.

Enforcing MARPOL in the United States

MARPOL has been implemented (and is enforced) in the United States through the Act to Prevent Pollution from Ships or "APPS". APPS and U.S. regulations apply to all U.S. flagged ships anywhere in the world and all foreign-flagged vessels calling at a U.S. port or terminal or while operating in U.S. navigable waters, the U.S. ECA and/or the Exclusive Economic Zone of the United States. The US government routinely takes direct enforcement actions against the owners, managers and crewmembers of foreign-flagged vessels alleged to have violated MARPOL, APPS and U.S. regulations.

The actions can be administrative, civil and even criminal in nature. As part of its port state authority, the Coast Guard is authorized to review vessel records and documents maintained on board to ensure compliance.

Dealing with violations

Although MARPOL anticipated that port states that discover suspected violations may refer the matter to the vessel's Flag State, the Coast Guard and U.S. government almost always elect to retain the investigation.

Since 1998, the investigation of alleged false records (mostly Oil Record Books Part I, which failed to record discharges of bilge water and/or sludge) regardless of where the actual act of pollution took place, has led to over 200 criminal prosecutions and the collection of nearly US$ 1 billion in criminal fines by the U.S. government.

Approximately 9,500 scheduled port state control exams are conducted by the Coast Guard every year. Since 2015, approximately 80 MARPOL Annex VI deficiencies (such as those relating to bunker fuel sulphur compliance) have been documented by the Coast Guard and over a dozen enforcement actions have taken place.

2019 saw the first criminal prosecution of a MARPOL Annex VI violation, pursued by the Coast Guard and Department of Justice (DOJ). In that matter the owner and operator of a foreign-flagged vessel each paid a criminal fine of US$ 1.5 million for the use of non-compliant fuel (above 0.10%) in the Caribbean Emission Control Area (ECA) and the crew's failure to accurately record the actual bunker transfers and consumption in the vessel's Oil Record Book.

It is reasonable to expect that the Coast Guard will be focused on ensuring vessel compliance with the new global 0.50% sulphur cap starting in 2020 as part of its port state control inspections.

Perceptions in the United States

When analysing the enactment and enforcement of IMO 2020 in the United States, it is critical to be aware of the Coast Guard and DOJ's perception. Senior Coast Guard officials have made clear that it is the agency's belief that compliant fuel oil is not going to be a problem in 2020. The failure to have compliant fuel on board of a vessel will be viewed as a failure of preparedness and not a failure of accessibility of resources. Parenthetically, the Coast Guard motto is "Always Ready."

In addition, the DOJ perceives that there are vessels breaking the rules each day, and strongly believes in its mission to seek out non-compliance and prosecute alleged criminal activity accordingly.

Proving compliance

To successfully demonstrate compliance with IMO 2020 regulations, shipowners and operators must ensure their vessels have the required documentation ready for port state control inspections.

Critical records include:

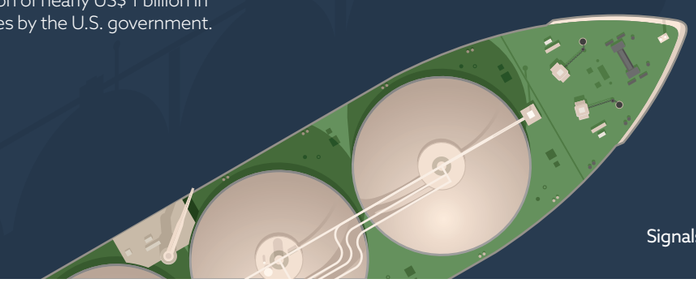
- Vessel bunkering and oil transfer procedures, as well as the preloading plan
- The Declaration of Inspection (a U.S. regulatory requirement anytime fuel/oil/bunkers are transferred to or from a vessel) which is retained for at least thirty (30) days
- Bunker delivery notes (BDN), to be retained onboard for a minimum of three (3) years
- Declaration that fuel conforms to MARPOL Annex VI and does not exceed maximum sulphur content
- Fuel changeover plan
- Oil Record Books (with accurate and timely information properly recorded therein)
- Fuel oil non-availability reports (FONAR)

The best practices for shipowners and operators to avoid any issues during inspections by the Coast Guard is to obey the law and applicable regulations and have good policies and procedures for IMO 2020 compliance in place.

Our grateful thanks to George M. Chalos of CHALOS & Co, P.C. – International Law Firm for writing this article. www.chaloslaw.com

FIND OUT MORE

Read more about the 2020 sulphur cap at: www.nepia.com/insights/2020-vision



2020 Q&A

Bunker suppliers look over the horizon

With the 2020 sulphur cap fast approaching, we asked Owen T. Webber of Oilchart for a bunker supplier's view.

Q What do you see as the biggest challenge for bunker suppliers as we approach 2020?

A (Owen T. Webber) There's been a lot of hype in the market about swings before and after the 2020 change over. What is interesting is the varied stances from different sources. As an independent physical supplier operating in a segmented region, we see turbulence and uncertainty in our part of the market. This requires a positive, can-do approach.

The biggest challenge may be the impact on availability of the different fuels. Other potential issues could be how bunker price increases could impact the credit worthiness of fuel purchasers. We are working hard to educate buyers about the challenges ahead in the market and the transition.

Q Do you see a shift between spot and long-term bunker supply contracts?

A We have not yet seen a trend in the mix of contract versus spot purchases, but this will very much be driven by the strategy of the buyers. Traditionally, our business has been made up of both spot and contract volumes, reliant on the expected flow of fuel oils out of major hubs. The last few months has seen turbulence created in the wholesale market, which in turn has a direct effect on the retail market. The volatility in the market makes it very difficult to forecast price and availability of the different products.

Q How can shipowners protect themselves when ordering bunkers?

A This is quite a difficult question. The needs of buyers are so diverse it is dependent on each individual position and the needs of the vessel. Vessels that tramp have a very different demand profile to those on a liner service.

But in all cases, buyers must make sure they specify correctly the product they want. They should also understand the supply and demand for that particular product in the relevant geographical area.

Circumstances are changing daily, so shipowners should keep a dialogue with their trusted avenues of support. Preparing a strategy that covers more than one eventuality will assist.

Q How will the shift in blend-stocks and changes in refinery processes impact suppliers?

A Recent developments have meant that we are seeing stockpiling which reduces storage availability. This means it now costs more money to store. Notably, we have seen a recent reduction in availability of high sulphur fuels and owners with vessels fitted with scrubbers might want to arrange contracts with suppliers.

The recent events in the Middle East have created extra turbulence in the supply chains.

Q IBIA have suggested that fuel purchasers specify bunkers to a 0.47% S limit. Is this realistic?

A This may be difficult to roll out unless you have specifically contracted at this level with your supplier. The wholesale market is selling at above this level, in general.

Q As bunker barges start cleaning out their tanks to prepare for the new products, will this affect the availability of certain products?

A Carrying multiple grades is nothing new for the market place. We have been doing this for many years and have well-proven processes for managing the different types of fuel.

Q Do you expect to see a rise in compatibility and quality issues?

A In short, yes. The market expectation has grown beyond the standard ISO specifications. Meeting these expectations will be a challenge. As a supplier, we avoid co-mingling of products, we carry out bench blend tests and can also carry out pre-checks on compatibility when samples are at hand.

Mark Smith
Loss Prevention Executive

FIND OUT MORE

Thanks to Oilchart for sharing their thoughts: www.oilchart.com

Read more at North's 2020 Insights area: www.nepia.com/insights/2020-vision

Images: Oilchart

Spoofing at sea

In a world where 'traditional' navigation plays a secondary role to electronic navigation, the importance of ensuring an accurate GPS position has never been more important.

Cyber security has been a hot-topic for several years now, but the number of incidents of reported GPS interference or 'spoofing' is increasing.

Christopher Loizou, VP Maritime of Orolia Maritime discusses both how important it is to ensure your vessels' navigation systems are provided with accurate data and how to protect a vessel from navigating with an unreliable GPS position.

Ensuring Navigational Safety: GNSS Resilience

Since the development of the Global Navigation Satellite System (GNSS) over 40 years ago, position, navigation and timing (PNT) based on satellite input has been vital to many critical systems on board vessels, allowing a very precise determination of location. The maritime industry relies on trustworthy PNT in transport infrastructure, navigation, communications, search and rescue applications, fishing operations and regulation, using a variety of available satellite constellations such as GPS, Galileo, Glonass, Beidou etc.

Cyber-attacks can come in many guises, acting as a route for fraudsters to forge invoices, install ransomware or alter cargo manifests to hide illicit goods. As the threats become more sophisticated, poor cyber security could compromise commercial vessels' safety through interference with navigation accuracy.

As the 2021 deadline for the IMO's 'Maritime Cyber Risk Management in Safety Management Systems' mandate draws nearer, it is all the more important that the entire vessel management ecosystem, from port operations to critical bridge systems, includes protection of navigation by creating a resilient PNT threat detection and mitigation plan.

The value of GNSS

UK Government research in 2017 identified that a five-day loss of GNSS would cost the UK maritime economy over a billion pounds. This highlighted the growing realisation that GNSS as a source of PNT needs to be both protected and irrefutable, leading to the concept of Resilient PNT as a tool to support navigational cyber security.

GNSS signals are the primary PNT reference sources used in navigation, but their signals are very weak when they reach the Earth's surface. They have well-known vulnerabilities and limitations that require protection and mitigation. They can be disrupted by unintentional interference and the unencrypted signal in civilian use is susceptible to attack.

Intentional interference can be the denial of access to satellite signals or 'jamming', so your vessel cannot determine its exact location. Spoofing, also known as advanced jamming, is the creation of additional signals that provide misleading PNT information, so the vessel's position or time reference is no longer accurate.

Resilient PNT

Deploying traditional procedures for loss of GNSS (GPS) is insufficient for threats such as spoofing. An unsecure navigation system would not know its positioning source has been compromised. With the advent of ECDIS and widespread use of GNSS-dependent chart plotters, the risk is accentuated.

The use of Resilient PNT for navigation cyber security, is the meeting of traditional positioning, navigation and timing technology with non-traditional and emerging technology.

Navigation resilience improves the reliability, performance and safety of mission-critical applications, where discrepancy in data accuracy, availability and stability can impact the safety, security and economic viability of vessels at sea.

Navigation Protection Devices (NPDs), such as Orolia Maritime's *M-SecureSync* include a monitoring component, which filters and analyses the received GNSS signals and provides an alert on the bridge if direct interference, jamming or spoofing is detected. *M-SecureSync* offers an additional optional layer of navigation cyber security in the event of interference with GNSS, by switching to an alternative navigation signal – Satellite Time and Location (STL).

STL is available worldwide, operating on the Iridium satellites and provides an encrypted signal 1,000 times stronger than GNSS and resists jamming and spoofing. As the NPD is independent of the vessel's navigation system it can provide a real time indication of alerts and positional discrepancies.

There is now a growing awareness of the vulnerabilities in GNSS but what is not yet clear is what to do about them. There is no silver bullet – no one solution that can overcome the problems – but Orolia Maritime believe a combination of several alternative methods can augment GNSS and provide the resilience necessary for all critical navigation operations.

By Rod Maclennan
Loss Prevention Executive

Christopher Loizou
VP Maritime of Orolia

FIND OUT MORE

Orolia: www.orolia.com/solutions/maritime

Retrofit risks of ballast water treatment systems

The IMO Ballast Water Management (BWM) Convention entered into force in 2017 but at that time it applied only to new vessels. But a new milestone is now upon us – the Convention will apply to existing vessels from 8 September 2019.

From this date, existing vessels have up until its next IOPP Certificate renewal survey to comply. This effectively means that vessels whose keel were laid before 8 September 2017 are likely to need to install an approved ballast water treatment system (BWTS) at some point between 8 September 2019 and 8 September 2024, depending the date of IOPP certificate renewal.

You may ask what's the big deal? New vessels have been complying with the ballast water regulations for the last two years with little fuss. There is a big difference, however, between installing a BWTS during newbuild and retrofitting a system on an existing vessel. On an existing vessel, such a system would not have been considered at time of original build and no dedicated space would have been allocated.

What could go wrong?

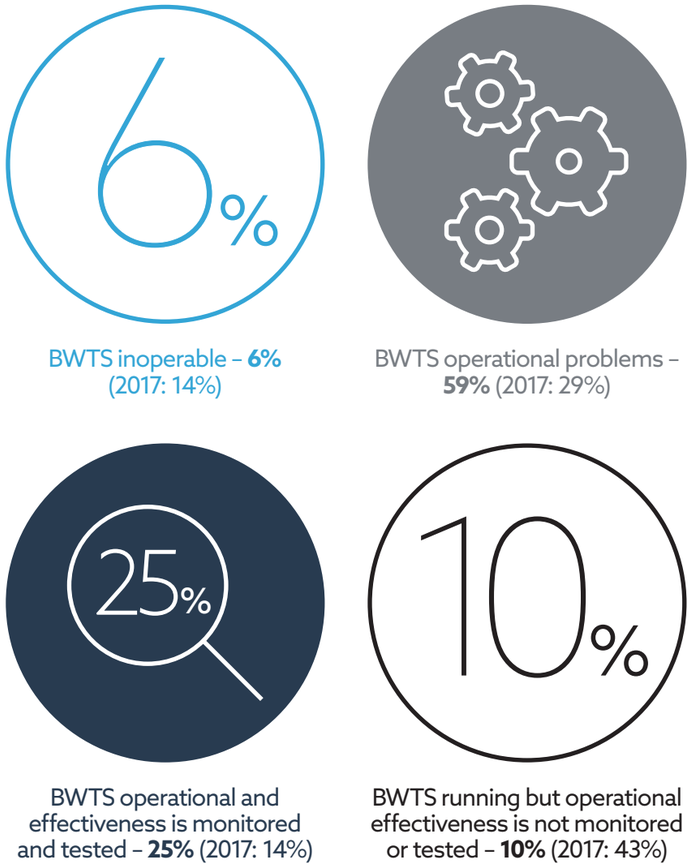
Both the IMO BWM Convention and United States federal legislation (the USA are not signatories to the Convention and have their own rules) impose a discharge performance standard. This means that having a 'type approved' BWTS is not enough. If during deballasting operations the water is found to fail the discharge quality criteria, the vessel could be in violation of the applicable rules.

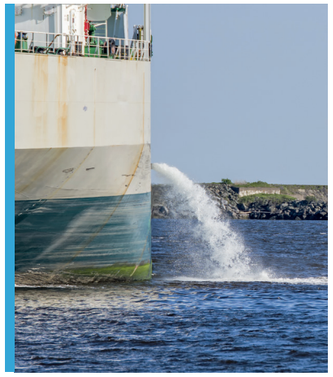
So, it is clearly important that the BWTS is fully operational, reliable and effective.

A 2019 report issued by ABS highlighted significant concerns in the operability and reliability of ballast water treatment systems. ABS reported, worryingly, that over half of the vessels participating in their survey experienced problems.

BWTS PERFORMANCE

Credit data source: ABS





Some of the common problems included unstable sensors, frequent failing of UV lamps, filter clogging and issues when operating in low-salinity waters. The ABS report also states that most IMO and USCG type-approved systems are, to date, not suitable for use when gravity-discharging topside tanks.

Regrowth – a real risk?

Aside from the findings of the ABS report, the subject of 'regrowth' has not gone away. Organisms that survive the treatment process on intake (i.e. ballasting) can find themselves in an environment with an abundance of food, free from predators and can lead to a surge in their population. Concerns on the potential for regrowth within the ballast tank have been raised by a number of parties. This is particularly relevant to those systems without secondary disinfection (i.e. those that treat the water again during deballasting), where the scale of regrowth during a voyage could result in discharged ballast water failing the regulatory discharge performance standard.

Got the power

A vessel is fitted with a power generation plant matched to its expected demand.

So, it is possible that the generating capacity of an existing vessel might struggle with the increase in power demand created by the addition of a power-hungry BWTS. Or, the generating capacity may have diminished over time as wear or poor combustion affects the ship's auxiliary engines.

It is therefore vital that the vessel can cope with the power demands of a BWTS and that it does not require the shutting down of other important electrical consumers, such as cargo gear or reefer containers. If it cannot cope, then this can result in delays to cargo operations and lead to disputes.

Commercial impact of failure

The obvious consequence of a treatment system failing to perform as expected is a regulatory violation picked up by Port State control (PSC) during an inspection. The punishment depends on the jurisdiction, but PSC deficiencies, detentions and financial penalties can be expected.

However, there are other commercial impacts to consider. Some are outlined below:

- *The vessel is not considered to be seaworthy on delivery or cannot later complete a voyage:* The types of substantial damages that may result could include extra expenses to fix an alternative performing vessel, cargo transhipment to deliver to final destination, etc. There is evidently some variance in BWM regulations around the world which could be problematic.
- *A voyage cannot proceed promptly after delivery:* This may cause other sizeable disputes for wasted expenses, fuel consumed, and over who pays for other delay consequences. For time charters, the vessel may be expected to be treated as off-hire if the full working of the vessel is not immediately available which can vary on the case circumstances. For voyage charters, the vessel may be unable to commence laytime (or after commenced, time may not count as laytime or as demurrage) if lost due to delay through non-compliance.
- *Reduction in vessel's ballasting performance:* There is a risk of reduction in a vessel's ballasting capacity following the retrofit of a BWTS, potentially delaying cargo operations. This drop in performance could be due to the system being unreliable or being a poor match for the throughput of the vessel's ballast pumps or additional pipework and filters introducing pressure drops in the system.
- *Increased fuel consumption:* The greater power demands of a treatment system may result in an increased fuel consumption.

If a vessel's performance is impacted following the retrofit of a treatment system, it is therefore recommended that the vessel's description (and any associated performance warranties) is amended accordingly. If the charterparty remains unamended, a shipowner may be exposed to a charterer's allegations of breach of warranty if delays are experienced as a result of the longer time needed for ballasting and deballasting.

No Plug and Play

To ensure a BWTS is reliable and performs to the required standard, it must be right for the vessel. A common message from experts in the industry is that there is no "one size fits all" or a "plug and play" solution.

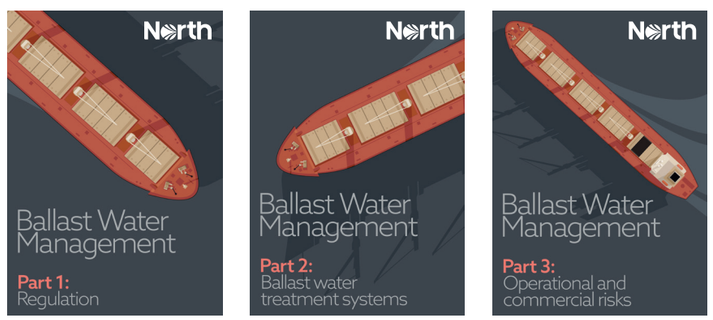
Just as importantly, treatment plant installation projects must be properly planned. A typical project timescale from initiation to commissioning is several months. This requires careful planning of the selection process of treatment plants, lead times of equipment and workforce (or dry dock) availability and system designs for pipelines and electrical power. Selecting the right plant and system for retrofitting on a particular vessel takes careful consideration. The system must be matched to the operational demands and trading pattern of the vessel.

By Alvin Forster
Deputy Director (Loss Prevention)

Jim Leighton
Senior Solicitor, England & Wales (FD&D)

FIND OUT MORE

See our new guidance on complying with ballast water regulations at: www.nepia.com/latest/all-publications/?q=water+regulations. Part 1 looks at the regulatory landscape, Part 2 on the different treatment systems available and Part 3 on the potential operational and commercial impacts.



Safe working on CO_2 systems

A recent incident that resulted in the deaths of ten people on board a vessel has highlighted the dangers of not fully understanding the operation of fixed CO_2 systems.

The incident

This occurred whilst the vessel was in dry dock. A junior officer was tasked with getting details of the fixed systems CO_2 bottles in the vessel's CO_2 room. While the junior officer was in the CO_2 room, he discovered a leak from one of the cylinders. In an attempt to stem the leak, a pressure increasing valve was mistakenly opened, which increased the pressure in the system and resulted in the release of all the cylinders in that bank.

The system had a final distribution valve to the engine room which was initially closed but subsequently opened in error. This led to the occupied engine room being flooded with CO_2.

Preventing incidents

To prevent incidents occurring when working with or on fixed CO_2 systems, it is critical that the all persons involved are aware of the risks.

Any maintenance – planned or unplanned – that is to be carried out on the system must be appropriately risk assessed with the necessary control measures in place in accordance with the vessel's safety management system (SMS) and the manufacturer's recommendations.

IMO guidelines on the maintenance and inspection of fixed carbon dioxide fire-fighting systems (MSC.1/Circ.1318) considers who should carry out the maintenance and repairs.

It recommends that the onboard maintenance plan should indicate which tasks may be performed by competent crew members and which should be performed by specially-trained persons.

The guidelines also stress the importance of developing a safety plan prior to commencing any work on the system. The plan should:

- allow for all personnel to be accounted for,
- establish an effective communications system between those working on the system and the on-duty crew,
- identify measures to avoid accidental discharges such as locking or removing the operating arms from directional valves or shutting and locking the system block valve, and;
- ensure all personnel are notified of the impending activities before work is begun.

Operating instructions and valve identification

The Fire Safety Systems Code (FSS) states that clear operating instructions should be adjacent to each and every CO_2 system release point location.

Labelling of critical system components can help ensure that the system is correctly operated in the event of an emergency. Colour-coded controls is a useful way to identify the controls for a particular discharge zone.

Risks of CO_2 rooms

CO_2 rooms themselves present a risk because of the high volume of CO_2 stored in a relatively small area. Therefore, entry into the room should be controlled and the space gas tested prior to and during entry. The vessel's SMS should contain procedures and control measures for entering CO_2 rooms.

By David Patterson
Loss Prevention Executive

SCORA wins prestigious safety award

North's safety culture assessment tool has won the Safety4Sea Initiative Award.

The idea for SCORA, short for **S**afety **C**ulture **OR**ganisational **A**ssessment, grew directly from the interaction between North's Loss Prevention department and our ship owner members. Our ambition with SCORA was to give shipowner members a tool they could use to proactively self-assess safety at a high operational level and, as a result, allow them to address any weaknesses highlighted in the report.

SCORA was launched in March this year and we've been really pleased to have lots of interest and positive interaction.

SCORA is a great example of how North, and our highly regarded Loss Prevention team, can work alongside our Members to help them with the business challenges they face.

By Alvin Forster
Deputy Director (Loss Prevention)

FIND OUT MORE

Find out more about SCORA at:
www.nepia.com/scora

2019 Initiative Award
SAFETY4SEA

North in the News

You may have missed...

Further global appointments in P&I Claims for North

Following the recent expansion of the senior leadership team, North P&I Club has made a further series of senior appointments to strengthen it's P&I claims team.

http://bit.ly/2OggR2t

North P&I Club Partners with Global Maritime Forum

www.nepia.com/our-news/press-release/north-pi-club-partners-with-global-maritime-forum/

http://bit.ly/2Md0AbY

North P&I Club's CIO James Holmes highlights the importance of Cyber Security & Resilliance at this year's #Cyberfest

http://bit.ly/2ogLdXP

North P&I Club strengthens Member Services with Next-Gen Digital Offering

http://bit.ly/31N05fc

'Global service built around you'

We have rearticulated our core brand in line with the evolving markets we operate in. Our approach, Global services build around you' and featuring the new North roundel, is designed to encapsulate North's confidence in its services, its modern, Member-centric approach, and the importance of global trade.

http://bit.ly/2OlrqkU

Safety Management 2.0 Returns to Greece

North's *Safety Management 2.0* workshops made a welcome return to Greece in October.

Back by popular demand (and an oversubscribed programme earlier this year!), North hosted delegates in our Piraeus office. Those attending benefitted from expert insights from leading safety consultancies Lovoy AS and Green Jakobsen.

Day one of the workshop focused on simplifying safety management systems to improve safety, training efficiency, compliance and seafarer satisfaction. On the second day, delegates explored several issues around measuring and assessing safety performance from both an organisational perspective and a crew perspective.

The next Safety Management 2.0 workshop will be held at Amsterdam in November and is already fully booked. Watch out for more dates in the future.

By Alvin Forster
Deputy Director (Loss Prevention)

FIND OUT MORE

Find out more at: www.nepia.com/safety-management-workshops

New Brand & Digital Resources

We have launched a new suite of digital resources, enhancing our global service offering.

Our new digital resources provide:

- A new website delivering speedier and easier access to North's extensive P&I, FD&D and Loss Prevention information resources.
- The introduction of *GlobeView*, an interactive 3D globe which transforms how information such as maritime threats and incidents or port and weather reports can be analysed and acted upon.
- New and improved *Industry Expertise* areas, which centralise key information on trending topics and persistent industry challenges to enhance Members' ability to trade with confidence.
- A revamped Members' area, *MyNorth*, that enables Members and brokers to personalise and tailor the content they wish to see.
- An innovative Correspondents' tool, which creates a personalised, Member-specific book of correspondent contacts by region and country.
- Updated and improved Android and iOS apps, that feature translated content and access to every North employee and correspondent.

To access these resources please visit: www.nepia.com

Our commitment to delivering the highest levels of individual, tailored service wherever our Members are based is second to none and these new digital tools will help our Members easily access the latest intelligence and insights when they need it.

By Kim Rogerson
Senior Executive (Communications)

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