North

# signals

## Don't let 2020 fuels bring you to a stop

Sharing early experiences of the new generation of compliant fuels

**Storage of Liquid Cargoes – Legal implications and practical advice**

An economic consequence of COVID-19 is plummeting oil prices, which has led to some tankers being employed as floating storage.

**A low-carbon future – is the answer blowin' in the wind?**

Wind power might be undergoing an unlikely renaissance.

ISSUE 120:
SUMMER 2020

www.nepia.com

# Signals

ISSUE 120:
SUMMER 2020 /
CONTENTS

## WELCOME

The COVID-19 pandemic continues to cause disruption in the shipping industry. Many seafarers are still stuck at sea, having their contracts extended time and time again. Thankfully, more countries are recognising mariners as key workers and allowing crew changes to take place, but movement remains hampered due to the lack of commercial flights and difficulties in issuing visas.

Coronavirus is having other impacts on shipping; and in this issue of Signals we look at some of the ways this pandemic has changed the way things are done. If people refuse or aren't allowed to board the vessel, then how are some of the key operations carried out? We consider two of these areas – remote pilotage and fumigation. An economic consequence of COVID-19 is plummeting oil prices, which has led to some tankers being employed as floating storage. Our FD&D team report on the legal implications of these orders, along with some practical advice on the long-term storage of oil cargoes from our loss prevention experts.

Many of you will all be too aware that the impact of the IMO 2020 sulphur cap is still being felt. Here, we look at some of the problems that have arisen with the handling and use of the new generation of compliant fuels and we ask the experts for their opinions.

Once again, we want to thank seafarers for keeping the world moving, and our thoughts are with those who cannot return home. We hope that some sort of normality is just over the horizon.

## PEOPLE



## LEGAL



## CARGO



## SHIPS



## LOSS PREVENTION



## NORTH IN THE NEWS






**'*Signals*' is published by The North of England P&I Association Limited**

100 The Quayside,
Newcastle Upon Tyne NE1 3DU UK
**Telephone:** +44 191 2325221
**Email:** loss.prevention@nepia.com
**www.nepia.com**

**CONTRIBUTORS**
**Editor:** Alvin Forster **Contributors:** John Southam, Mark Smith, Rod Maclennan, Lucy Dixon, Holly Hughes, Kostas Katsoulieris, Sarah McCann, David Patterson, Christopher Little, Kim Rogerson and Gemma Martin Middis.
**Photographs:** Shutterstock.com and istock

**HOW HAVE WE DONE?**
Let us know what you think of the latest edition. Contact us at: **signals@nepia.com**

**INSIGHT ARTICLES AND BACK ISSUES**
Current articles, further information and back issues of Signals are available online at: **www.nepia.com/latest/articles**




# Calling all crew!

Your feedback is invaluable and helps shape future editions of Signals. Seafarers, please share with us any thoughts or suggestions you may have by scanning the QR code to complete a short survey or clicking on the following link.

https://r1.dotmailer-surveys.com/fc3rz1b9-4e4k3i18

# Mental health helpline now includes WhatsApp

## The introduction of WhatsApp to Mind Call.

**As the COVID-19 pandemic continues, many crew members remain on board vessels, having had numerous contract extensions and unable to return home. These issues can put additional strain on the mental health and wellbeing of crew.**

This potentially stressful and isolating experience can cause mental health issues. Some crew may feel like they have no one to turn to.

To support the mental health of the crew working on board North entered vessels, we would like to remind you of our My Mind Matters and Mind Call initiatives.

To better assist in addressing mental health issues and make it easier for crew to seek support, North has now extended the Mind Call helpline to include WhatsApp as a method of contact.

Mind Call can now be accessed by telephone, live chat, email and WhatsApp.

**By Lucy Dixon**
*Senior Executive (Claims)*

**Holly Hughes**
*Claims Executive*

### FIND OUT MORE

Further information about Mind Call and My Mind Matters can be found at the following websites;
**www.mindcall.org**
**www.mymindmatters.club**

### Mind Call is there for you. Make contact via:

| Call | Email | Chat | WhatsApp |
|---|---|---|---|
| +44 191 2353917 | contact@mindcall.org | Chat to an advisor | +44 7464 327451 |

## MIND CALL

**Supporting you at sea**
For mental health and emotional wellbeing at sea call our confidential helpline: **+44 191 235 3917**
or visit: **www.mindcall.org**

## MY MIND MATTERS

**Providing information and resources for the emotional welfare of seafarers**
For more information and resources, please visit:
**www.mymindmatters.club**

## PEME

**Pre-Employment Medicals**
For further details regarding our PEME programmes please contact Lucy Dixon or Abbie Rudd.
Email: **PEME@nepia.com**

## FIRST CALL

**East / West US Coast Ports**
If you are disembarking crew for medical treatment, please contact First Call – Hudson Tactix on **+1 856 342 7500** or email: **firstcall@hudsontactix.com**

**South Coast US Ports**
If you are disembarking crew for medical treatment, please contact First Call – Shuman Consulting Services on **+1 281 486 5511** or email: **firstcall@scslp.com**

## PRM

**Post Repatriation Medical Scheme for Filipino Seafarers**
For further details regarding our PRM programmes please contact Lucy Dixon or Abbie Rudd.
Email: **PRM@nepia.com**

# Working aloft? Don't wing it

An open cargo hold is a dangerous area. Whether working cargo or carrying out maintenance on deck, seafarers, stevedores and contractors can end up in unsafe positions without adequate control over the task or provided with sufficient protection.

**The risks sound quite simple and perhaps obvious. If a person is working near an open hatch cover or the edge of a tween deck, perhaps in a busy environment with moving loads and equipment, the probability of falling into the hold is high. The consequences of falling from such a great height are likely to be fatal.**

But fatalities are happening, as we will see in this case study based on a real incident.

Reconstruction based on real events

## A case study

The bosun on board a bulk carrier was assigned to perform routine maintenance on a hatch coaming.

Prior to starting the job, the bosun, along with an AB was briefed by the Chief Officer. The scope of work was to touch up the coating of the internal section of the coaming. They decided they should do this by stepping on a bar running along the outside of the coaming and apply the paint by roller with an extension. They carried out a risk assessment and took safety measures that they thought were appropriate, such as safety belt and lifeline as well as personal protective equipment such as helmet, gloves, safety shoes, vest etc.

The plan was agreed and relevant working aloft permit-to-work and risk assessment forms were prepared and signed. The job started following the agreed plan. The bosun painted while the AB stood by on safety watch.

Work carried on all morning, but when resuming after lunch, the bosun changed the plan, seeing the opportunity to finish earlier and do the job with less effort.

He decided to use the Bosun's Chair and place his body in a seating position above the hatch coaming with one foot inside the hold and one outside the hold. Other than the AB, no-one else was aware of this change of plan.

The bosun prepared the rigging rope and safety line himself and asked the AB to secure the other end of the ropes. He then took his position to start painting.

The two ropes used for rigging and safety parted and the bosun fell into the cargo hold from a height of 19 metres.

The fall was fatal.

It was found that the Bosun's Chair was incorrectly used and he used rope that was in poor condition and unsuitable for the task.

Working aloft is a high-risk task that has the potential to kill. It needs to be treated as such.

## Keeping safe

The reasons why such incidents occur are complex. Clearly, the bosun did not follow the ship's procedures and deviated from the original plan without sufficiently assessing the risk. But there will no doubt be underlying reasons why the bosun acted in the way he did. In many cases, these important details are not uncovered. Human behaviour is rarely simple.

However, cases like this show the need to properly plan your work and assess the risk. If the plan changes, start the process all over again.

Always use the right safety equipment in the manner it is meant to be used

Working aloft is a high-risk task that has the potential to kill. It needs to be treated as such.

**By Kostas Katsoulieris**
*Senior Executive (Claims)*

### FIND OUT MORE

Guidance on safe working from height can be found in Chapter 17 of the UK Code of Safe Working Practices for Merchant Seafarers **www.gov.uk/government/publications/code-of-safe-working-practices-for-merchant-seafarers-2019**



# Force Majeure events during COVID-19

The disruption caused by the COVID-19 pandemic continues to affect parties' abilities to perform existing contracts. This has resulted in an increased focus on force majeure clauses in charterparties.

**As a matter of English law, "force majeure" is purely a contractual term and the scope of its operation is defined by what has been included within the relevant clause of the particular contract.**

## Force majeure clauses

A force majeure clause must be clearly drafted and will usually include:

- a list of specific force majeure 'events'
- what the remedy (or remedies) will be if a force majeure 'event' occurs
- an obligation to report the 'event'

Whether the COVID-19 pandemic constitutes a force majeure 'event' will depend on the wording of the force majeure clause.

The clause may include specific wording stating that a pandemic would provide contractual relief to one or both parties; however, it may not be this clear.

## Proving force majeure

A force majeure clause will usually provide that performance must be "prevented", "hindered" or "delayed" by the force majeure 'event'. It is for the party seeking to rely upon the clause to prove that the specific facts fall within the protection of the clause. They must therefore prove the following:

- that there has been a force majeure 'event' as defined in the specific clause
- that, because of the 'event', they have been prevented, hindered or delayed (as per the wording of the clause) from performing the contract
- that the circumstances were beyond their control
- that there were no reasonable steps that could have been taken to avoid or mitigate the 'event' or its consequences.

Evidence is crucial when seeking to prove force majeure. This may include written correspondences, notices, government warnings, communications from an agent or port authority, official publications and news reports.

## The impact of COVID-19

Restrictions imposed at ports due to COVID-19 may present immediate issues for owners and charterers in performing a contract and may also result in disputes further down the line.

Contractual issues that may arise include port closures preventing the loading or unloading of cargo or determining when the virus started to circulate in a particular country or region.

Disputes may also arise in respect of whether secondary effects of COVID-19 (e.g. lack of pilots or berthing slots) would be covered by a force majeure clause which contains a sweep up provision such as "any other cause outside of [the party's] reasonable control". In instances where performance would not have occurred regardless of the COVID-19 pandemic, causation may also be disputed - as most force majeure clause wording will require proof that performance would have taken place but for the effects of the event.

## Check your terms

Owners and charterers wishing to invoke force majeure in respect of COVID-19 will need to closely review the terms of the relevant clause and should collate all evidence which would help them prove force majeure.

Additionally, they should be careful to follow any reporting requirements set out in the clause.

If you have any queries relating to force majeure, contact your usual FD&D claims handler.

**By Sarah McCann**
*Senior Solicitor (FD&D)*

### FIND OUT MORE

Find out more by reading our earlier article **'What is Force Majeure?'**
**www.nepia.com/articles/what-is-force-majeure/**

# Storage of liquid cargoes – legal implications

The COVID-19 pandemic has triggered a plummeting consumer demand for oil. This has resulted in a shortage of shore-side storage capacity, leading to a sharp increase in the number of tankers receiving orders to act as floating storage.

**Such orders can give rise to a number of legal issues. The most common being whether such an order is valid or if it can be rejected. In answering this question, careful consideration must be given to the terms of the applicable charterparty.**

### Time charterparties

In the context of a time charterparty, the issue will be most straightforward if there is a specific "floating storage" clause. Certain standard form charterparties include such a clause (e.g. clause 21 of BPTIME 3); and where such a clause is included, then subject to the terms of the clause, the orders will most likely be valid.

If no express provision is made for floating storage, there is more potential for 'grey areas' - and therefore disputes - to arise.

Charterers typically enjoy wide discretion as to the employment of a vessel, and can issue employment orders within the usual limits as to trading ranges, lawful cargoes, safe ports and places etc. On that basis, orders to wait off port for a relatively short period, whilst awaiting the availability of shore-side storage capacity, will in most cases constitute normal employment of the vessel and be valid.

However, should the vessel be asked to wait for a period of some months, the situation is far less clear. Owners may well be able to argue that such orders present risks which they did not agree to bear, do not reflect the 'ordinary' trading of a time-chartered tanker, and as such are not valid. The ability of an owner to make such arguments will depend on the circumstances of each case; but the onus would always be on an owner to show why charterers' discretion as to the vessel's employment should be curtailed.

### Voyage charterparties

Agreeing a period of floating storage is more difficult for the parties under a voyage charter, which is fixed for the carriage of a cargo between pre-agreed locations. It will typically require owners to execute the voyage with utmost dispatch; and even where there is no express 'utmost dispatch' obligation in the charterparty, such a term will usually be implied.

Most voyage charters do not contain a right to stop the vessel mid-voyage, and even those that do (for example the BPVOY4 form, at clause 22), are usually designed to allow for a change of discharge port. Such clauses generally provide for the vessel to stop 'to await orders', and it is not clear that this right could be interpreted so widely as to include floating storage orders. That would, we think, be a difficult argument for a charterer to make, which is possibly why the question remains untested before a court.

### Additional considerations

Putting aside the validity of such employment orders, there are additional issues which owners and charterers must consider.

*Hull fouling:*
Did the parties consider a prolonged period of floating storage when they agreed the hull fouling provisions? If fouling arises as a result of the time spent awaiting onward orders, does the charterer have to pay for the required cleaning? Are the performance warranties suspended in the meantime?

*Bills of lading:*
Beyond the charterparty terms, bills of lading will almost certainly contain relevant terms. In many cases there will be important issues to consider in the context of insurance.

An order to wait for a prolonged period might arguably be valid in the charterparty, but where owners have issued bills of lading, there will in most cases be an obligation vis-a-vis the receiver to prosecute the voyage without undue delay. Would halting the voyage place an owner in breach of their bill of lading obligations? If so, this may well provide grounds to reject charterers' order.

Similarly, owners should consider whether such a delay on the laden voyage might constitute a deviation and should seek advice from their P&I Club.

*Damage to cargo and cargo tanks:*

Depending on the nature of the cargo, there is a risk that a long period of storage might see a deterioration of cargo quality.

As the owner is responsible for the care of the cargo, they should consider whether additional insurance(s) are required to cover such risks, and which party will pay for the additional premium(s).

Does a prolonged storage period also pose a risk to the tank coatings and other cargo-related infrastructure? If any such damage occurs, it may well be that the costs arising will fall to owners under their maintenance obligation – notwithstanding that there would be a potential indemnity claim against charterers.

**By Christopher Little**
*Senior Solicitor (FD&D)*

## FIND OUT MORE

In many cases, orders for a vessel to act as floating storage will give rise to complex, and fact-specific, issues. If in any doubt, Members should contact their usual FD&D contact(s) for further guidance and advice.





# Practical advice on the long-term storage of liquid cargoes

Low oil prices have led to some tanker owners to consider using their vessels as a means of medium-to-long term floating storage.

**In general terms, a more refined product has a shorter shelf life than crude oil. However, due to a vast range in characteristics, compositions and potential additives, it is difficult to exactly determine the shelf life for a particular cargo. So practically how can an owner and a vessel's crew help protect themselves against a potential claim?**

### Good vapour management

From a basic operational perspective, careful vapour management is key. Excessive venting through PV valves can result in not only cargo losses but also lead to a change in the quality or specification of the cargo.

If venting is required, it is important to check that local regulations permit this. Some areas, such as California, do not permit tank vapour venting even as a means to control tank pressures arising from an increase in pressure due to diurnal variation.

### Risk of decomposition

From a more complex perspective, the rate of decomposition of a refined cargo depends on many factors. These include the nature of the original crude, the distilling process, water content, additives used (anti-stat, antioxidant etc) and vessel-related factors such as tank coating condition.

A certificate of analysis and quality should be provided on loading and used as a reference for composition, additives and water content.

### Monitoring the cargo

Monitoring by analysis may be the only way to truly know how well a cargo is surviving storage.

Before the vessel goes into storage mode, take samples of the cargo and have them tested in the presence of an independent surveyor.

When in storage mode, take regular samples and analyse them to determine the quality of the cargo. However, this level of analysis may be reliant on laboratories being located close by and is not always an option. If this is the case, then the vessel's crew should continue to regularly take samples and check them visually for colour, viscosity and sediments as well as noting the odour.

In addition to this, take regular ullages and record them along with cargo temperatures, bottom soundings (such as free water and sediments), inert gas readings and external temperatures.

It is also important to record any controlled or uncontrolled venting and, if required, operation of the inert gas plant.

**By Rod Maclennan**
*Loss Prevention Executive*

# Anyone for top-up? Fumigating cargoes at sea during COVID-19

Fumigation is generally carried out by specialists, but the COVID-19 pandemic is preventing some fumigators sailing with the vessel, leaving the crew to carry out a high-risk task.

**Guidance on fumigating bulk cargoes on vessels is provided in the IMO Circular MSC.1/Circ.1264 – *Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo holds*, and it is always recommended that these are strictly followed. It requires fumigation to be conducted by qualified operators and states that the crew should not handle fumigants.**

## Fumigation in-transit

Fumigation in-transit is common and designated crew receive basic training from the fumigator-in-charge. In these cases, the fumigator-in-charge will initiate fumigation and remain on board long enough to allow the gas concentrations to build up to a level where testing for leaks can be carried out. Once it has been confirmed that the vessel is safe and no leaks are present, then the fumigator in charge will formally hand over the operation to the Master.

However, particular trades sometimes require 'top-up' fumigation to be carried out during the voyage. This is most typical with the carriage of logs, and ordinarily the fumigators will sail with the vessel to apply the top-up fumigant. But what happens when fumigators cannot sail with the vessel because of travel restrictions caused by COVID-19?

## Leave it to the crew?

If qualified fumigators are not permitted to sail with the vessel and topping-up is required, it is likely that the crew will be requested to carry out this task.

This may be at odds with the IMO guidance, which recommends against crew handling fumigants. But there have been reported instances where topping-up has been carried out successfully and safely by the crew after receiving specialist training from the fumigation company.

## Getting approval

The vessel and the fumigation company should together develop a plan which is then presented to the vessel's Flag State and the relevant Port States for approval. The plan should provide details of how the operation will be conducted (based on a thorough risk assessment), address what training will be given to the selected crew members and contingency plans.

## Crew training

The training requirements for the crew to be able to safely apply top-up fumigant is far more comprehensive than the basic safety training for in-transit fumigation, where the crew only monitor the process that is already underway. Envirofume, a fumigation company in New Zealand, has developed a two-day course for crew on the safe use of aluminium phosphide fumigant, and have kindly shared with us an outline of their training programme.

The training is delivered to an officer and a rating as a minimum, and they must ensure language is not a barrier. In the case of New Zealand, the crew under training must have a high standard of English.

Training covers the following aspects:

- Fumigant properties
- Safety protocols
- Actions required in the event of an incident
- Fumigation-related tasks covering all aspects of the fumigation process, including application, gas monitoring and conducting leak tests.
- Necessary documentation

The crew undergo a final assessment before they are deemed competent by the fumigation company.

## Learn in port

The topping-up procedure should be the same as the procedure followed by the specialist fumigators during initial fumigation at the load port. Therefore, the crew can run through the entire process with a technician, before they conduct the fumigation themselves during the voyage.

Once the vessel departs the load port, the trained crew liaise closely with the fumigation company, including sending daily the results of safety checks.

## Topping-up safely

On a set date during the voyage, the trained crew can then carry out the top-up fumigation in accordance with the fumigation company's step-by-step procedure.

Take great care: ensure there is a suitable weather window, carry out a pre-fumigation briefing, know how to safely handle the fumigants, and know the actions to take after applying the fumigant such as handling used PPE and cleaning.

The fumigation company should always be available to offer any additional guidance if the crew encounter any issues during the operation or subsequent monitoring.

**By David Patterson**
*Loss Prevention Executive*

## FIND OUT MORE

Find out more about safe fumigation with our briefing at: www.nepia.com/publications/fumigation-briefings/



# Pilots on remote control

The COVID-19 pandemic has led to some ports adopting the practice of remote pilotage services. This is a high-risk operation and must be approached with caution.

**Some ports consider remote pilotage to be an effective measure to prevent the spread of infection. Vessels travel the world and are seen by some as a potential way of spreading the virus.**

## Remote pilotage risks

The simplest way to reduce the risk is to avoid it. However, if remote pilotage is mandatory, the operation will require a full and in-depth review and risk assessment. If possible, use of remote pilotage should be restricted to passages to an anchorage from the pilot station and should not be used for berthing the vessel. To carry out a risk assessment, the Master may require the input of the local port authority, perhaps through the local agent or by enlisting the help of a Club correspondent.

**Getting the feeling:** Whilst new technology has changed the way the industry operates, pilots will still use their instincts built up through experience for how a ship "feels". Even with the most advanced technology, a pilot cannot gain a feeling for the vessel characteristics from a remote position.

**Knowledge transfer:** A pilot conveys local knowledge quickly and efficiently. Even if the Master spends many days studying the chart, they are unlikely to be able to match the pilot's local knowledge. Under remote pilotage, there is a risk that the efficient transfer of information is compromised. Therefore, when considering the use of remote pilotage services, think about the Master's existing knowledge and experience of the port.

**Clear communications:** Communicating only by radio is made more difficult by language barriers, accents and misinterpretation. It is made more complicated when needing to communicate with other parties involved in the manoeuvring such as tugs, mooring boats or linesmen. Therefore, establish a communications protocol prior to commencing pilotage and try to ensure that all remote communications are clear, concise and thoroughly tested prior to use. Always have a back-up means of communication.

**Master-pilot exchange (MPX):** This exchange may take more time to ensure that the correct information has been received and understood.

**Passage planning:** Ensure the plan has all the required detail. Seek advice from the pilotage authorities for the port, such as tidal height, under-keel clearance and local navigations warnings in place. The proximity of local navigational hazards in relation to the available depth and width of water should be reviewed and considered in the risk assessment. Will manoeuvring in close confines amongst multiple berths be required? What are the expected port movements?

**Situational awareness:** The decisions made by the bridge team, which of course includes the pilot, are influenced by the events and communications. This situational awareness is vital in the event of an emergency or when needing to take quick and effective action. The pilot's situational awareness may very well become diluted if they are not physically present on board. The pilot's levels of situational awareness may also depend on whether they are on board a tug, pilot boat or ashore.

## Suggesting alternatives

The primary alternative to remote pilotage is of course conventional pilotage with a pilot on board, but whilst ensuring that there is a safe environment to protect everyone from the risk of infection.

**By John Southam**
*Loss Prevention Executive*

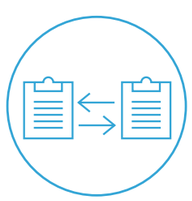
## MEASURES TO REDUCE THE RISK OF INFECTION:


Practising social distancing

Dedicated area on the bridge for the pilot - mark this area out so that crew do not cross into it

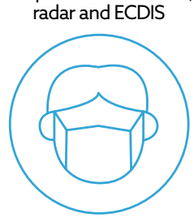
Dedicated equipment for the pilot such as a VHF, radar and ECDIS

Disinfection of equipment and any contact surfaces that the pilot may encounter

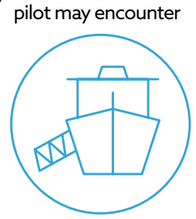


Avoid passing documents

Where possible, conduct meetings on the bridge wings as the infection is less able to spread outdoors



Where close contact is unavoidable, use the correct PPE such as face masks



Minimise contact when assisting the pilot with boarding and disembarkation

# The changing face of fuels

The introduction of the 0.50% IMO global sulphur cap on 1 January was always going to make 2020 a challenging year. When we entered this new era of environmental legislation, one of the big unknowns was the characteristics of new compliant fuels.

**Early experiences suggest that the shipping industry has adapted well to the switch to the new very-low-sulphur fuel oil (VLSFO) products, but the huge variability in their characteristics has brought issues.**

Here, we look at some of the problems that have arisen with the handling and use of VLSFOs and we ask the experts for their opinions.

## Poor stability

In very simple terms, an unstable fuel can cause sludge to form. This sludge can block pipes, choke fuel filters and solidify in tanks. In extreme cases it can damage piston rings and fuel pumps.

Many VLSFO products are blends of different components. If there is a mixture of aromatic and paraffinic blend components, it increases the risk of instability.

Dealing with the consequences of an unstable fuel often requires the crew to work long hours over several days to keep the vessel moving, carrying out labour-intensive and dirty tasks such as cleaning centrifugal separators and removing blockages. This is likely to lead to delays in the vessel's schedule. In extreme cases, there have been losses in propulsion which is of course a big danger.

The usual test for stability is Total Sediment Potential (TSP). This is carried out by fuel testing laboratories as part of the suite of tests for checking fuel quality against the parameters of ISO 8217. If the TSP is greater than 0.10% (by mass), then it is at higher risk of becoming unstable.

Since VLSFO products hit the market, fuels are failing on high sediment levels more frequently.

The images in the next column show a very recent example of high sediment fuel. It's clear to see why it would be difficult to pump this fuel around the vessel.

## Short life span

There are reported cases where the VLSFO product met ISO 8217 specification limits for TSP at time of bunkering subsequently became unstable within a matter of weeks.

The shelf life of some fuels has decreased significantly, which couldn't come at a worse time when some operators are placing their vessels into lay-up because of the economic impact of the COVID-19 pandemic.

Michael Banning of fuel additive specialists Innospec told us: "Some blend components come from unstable refinery streams and can result in 'distillate aging'; a chemical process that can produce sediments, gums and polymers. On vessels, it is most commonly triggered by a rise in fuel temperature, such as heating during storage or when passed through a centrifugal separator. In general, a lower viscosity (below 100cSt) indicates a higher proportion of distillate components, leaving them more susceptible to distillate aging."

The aging process can be prevented but not reversed by using additives. As always, it is very important that additives are used in consultation with the provider.

## Confusing cold flow properties

VLSFOs with a high paraffinic content are more vulnerable to wax formation if the temperature drops below a certain point.

As we discussed in our article "New fuels and heat sensitive cargoes" in Signals 119, the traditional "Pour Point + 10°C" rule of thumb for determining fuel storage temperature isn't always reliable for VLSFOs. Depending on a fuel's paraffinic content, there is a risk that wax can still form at temperatures higher than this.

Which is why the fuel testing company Veritas Petroleum Services (VPS) uses the wax appearance temperature (WAT) and wax disappearance temperature (WDT) tests to assist shipowners in identifying suitable storage temperatures of fuel.

Steve Bee of VPS told us that the WAT of a VLSFO can be up to 22°C higher than its pour point. Furthermore, the WDT is currently on average 11°C higher than the WAT. With a wealth of test data at their disposal, VPS have found that around three-quarters of VLSFOs tested had a WAT between 31-40°C, which emphasises the importance of storing the fuel at the right temperature to avoid waxing.

## Think before heating

Getting the right fuel temperatures for storage, treatment and burning is vital to prevent any operational problems on board.

VPS have provided some key points to remember when determining these temperatures for VLSFOs:

- VLSFOs that are very low in viscosity but have a high WAT and WDT need to be heated to ensure a stable flow and prevent wax formation. However, if heated too much, the stability will collapse quicker, potentially reducing the shelf life of the fuel.
- The problem is exacerbated if a low-viscosity fuel also has a high cat fine content. It becomes difficult to heat the fuel to the required levels for effective separation.
- Fuels on the verge of instability contain sediment which falls out of suspension when heated. This may mean the fuel temperature will need reducing in accordance with the centrifugal separator maker's guidance.
- There is a risk that the fuel's WAT/WDT is higher than the tested flashpoint.




## Accelerated engine liner wear

We have seen an increase in reported engine liner wear, and this is supported by industry feedback and a recent VPS whitepaper. VPS suspect that recent engine damage on vessels burning VLSFOs may be related to the cylinder oil used.

The reduced sulphur content in fuels means less acids forming during combustion. This has led to a change to cylinder lubricating oils with a lower base number (BN), which is a measure of the oil's ability to neutralise acids from this combustion process. If the BN is too high, it can result in calcium compounds being deposited on the top of piston crown. These hard deposits are abrasive and can cause liner wear, scuffing or piston ring breakage.

The reduction from 70BN to 40BN cylinder oil may not be enough, so further reductions may be required in accordance with engine makers and cylinder oil providers.

## Check your wear

The more you monitor your engine and how it is reacting to changes in fuels, cylinder oil and feed rate, the better chance you have of preventing damage.

Scrape down analysis is a great way to measure liner wear in the early stages and 'fine-tune' cylinder oil feed rate.

The frequency of scavenge port inspections should be increased when new cylinder oils are being used or different fuels are being consumed.

## Flash alert

VPS has recently issued several bunker alerts where flashpoints have been below 60°C, which is the minimum temperature required under SOLAS.

Some industry experts have questioned whether reduced car and aviation fuel usage during the COVID-19 pandemic has led to refineries pushing out more volatile blends made up from this lower-than-normal priced fuel.

If your fuel has been tested with a flashpoint below 60°C, then you must inform your classification society and flag State and be guided by their advice.

**By Mark Smith**
*Loss Prevention Executive*

## FIND OUT MORE

Find out more on our 2020 expertise area: **www.nepia.com/topics/2020-vision/**

Thanks to the following for their help with this article:

Michael Banning – Innospec Fuel Specialities LLC **www.innospecinc.com**

Steve Bee & Ian Crutchley – VPS Fuel Testing Services **www.v-p-s.com**

# A low-carbon future – is the answer blowin' in the wind?

The age of steam, followed by that of the diesel engine, saw the demise of sail-powered merchant vessels in the 19th Century. But wind power might be undergoing an unlikely renaissance.

**The IMO has set ambitious targets on reducing greenhouse gas (GHG) emissions from shipping. These targets will be partly met by improving efficiencies in vessel operation, but it will almost certainly require a huge change in how vessels are fuelled and powered. One of the potential solutions relates to harnessing wind-power.**

Sail power on its own will not be the magic solution in achieving a zero-carbon means of propulsion. But if harnessed, wind-assisted propulsion can reduce a vessel's fuel consumption, resulting in lower GHG emissions. The difficulty of course is harnessing the power of the wind, which seafarers have been tackling for millennia.

Modern wind propulsion comes in a variety of forms and some are already being used on cargo ships at sea.


Credit: Norsepower

### Rotor Sails

Mounted on the open deck of a vessel, cylindrical rotors harness the thrust created by the 'Magnus effect'.

When subject to wind, a difference in the air speed on either side of the rotor (essentially a large motor-powered rotating cylinder) results in a pressure differential. This pressure differential creates a force that propels the vessel forward. It is the same reason why a spinning football curves in the air.

The basic concept was created a century ago and, in 1924, the schooner Buckau was the first vessel to be fitted with 'Flettner' rotors. High installation costs and low fuel prices at that time led to a lack of further interest.

There are currently only a very few vessels operating commercially with rotor sails. Perhaps the most high-profile of these is the LR2 product tanker Maersk Pelican, which was fitted with two Norsepower rotor sails in 2018. Lloyd's Register monitored the operation and reported fuel cost savings of 8.2% during the first year of operation.

This is consistent with research by BMT, who state that the installation of two rotor sails on a modern vessel could achieve fuel savings of 10%, taking into account minor losses in its effectiveness through increased heeling moments from sway forces and the extra rudder drag from weather helm. Gavin Allwright, Secretary of the International Windship Association (IWSA), is more optimistic, reporting 20% fuel savings on a retrofitted general cargo ship. He also predicts that savings of more than 30% are achievable by using wind-assist on optimised newbuilds.

Some rotor sails have a tilting mechanism so it can be stowed horizontally, useful for when carrying out cargo operations.

### Suction Wing Sails

A suction wing sail is a non-rotating aerofoil, where the leading edge adjusts automatically to the optimum angle relative to the wind. The profile of the wing then uses aerodynamics to create thrust that propels the vessel.

Credit: Bjoern Wylezich / Shutterstock.com

An example is the 'ventifoil' from Dutch company eConowind. They install retractable wing-shaped sails; either directly to a vessel's structure on the open deck, or in a containerised unit. If conditions are unfavourable, the ventifoil can be retracted.

### Towing Kites

Systems such as SkySails use a towing kite attached to the vessel's bow by a rope. The kite is steered by the control panel on the bridge so it can manoeuvre in the air ahead of the ship to generate propulsion.

### Rigid (Hard) Sails

The profile of a rigid sail resembles that of an aeroplane wing and operates in a similar principle. A hard sail system is to be fitted on MOL WIND CHALLENGER; a coal carrier expected to be delivered in 2022. It is claimed that the forecastle mounted telescopic rigid sail will reduce the vessel's GHG emissions by about 5% on a Japan-Australia voyage, and about 8% on Japan-North America West Coast voyage.

### Wind Trouble

Naturally, wind propulsion only works if there is wind that can be harnessed. And despite ships using the power of the wind for as long as time, the modern solutions are very different to those of the past. We are very much still in a learning phase and each of the different wind-propulsion options brings its own risks.

Maintenance: Sail systems will require maintenance and fixed systems could have an adverse impact on a vessel's efficiency if they aren't in operation and cannot be stowed.

Cargo operations: Non-retractable and fixed systems could hamper cargo operations such as limiting crane reach or conveyor positioning. They may also be vulnerable to damage during cargo operations, especially with crane movements.

Cargo capacity: As sails are mounted on deck, the space needed could impact the cargo carrying capacity of the vessel

Size: Sails with large surface area could affect visibility from the wheelhouse, increase vessel's windage and the additional weight needs to be considered.

**By Alvin Forster**
*Loss Prevention Executive*

## FIND OUT MORE

Find out more on the website of the International Windship Association at: www.wind-ship.org

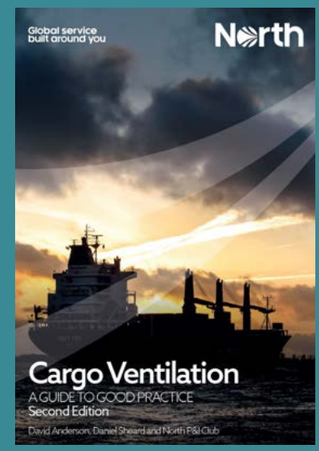


## "Cargo Ventilation – A Guide to Good Practice" is now available

**A new edition of our acclaimed loss prevention guide *"Cargo Ventilation – A Guide to Good Practice"* is now available.**

First published in 2006, the guide has provided invaluable advice to shipowners and seafarers on ventilating cargoes. It explains the principles of ventilation, both in practical and scientific terms, as well as providing a ship's master with the knowledge they need to decide when to ventilate and when not to, tackling a few common myths along the way.

The second edition builds on that solid foundation, with added sections that stress the importance of maintaining accurate ventilation records. We continue to see claims brought against shipowners for wetted or spoiled cargoes. The ability to successfully defend such claims are made much more difficult if ventilation logs are error-strewn, incomplete or blatantly falsified. Ventilation is important in caring for the cargo whilst it is on board the ship, but it's equally important to be able to prove it.




Written in conjunction with industry experts David Anderson and Daniel Sheard of marine consultancy Brookes Bell, the second edition of this guide is a valuable addition to the bookshelf of a bulk carrier or general cargo ship.

## MyGlobeView powered by Geollect

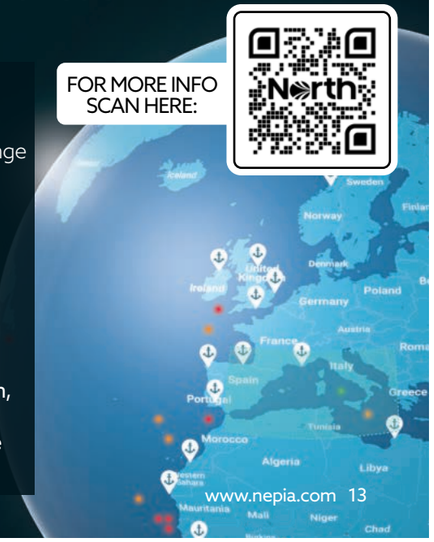
Accessed through your MyNorth account, **MyGlobeView** is an advanced interactive geographical information portal exclusively for North's Members and correspondents.

**Additional layers recently added include:**

- ✓ Country-specific crew change information
- ✓ Tidal patterns
- ✓ IMO ratifications
- ✓ Industry news
- ✓ ITOPF reports

Plus you can access all of the data sources from GlobeView such as port index information, sanctions updates, selected weather reports and maritime threats and incidents.

FOR MORE INFO SCAN HERE:



# Drill Bits: Enclosed Space Entry

## Next up in our 'Drill Bits' series that helps you get the most out of your drills, we tackle the subject of enclosed space entries.

**If a person enters a space with insufficient oxygen to support human life and then collapses, they have around four minutes survival time. In some reported cases, rescue attempts have taken up to 20 minutes before retrieving the casualty, which by that point is a dead body.**

Time is of the essence. Could your team safely rescue someone from within a tank or the bottom of a cargo hold in such a short time?

As we did with the fire drill articles in previous issues, we will first give you the 'drill bits' – the different elements of the drill. This is to make sure that the crew are familiar with and confident in their actions during a given drill, before bringing them together for a larger scenario-based drill.

### Preparation

Split the crew into their emergency response teams and conduct separate training sessions that focus on their specific roles and responsibilities, each led by a responsible officer.

For example, we'll consider five teams as follows:

| TEAM | OBJECTIVE | EXERCISE |
|---|---|---|
| **BRIDGE TEAM**<br>Location: Bridge<br>Group leader: Master | **Demonstrate use of GMDSS** | Each person learns how to place a distress call by sending and receiving acknowledgements using the GMDSS equipment. This should be logged in the GMDSS logbook. |
| | **Familiarity with contingency plans** | Focus on enclosed space rescue contingency plans; ensure the team knows their location. Check all relevant situations are addressed in the plans and that the contents are accurate. |
| | **Understand record-keeping** | Describe how training records should be maintained, remembering that these may prove to be valuable evidence in the event of an incident. |
| | **Understand the use of telemedical services** | Describe where to find the details for use of the telemedical service in the SMS. Check the procedure and make sure it is understood. |
| **FORWARD CONTROL TEAM**<br>Location: on scene<br>Group leader: 2nd Engineer | **Demonstrate use of the SCBA board** | Familiarity in the use of the SCBA board – know what to record and when to alert the team leader |
| | **Demonstrate proper and correct radio communications** | Explain and demonstrate correct radio use. Explain that some areas of the ship may be radio black spots and that you may need to establish a relay radio position to pass your messages to the bridge. |
| | **Demonstrate the use of the tripod (or equipment for lifting the casualty out of a space)** | Taking an unconscious casualty out of an enclosed space may require lifting them vertically. Show the crew the equipment available on board to help with this and demonstrate how to use it. |
| **FIRST AID TEAM / HOSPITAL TEAM**<br>Location: Hospital<br>Group leader: 3rd Officer | **Demonstrate CPR** | Take the crew through the basics of CPR. Remind them CPR is hard work and to take turns when tired. |
| | **Demonstrate familiarity of use of the vessel's oxygen system** | Show how to use the oxygen system in the hospital; e.g. location of masks and how to use. |
| | **Preparation of the hospital for a casualty** | Remind crew of the possible injuries that could've been sustained in an enclosed space rescue situation and what they should be getting ready whilst the casualty is being rescued |
| **SCBA TEAM 1**<br>Location: Emergency locker<br>Group leader: Chief Officer | **Demonstrate checking of breathing apparatus** | All SCBA team members to don SCBA equipment, conduct full checks such as bottle contents, whistle check, mask seal test and mask positive pressure check. |
| | **Demonstrate use of the BA trolley set** | If your vessel has a BA trolley set, these can be an excellent tool for use in enclosed space rescues as it can increase the period SCBA teams can be safely in the space and can allow better maneuverability. Show the crew how to safely rig and use this tool |
| | **Demonstrate use of BA 'Y-piece' branch and additional mask** | If available on board, demonstrate how to rig an extension face mask on the BA sets for the casualty. |
| **SCBA TEAM 2**<br>Location: a space on deck<br>Group leader: 2nd Officer | **Demonstrate using the Neil Robertson stretcher** | Often the casualty will be unconscious and will need to be lifted vertically. One of the best tools for this is a Neil Robertson stretcher. Practice using this piece of equipment |
| | **Demonstrate using other types of stretchers (e.g. scoop)** | If you have other types of stretchers or rescue material, practice the use of these. |

### De Briefing

Each group should carry out a debrief. Highlight any lessons learned and encourage questions from the team. Don't forget to highlight what went well and give praise where its due.

For this training it is extremely important to note how to raise the alarm and not to attempt a rescue unaided. Too many seafarers have died trying to "help" a shipmate who has collapsed.

Check that the crew knew their individual duties and who would deputise according to the muster list!

**By John Southam**
*Loss Prevention Executive*

### NEXT TIME

Next time In the next issue of Signals, we will look at a full scenario-based rescue from enclosed space drill where we will try out everything learned from the above drill bits.

# North in the news

## You may have missed...

## News

**North P&I Club Calls for Collective Action on Crew Repatriation**

Leading International Group (IG) Protection and Indemnity member, North P&I has urged maritime stakeholders to seize the opportunity provided by a UK Government summit on July 9th to establish an international action plan to deal with the crew repatriation crisis resulting from COVID-19.

www.nepia.com/our-news/north-pi-club-calls-for-collective-action-on-crew-repatriation

**North Resilient in the Face of Large Claims**

Club confidently delivering on strategy to strengthen and diversify in face of challenging 2019-20 claims year.

www.nepia.com/our-news/north-resilient-in-the-face-of-large-claims



**North Completes Integration of Sunderland Marine**

North P&I Club completes integration of the Sunderland Marine Insurance Company Limited business into parent company The North of England Protecting and Indemnity Association Limited.

www.nepia.com/our-news/north-completes-integration-of-sunderland-marine

TO READ MORE SCAN HERE:

## Trending in our expertise areas

**COVID-19: Coronavirus**

www.nepia.com/topics/covid-19-coronavirus

**Cyber Security**

www.nepia.com/topics/cyber-security

**Right Crew – Mind Matters**

www.nepia.com/circulars/mind-matters-supporting-mental-health-wellbeing-at-sea

**The trending in expertise area can stay as is with the addition of "COVID-19 & Impact on Crew Changes"**

www.nepia.com/covid-19-impact-on-crew-changes

## Have you signed up to MyNorth?

MyNorth enables Members, brokers and correspondents to personalise and tailor the content they wish to see. In MyNorth you can save articles, publications and contacts to your own personal space, in addition to setting preferences for how you want to view our latest news and updates.

Find out more: **www.nepia.com/mynorth/**

**How to Guides:**

- An introduction to MyNorth: **www.nepia.com/publications/how-to-an-introduction-to-mynorth/**
- Registering for MyNorth: **www.nepia.com/publications/how-to-register-to-mynorth/**


## Contact our Loss Prevention team on: loss.prevention@nepia.com

Current articles from *Signals* can be found online at: **www.nepia.com/latest** and back issues of *Signals* are available online at: **www.nepia.com/latest/publications/newsletters/**



## Connect

www.nepia.com
@NorthPandIClub
NorthPandIClub
The North of England P&I Association Limited
North P&I Club