

Inséré 28/04/21 DOSSIER Enlevé 28/05/21

Advice for making maritime software projects work

Digital Ship held a webinar on June 25, sharing advice about better ways to make maritime software projects work, with speakers from Anthony Veder, Ionic Shipping and Euronav. Karl Jeffery, founding editor of Digital Ship reports.

Advice included to spend 75 per cent of your time on planning; to keep focused on the core purpose and value of your project; to communicate with people how they will need to change how they work; recognise that people in the company do not necessarily have the same level of IT competence as the IT staff; and find the right people with the right mindset that you can work with.

Speakers suggested you should only use Agile when you have already worked out what problem you are trying to solve, and have moved to the stage of your project of developing a solution.

Sifra Westendorp, Anthony Veder

Sifra Westendorp, digital development manager of Anthony Veder, emphasised that 75 per cent of your effort should be on planning, before you get to implementation. "If you do this right, it will save you a lot of headaches once you start executing," she said.

As part of planning, you might consider factors such as whether there is a strategic fit between the project and the company strategy, whether the project really solves a problem or is just a 'cool tool', whether the rest of the company will support it, and if the company will provide resources and knowledge to help.

While planning the project, you can also make a plan for how you will encourage adoption. Anthony Veder is based in Rotterdam, and runs 32 vessels, of which 21 are ethylene carriers.

Ms Westendorp has worked as a digital development manager for 2 years, and before that was in the operations department of the company. This "gave great insights into how a shipping company works, and how Anthony Veder works," she said.

Her department is responsible for formulation and execution of digital strategy. Its current projects include providing remote assistance to vessels, reducing administrative workload onboard, developing new ways to provide information to customers, and predictive maintenance.

For a project to be successful, it is important to keep focussed on the "why" – having a good understanding of the problem you are trying to solve. If you lose focus on the why, instead putting your attention on the tool itself, you can end up with a tool which does not actually solve anything, she said.

The "why" is the core of your business case for the project. Having a strong business case will give you an answer if people question the purpose of the project in 6 months' time.

Another element for successful projects is "very strong change management skills". Many people say they want change and better ways to work, but when they are actually asked to change, they don't actively co-operate or even sabotage the project, she said.

You can counter this by being very open and transparent to people about what will and won't change, and what benefit they will get from changing. It also helps if you develop an understanding of how people work and what problems they face, and aim to get their support from early on.

You should also have a robust project management method, to ensure your budgets and schedule stay on track. That is "something that I learned the hard way," she said.

As an example of what planning work can look like, Ms Westendorp explained how she embarked on a project to reduce administrative workload onboard vessels, by doing many interviews and workshops with people in the office and onboard, to try to understand where the administration workload was coming from.

"It turned out that what we thought was the problem was not the root cause," she said.

Once you understand the problem, you can try to find a tool which will solve it.

"You need the discipline to dig into the problem and understand the root causes, show the business value."

"There is an abundance of tools on the market, they all claim they will reduce the workload, but does it actually solve the problem, or is it just fighting symptoms?"

With software, Anthony Veder has a guiding principle of buy before build. "We are a shipping company, we are not a tech company. Developing your own tool will require a lot of functional control and maintenance. If you buy a tool, that is being taken care of," she said.

You may need to develop your own tool if there isn't any available on the market.

When developing software, Agile should not be a goal in itself, but a means to an end, Ms Westendorp said. "Agile should never be a reason to start experimenting and see where it goes. An Agile methodology starts when we have understood the problem and start thinking about a solution," she said.

Agile may be more useful for "iterating on what you have discovered, test, learn, adapt, reshape it and develop an actual tool."

When it comes to change management, Ms Westendorp stressed that you should not assume people will change just because a project has approval from senior management.

But a strong message from management can certainly help, if they say, "this is how we're going to do it, whether you like it or not, we see the benefits and believe it fits into our strategy."

Andreas Polidis, Ionic

Andreas Polidis, IT advisor of Ionic Shipping, emphasised the importance of being very clear about the scope and value of the project, to ensure you are not just running it "for the sake of IT".

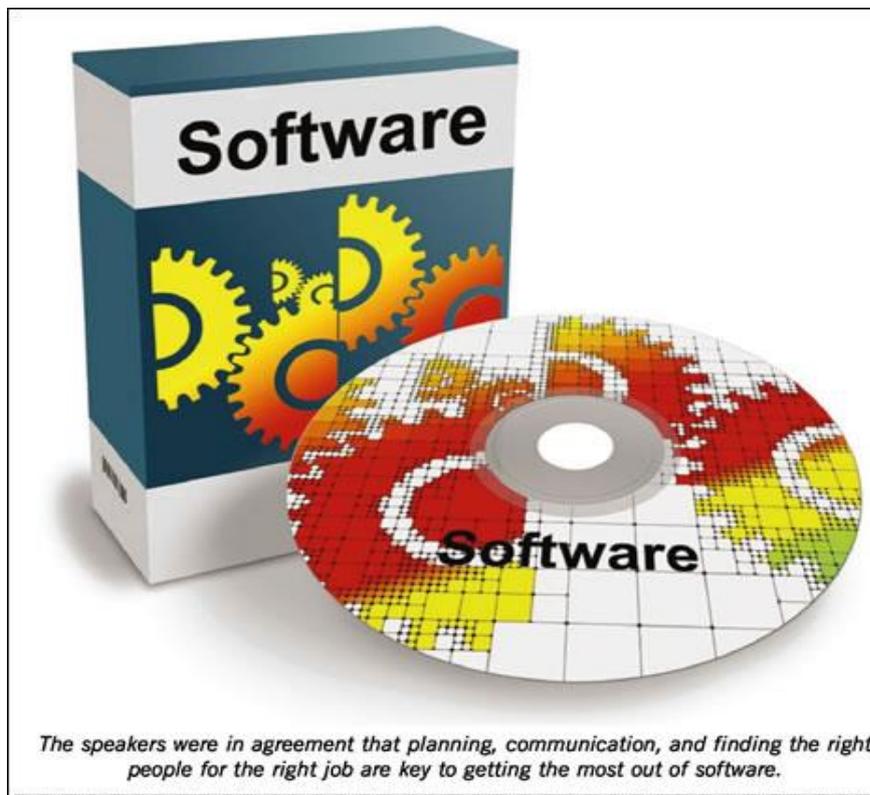
His talk focussed specifically on shipboard software implementation, which "in most cases is the most difficult part".

Ionic Shipping is based in Glyfada, Athens, with 7 tankers and 16 bulk carriers.

As with any software project, you have to be very clear about the project scope – who will benefit from the project, he said.

You need to identify how the crew are going to be involved in the project, and how you expect them to change how they work, and what effort they will need to make, bearing in mind crew will be operating vessels at the same time.

You will need to provide training or support, familiarising people with the software or solution you are implementing. It can be helpful to give people a "test environment" they can learn with, he said.



It can be helpful if you can limit the amount of new software functionality provided to people, so you limit the workload and potential confusion understanding the new tools.

It helps if they get advance warning about what is coming.

You may find some nationalities of crew have different characteristics to others, in terms of whether they easily follow new guidelines provided to them about using new software systems, or they prefer to take their own initiatives. Many

crew members may not be from the "internet generation" and slower to adopt new software methods, he said.

Crew members who are less committed to their employer may be less motivated to do the work of learning new software, he said.

It is helpful if you can find a "power user" onboard, who can be a liaison between the office IT team and the rest of the crew.

If the crew changes partway through the project, there needs to be a way for knowledge to be passed from departing crew to the new crew, and include information about the software in training material which is given to manning agents.

You also need to consider the communications infrastructure from the vessel, in terms of bandwidth and reliability. If it can't support your proposed software, the whole project may be a waste of time, he said.

When it comes to change management, the key is communication, he said.

"You need to involve all the people. If you communicate every change you are planning to do, that is the key factor to implement these changes without any resistance."

Software approaches

When Euronav is considering software products and vendors, it is keen to find options where it can maintain flexibility, including to change vendor. The priorities of shipping companies continually change. "That's why we cannot be locked with decisions that we take," said Stefanos Christakis, innovation manager of Euronav.

Where it buys software off the shelf, the company is keen on vendors which give it an opportunity to get involved in their product development road map.

Developing software in-house is "probably the least desirable option, we're trying to move away from that."

It helps if software is intuitive, or explains itself, so it can be used without a manual, he said.

Agile can be a useful tool in engaging people early and avoiding going in the wrong direction. But whether you use it will not be a key issue in whether or not your project is successful. A more important issue is the level of focus on how the software is designed, he said.

An iterative approach to software development can be better than sending someone to work on developing something for three months and having a risk they go off track. You may also find that priorities change over time, so projects need to be re-focused.

You do not want to be encouraging people to use a "minimum viable product" which is not in its final form, otherwise people will just say, they will wait until it is finished before adopting it. It makes it harder when you have to say to people, "we have this new thing now, you are requested to adopt it."

People and personalities

Mr Christakis sees four "types" of people you may encounter as a software development person.

The "visionary" is someone who had the idea for software, is excited about it, but doesn't necessarily have the patience to explain it to others, go into detail, and make it work. "It's nice they have this vision, it is something you can work [with], but it is probably not the guy who will be able to help you implement the project."

You meet "short term" people, often quite senior in the company, who might be just focussed on the immediate business problems. That's "not someone we can really work with."

You meet "impatient" people who want digital technology right now. "If you question the urgency, sometimes you see it is not really urgent, just that they haven't really prioritised in a proper manner," he said.

"The [people] you really want to work with are the ones that have the focus, they are open to listen. They have the patience to look at it, see how it works. They are open to other options, and to shift the way they work a bit, if this means that by using this software they will be more efficient."

"The implementation of software always comes together with a change in working process – it is important to understand that."

It is important not to let people stretch the scope too much. "A lot of people have different ideas and opinions about how it should work, what it should do. It is a role of the business analyst and project team to be critical and challenge that."

You need people in authority who are able and willing to make decisions. "You find you go into endless discussions about a particular specification, how it should work, what is the interface. Sometimes it makes sense to go back to the beginning and start over," he said.

You need to involve people as early as possible. "Don't think that just because you have software which seems to match what they want, you can start working on the project. Make people part of your project from the beginning. It is important to prepare people for what is coming."

For big projects, you can involve the company's in-house communications department – including making banners, newsletters and videos for the vessel.

If you nominate people as "ambassadors" for the project, they can feel more involved. The more people get involved, and have invested their time in the project, the more they feel they have a stake in its success.

The ambassadors can explain to their own colleagues why new software technology is helpful. This is very different to someone from the IT department trying to explain it.

You always need to have a ready answer in case someone asks you "why did we do this". Some of the people who show the most resistance to using new software are people who are comfortable using Excel for their own analysis. They don't accept that a software system might make life easier for the whole company. These people can be jokingly labelled "Chief Excel Officers", one audience member said.

"I fully understand what you mean, we know these people," Mr Christakis replied. "The approach we take is to find ambassadors, people who are willing. Don't ignore the 'Chief Excel Officers'."

“But you cannot get everyone onboard from the beginning. You have to pick the right people, get them onboard slowly, you’ll see everybody else will also come onboard, one point or another.”

TankerOperator

Inséré 29/04/21 DOSSIER Enlevé 22/05/21

Autonomous ship outlook from the Captain’s chair

Capt Eero Lehtovaara, a master mariner and accomplished advocate of a ‘manned autonomous’ strategy, was recently appointed chairman of One Sea, the digital and communications technology grouping which aims to develop an autonomous maritime ecosystem by 2025. He has clear ideas about the next steps.

As head of regulatory & public affairs, Eero Lehtovaara plays a key role at ABB Marine & Ports at a time of accelerating and increasingly diverse use of digital technologies across the maritime industries. In doing so, he brings experience as a mariner in coastal and deep-sea trades to the table, and knowledge of ship-shore digital communication amassed at ABB and from his days at ship performance monitoring specialist Eniram (now owned by Wärtsilä).

The skill sets could hardly fit better with his extra-curricular role as chairman of One Sea, the Finland-based industry alliance aiming to develop an autonomous maritime ecosystem by 2025. Appointed in January this year, Capt Lehtovaara has set out to develop the One Sea autonomous ship agenda and its international membership base to ensure that the fruits of its labours resonate at the global level.

There are many fantastic opportunities and just as many major challenges relating to automation in shipping, he believes.

One Sea has already come a long way since it was set up in 2016. An ecosystem hosted by Finnish DIMECC (a digital, internet, materials and engineering co-creating ecosystem), it has already attracted as members a string of blue-chip names including ABB, Cargotec, Ericsson, Inmarsat, Kongsberg and Wärtsilä. And, in a major development celebrated earlier this year, Japan’s Monohakobi Technology Institute, NYK’s wholly owned research subsidiary, joined the ranks.

Clarification needed

Capt Lehtovaara has identified several key challenges that must be addressed for shipping’s digital journey to continue efficiently. The first of these seems simple but, in practice, is far from it. It boils down to terminology. “We need to decide and agree on some definitions,” he said. “People mix up terms like autonomous operation, remote operation, autonomy. These are different technologies but the terminology often gets used as though they’re the same thing. What they do have in common, however, is that they are intended to support seafarers in ship operation thereby improving safety and raising efficiency.

“We can do almost anything with the digital technologies that are available today and we’ve already seen both remote and autonomous operations completed successfully at a local level,” he continued. “This is a great technological achievement but it’s not what we’re talking about.

We have to differentiate between international commercial trade carried out under the auspices of the IMO and its regulations; and coastal shipping where domestic trade

operates under a national jurisdiction. The timescales and applications of the latest technological advances are entirely different in these two environments and must not get confused.

"My concern is that if we who are engaged in shipping every day don't understand or can't agree on terminology, how can we expect regulators to understand what we're talking about? It becomes a puzzle that might never be solved," he declared. "It would be so much easier to communicate with customers, flag states, class societies and eventually the IMO if we are all talking about the same thing."

Collaboration required

A second challenge could well prove to be a harder nut to crack. Partly linked to the question of definitions, Capt Lehtovaara believes that standardisation is a key requirement for digital development across the marine sector. As things stand, shipping is split into many different interest groups, he says, giving the example of a bridge system manufacturer who traditionally has little in common with an engine control system manufacturer. Both must now talk the same language with the same voice, he said.

"As an industry, we need to figure out how to talk to the IMO effectively with one voice," he said. "To do this, we must look at our own business and bring different interest groups together around the same table. We need international standards which are acknowledged by all maritime authorities such as the US Coast Guard and the European Union, for example. We must have common standards and rules that do not conflict."

This is essential if shipping is to be able to communicate effectively and enable the proven benefits of digitalisation to become available not only in countries' own coastal trades but, crucially, in the deep-sea sector too, said Capt Lehtovaara. Therefore, he sees one vital aspect of One Sea's future role as a facilitator for commonality between different interest groups.

Key industry associations include the International Chamber of Shipping, BIMCO, Sea Europe, the International Association of Classification Societies, the International Union of Marine Insurers, the Nautical Institute (of which he is a Fellow) and the International Council on Combustion Engines.

Setting an example

He sees the collaboration that is evident between One Sea members as a blueprint for what could be achieved in a wider shipping context. Although some of the organisation's members compete fiercely with each other in a commercial context, their collaboration within One Sea works very well.

"There are clear unspoken (as well as spoken) rules about what can be discussed and what can't," Capt Lehtovaara said. "Individual company lawyers may get a bit concerned but, in practice, the cooperation between our members works surprisingly well. We are all veterans of the shipping industry and we have a common goal."

Capt Lehtovaara also sees the One Sea collective as a means of demystifying shipping's digitalisation process. He explained that automation is not an alternative way of operating ships; he stresses again that it is a supplementary portfolio of systems that raise efficiency, enhance safety, enable improved decision-making both ashore and afloat, and potentially lighten the seafarer's workload.

Although the technologies are developing fast, the concepts are not new. And he points to radar, unmanned engine rooms, electronic charts, autopilots and integrated bridge navigation systems as waypoints on shipping's technological voyage to date.

Summarising his priorities, the One Sea Chairman said: "I want to see a better understanding of what we're all talking about so that we can all cooperate in the development of automated marine traffic from a regulatory point of view. I'd like One Sea to play a greater role in the global discussion. And I'd like One Sea to align and unify shipping's trade associations and member groups so that we can communicate to everyone more effectively." DS

Inséré 30/04/21 BOEKEN LIVRES BOOKS Enlevé 30/05/21

Vissen in het Verleden

BOEKBESPREKING door : Frank NEYTS ”.

Bij de Vlaamse Uitgeverij Kannibaal verscheen recent een buitengewoon interessant boek getiteld "Vissen in het Verleden. 500 Jaar Vlaamse Zeevisserij". Ann-Katrien Lescrauwaet, Jan Parmentier en Ruth Pirlet tekenden als auteurs. Al in de vroege middeleeuwen was de zeevisserij een permanente en drukke activiteit langs de Vlaamse kust. De zee werd steeds meer gezien als een bron van voedsel, economische ontwikkeling en culturele identiteit. De Vlaamse zeevisserij beleefde heel wat succesvolle jaren, maar werd ook regelmatig geconfronteerd met periodes van ellende en ontbering, meestal als gevolg van politieke onlusten.

Dit boek is een prachtig geïllustreerd en grondig naslagwerk over de rijke visserijgeschiedenis in Vlaanderen. Het is het resultaat van uitgebreid archief- en literatuuronderzoek, nieuwe datareeksen en een nauwe samenwerking tussen het Vlaams Instituut voor de Zee (VLIZ), het Museum aan de Stroom (MAS) en het NAVIGO-Nationaal Visserijmuseum DAILY COLLECTION OF MARITIME PRESS CLIPPINGS 2019 - 048 5Distribution : daily to 41.100+ active addresses 17-02-2019 Page 32

Oostduinkerke."Vissen in het Verleden. 500 Jaar Vlaamse Zeevisserij" (ISBN 9 789492 677464) telt 240 pagina's en werd als hardback uitgegeven. Het werk is prachtig geïllustreerd. Aankopen kan via de boekhandel of rechtstreeks bij de Uitgeverij Kannibaal bvba, Appelmarkt 8, B 8630 Veurne, België. Tel.: +32 (0)58 62 37 52

Inséré 30/04/21 NIEUWS NOUVELLES Enlevé 30/05/21

Maersk pleads for military backup against west Africa pirates

By : Camille BAS-WOHLERT

The call for action comes after two of the Danish company's ships were boarded by pirates in the Gulf of Guinea within the space of one month at the turn of the year.

Maersk wants an international mission similar to the naval operation that the European Union has deployed in the Gulf of Aden, off East Africa, since 2008 and which has been credited with a sharp drop in piracy there. Fed up with pirate attacks on its fleet off the west African coast, global shipping giant Maersk is clamouring for a major naval mission to police the vital but treacherous maritime route. The call for action comes after two of the Danish company's ships were boarded by bandits in the Gulf of Guinea within the space of one month at the turn of the year. The area is a major shipping route stretching from Senegal to Angola, but it has been plagued by piracy in recent years. Armed kidnappings of seafarers reached record levels in 2020, according to the International Maritime Bureau (IMB). "In 2021 we should not have seafarers who are afraid of sailing anywhere because of piracy, this is not the age of piracy," Aslak Ross, head of maritime standards at the Danish giant, told AFP. Maersk wants an international mission similar to the naval operation

that the European Union has deployed in the Gulf of Aden, off East Africa, since 2008 and which has been credited with a sharp drop in piracy there. "A solution is to have the international community support a mission in the short term," Ross said.



The 1999 built 1092 TEU MAERSK ATLANTIC

At the same time, governments should back longer-term efforts to strengthen the anti-piracy capabilities of coastal countries, he said. Every day some 1,500 ships travel the maritime route off Africa's two largest oil producers, Nigeria and Angola, and Maersk said 50 of its vessels regularly sail in the area. Maersk is the world's largest container shipping company, operating in 130 countries and employing some 80,000 people worldwide. It moves 12 million containers every year. The waters are the world's number one spot for cargo-ship crew kidnappings, which tend to be seen as more lucrative for pirates than the traditional attacks on oil tankers. Of the 135 attacks on seafarers recorded worldwide last year, 130 took place in the Gulf of Guinea, the IMB reported.

Denmark, a Nordic nation of just 5.8 million people, boasts the world's fifth-largest merchant navy and has backed Maersk's attempts to spur the EU into action. "Denmark can make a difference but cannot solve the problem alone," Danish Defence Minister Trine Bramsen told AFP. Maersk is particularly keen on securing French involvement in anti-piracy efforts, given the country's experience with military deployments in West Africa.

"Who better than the French?" Ross said, highlighting the EU state's "historical interests" and "regular presence" in the region. A French government source told AFP that Paris does not currently envisage a European maritime operation along the lines of operation Atalanta in East Africa, pointing instead to the existence of a "coordinated maritime presence" (CMP) in the area. "The Danes are welcome to join the CMP and make a contribution," the source said. Launched this January, the EU-led CMP involves France, Spain, Italy and Portugal, and provides resources to military ships already in the gulf, in return for information and intelligence sharing.

But with no mandate for the CMP vessels to intervene in an attack, researcher Jessica Larsen of the Danish Institute of International Relations believes the EU initiative falls short of Denmark's hoped-for intervention. "There seems to be a lack of political will to launch a military operation from the European side," she told AFP. States in the region are equally concerned about maintaining sovereignty, making them reluctant to host a European operation, she added. "Nigeria is unlikely to welcome an international naval coalition as this will serve to highlight the inadequacy of Nigerian counter piracy efforts," Munro Anderson, of maritime security firm Dryad Global, told AFP.

Source: au.finance.yahoo

Inséré 01/05/21 NIEUWS NOUVELLES Enlevé 01/06/21

CMB bestelt containerschepen van 6.000 teu in China

De Belgische maritieme groep CMB, die in de containersector actief is via de divisie Delphis, heeft vier opties gelicht voor de bouw van schepen van 6.000 teu. Het worden zeer unieke schepen, waarvoor wel nog geen charter is vastgelegd.



Delphis Finland - © CMB

CMB plaatste eind vorig jaar al een eerste order voor twee schepen van 6.000 teu bij de Chinese scheepswerf Qingdao Yangfan. Het worden niet alleen de grootste containerschepen in de vloot van Delphis, maar ook de grootste containerschepen ter wereld met ijsklasse. Ze worden uitgerust met een bijzonder groot aantal aansluitingen voor reefercontainers. Van de zes opties die CMB bij de Noord-Chinese scheepsbouwer genomen had, werden er vorige week vier gelicht. De serie zal dus voorlopig al zeker uit zes eenheden bestaan, waarvan de eerste eind 2022 in de vaart moet komen.

CMB is een van de zeldzame rederijen die containerschepen van die middenklasse laat bouwen. De voorbije maanden werden vooral megamaxschepen van 24.000 teu, neopanamaxschepen van 13.000 tot 16.000 teu en kleinere schepen van minder dan 4.600 teu voor regionale diensten besteld.

Leeftijd

De gemiddelde leeftijd van de huidige vloot van schepen in de categorie van 5.500 tot 7.500 teu bedraagt volgens de Franse databank Alphaliner al 14,5 jaar. Een deel van die schepen zullen de komende jaren aan vervanging toe zijn. CMB ziet daar kansen en koos voor ijsklasse en een hoge reefercapaciteit om alle opties voor mogelijke routes open te houden.

Ook de Franse rederij CMA CGM beseft dat er in die categorie nood is aan moderne tonnage en is naar verluidt met een aantal Chinese werven in onderhandeling over de bouw van een reeks schepen van 5.400 teu, die mogelijk twintig eenheden zou tellen.

Type brandstof

In tegenstelling tot de twaalf nieuwe schepen van 13.000 teu met aandrijving door lng die de Franse carrier wil laten bouwen, zou CMA CGM de kleinere nieuwbouwschepen niet op aardgas laten varen, omdat de meerkost voor lng-aandrijving te groot is in verhouding tot de capaciteit van het schip.

Over de brandstof voor CMB's nieuwe schepen van 6.000 teu is nog geen definitieve beslissing genomen. De Belgische rederij zal dichterbij de start van de bouw van de nieuwe tonnage oordelen in hoeverre het al mogelijk is om ze op alternatieve brandstoffen te laten varen.

Stefan Verberckmoes

Inséré 03/05/21 DOSSIER Enlevé 03/06/21

Tackling the scourge of container ship fires

The proliferation of serious fires onboard container ships in recent years has shocked the shipping industry. Andrew Gray considers the causes and impact of such fires and the urgent efforts being made by a wide variety of stakeholders to solve this seemingly intractable problem.

Incidence of container ship fires

Over the last decade there has been a 70% fall in ship total losses. This has been widely credited to long term improvements in ship safety management and loss prevention programmes. Counter to this trend, there has been a substantial increase over the last decade in the number of fires in containers carried onboard container and ro-ro ships. One troubling statistic is that on average there is a fire onboard a container ship every week, with a major container fire occurring on average every 60 days. Nine major container ship fires were reported in 2019. By comparison, despite an overall fall in casualties in the first half of 2020, ten such incidents were reported.

Cause



This disturbing situation has been linked to both supply chain issues, including the widespread non-declaration and mis-declaration of dangerous goods cargoes, and inadequate fire-fighting systems onboard many of these vessels.

About 10% of laden containers or 5.4 million containers being shipped annually are estimated to contain declared dangerous goods. Of these, about 1.3 million containers may be poorly packed or

incorrectly identified, indicating the scale of potential risk.

A 2020 study by the New York based National Cargo Bureau (NCB), supported by Maersk amongst others, revealed that of 500 containers inspected, 2.5% of DG containers imported to the USA were found to include mis-declared cargoes which represented a serious risk. Another study found there may be about 150,000 volatile containers in the supply chain annually. Undeclared or mis-declared cargoes which have become notorious for causing container fires include calcium hypochlorite (widely used as a bleaching agent), lithium batteries and charcoal. Non-declaration or mis-declaration of cargoes is generally

understood to arise from shippers' attempts to pay lower freight or circumvent restrictions on the carriage of dangerous cargoes.

Dealing with fires onboard

There has also been widespread concern about the suitability of existing ships' fire-fighting systems to deal with container fires. A 2017 study highlighted that systems originally developed for fighting fires in general cargo ship holds have proved to be unsuitable for container vessels.



Smoke detection and CO2 fire-extinguishing systems developed for large open holds may be completely ineffective within the confines of individual containers stowed beneath hatch-cover pontoons which are not gas-tight. There are calls for more sophisticated fire detection systems, utilising infrared cameras or thermal sensors installed both below deck and on deck.

While the containment of a fire within a limited number of containers remains the approved method of firefighting onboard a container ship, the equipment available is often unsuitable. Many stakeholders warn that new technical solutions are needed to make this approach effective. These issues have only been magnified by the steadily increasing size of container ships from 10,000 TEU vessels in 2005 to ultra large container ships in excess of 20,000 TEU today.

Improvements have been made to new vessels constructed after 1 January 2016 under amended SOLAS regulation II- 2/10, but there are calls for substantial changes to existing ships' firefighting systems. These include utilizing the ship's structure to create more effective fire compartments while installing enhanced below deck and on deck water-based systems to cool the ship's superstructure and prevent fire spread. On deck, monitors should be installed to create water curtains which can cool the maximum height and width of container stacks, particularly on the very much larger container ships now at sea. Other innovative fire-fighting systems are being deployed such as HydroPen, which drills through the container door and then switches mode to spray water inside the container. Without adequate ship's firefighting systems, the ability of a container ship's crew to respond to and contain a blaze is severely limited. Despite the undoubted bravery and professionalism of crews in tackling such fires, external assistance is invariably required. The ship may be a considerable distance from shore and, even when outside assistance arrives, such fires may take weeks to be brought under control. Meanwhile, a further concern is the pressure placed on the resources and expertise of the global salvage industry in dealing with the rising numbers of major container fires.



Loss and damage

As a specialist shipping law firm, we are only too aware of the increasingly severe consequences of large container ships fires. Not only have such events resulted in the injury and death of many crew members and others over the years, but the environmental implications and financial losses continue to be significant. Apart from needless injury and loss of life, potential losses from a container ship fire might include hull damage, total loss of the ship, cargo and container loss and damage, claims between ship owners, charterers and slot-charterers, environmental damage prevention and clean-up, salvage costs, wreck removal, fines, investigation and legal costs. With the increased size of container ships and their carrying capacity, a large container fire will severely impact the global marine insurance and P&I market with the sheer value of the property at risk, not to mention the GA effort of trying to collect security, vastly scaled up for the largest container ships. With present claims potentially running into tens or even hundreds of millions of US\$, there is the fear that a total loss of a 20,000 TEU vessel and her cargo might exceed US\$1 billion. A considerable burden is also placed on the salvage industry and external firefighting services, with the significant challenge of fighting such fires due to the increased beam and stack heights of the larger container ships.

In addition, ports of refuge face the nightmare of how to deal with say 10,000 burned-out container shells and their cargo, many of which are not insured and abandoned. For example, exemplary support was recently given by the Singapore MPA and PSA in providing a port of refuge to MOL CHARISMA, the latest victim of this year's major container fires. The human and financial carnage inflicted by a single undeclared or mis-declared cargo in a badly stowed container onboard a modern container ship cannot therefore be overstated.

Solutions

Major efforts are however underway to deal with this problem from both the supply chain side and in improving the firefighting systems onboard. In an ideal world every cargo loaded in every container would be checked before shipping, but the cost of such an undertaking would be immense. At the same time, there are calls for more widespread spot checks by IMO member states and shipping lines to help identify undeclared or mis-declared cargoes. Leading stakeholders are also working together to develop systems which reduce risk. The Cargo Incident Notification System (CINS) has over a number of years shared information on cargo related incidents and identified commodities which commonly cause problems during transportation. A number of shipping lines are using artificial intelligence to develop increasingly sophisticated algorithms to search through their booking systems to identify potential mis-declaration, including Hapag-Lloyd's Cargo Patrol, Exis Technologies' Hazcheck Detect and ZIM's ZimGuard. Other ventures include the

Maritime Blockchain Labs (MBL) Misdeclaration of Dangerous Goods pilot, using blockchain technology to verify documentation and demonstrate the end-to-end delivery of dangerous goods.

Meanwhile, IUMI and other major stakeholders have co-sponsored a submission to the IMO Maritime Safety Committee's 102nd session to amend SOLAS in respect of improved detection, protection and firefighting capabilities onboard container ships. Further pressure may also need to be brought to bear on rogue shippers by building a world-wide consensus for those mis-declaring dangerous container cargoes to face criminal sanctions in their home country, with jail time for deliberately endangering life and the marine environment.

Conclusion

Our global team has offices in London, Newcastle, Singapore and Miami. We advise on all aspects of shipping and international trade, from handling major casualties to dry shipping litigation and ship finance. We have been involved in many significant ship and container fire cases over the years. Most recently, our Singapore office has acted in the MOL CHARISMA container ship fire which occurred off Sri Lanka in September of this year. As a firm we share the serious concerns of our clients and the wider shipping industry about the proliferation in container ship fires. We strongly support the numerous efforts being made by different sectors, from the supply chain side to shipboard improvements, to bring this unhappy chapter in shipping history to a close.

Source: Campbell Johnston Clark Limited

Inséré 05/05/21 NIEUWS NOUVELLES Enlevé 05/06/21

Jan De Nul orders highly powered versatile trenching vehicle "Swordfish"



Jan De Nul Group has signed an agreement with Osbit Ltd (UK) for the design and construction of a new subsea trenching vehicle, named Swordfish. Delivery is scheduled for the first quarter of 2022. The Swordfish will be a high-powered state-of-the-art subsea trenching vehicle that can be fitted with either a jetting installation, a mechanical chain cutter or a combination of both to tackle a wide variety of soil conditions and bury cables up to 3 or even 3.5 metres deep.

Wouter Vermeersch, Manager Offshore Cables at Jan De Nul Group: "The Swordfish makes the perfect addition to our existing fleet of trenching vehicles providing excellent protection for cables installed by any of our Cable Laying Vessels. With its high power, the Swordfish will be able to bury the cables deeper and thanks to its hybrid mechanical chain cutting configuration the Swordfish can also tackle more challenging soil conditions, including hard clays up to 400 kPa. This new investment, together with the recent acquisition of our cable installation vessel Connector, arms Jan De Nul Group for the energy transition of tomorrow. We look forward to working together with Osbit Ltd (UK) on this project and to offer customers the best solution for their cable projects." Robbie Blakeman, Joint Managing Director at Osbit Ltd (UK): "We are delighted that Jan De Nul has selected Osbit to supply the Swordfish trenching vehicle. We worked closely with Jan De Nul on specifications and drew from our in house trenching expertise and proven technology base to develop this market leading subsea vehicle. We pride ourselves on serving a global market and as a UK based company with a predominantly local supply chain, this projects allows us to continue to strengthen our exports of specialist equipment to mainland Europe. Furthermore, it allows us to continue to invest in our people, critically the development of highly skilled engineering roles at our home base in the North East of England. We look forward to collaborating closely with Jan De Nul throughout this exciting project and delivering the Swordfish on time and fully operational for its first campaign."

Swordfish specifications

The Swordfish will be powered by 2 x 300 kW hydraulic power units and 2 x 300 kW electric HP jet pumps.

In jetting configuration, it will be capable of tackling soil strengths up to 125 kPa, thanks to its 1,120 kW of pump power. In mechanical or hybrid mode, it will be able to cope with soil strengths up to 400 kPa, using its 400 kW chain cutter tool and 420 kW additional jetting power.

The main jetting tool is combined with front cutting nozzles and additional rear backwash swords to optimize trenching performance. Thanks to the modular buoyancy the underwater weight of the vehicle in jetting mode is less than 1 tonne, resulting in a ground pressure not exceeding 5 kPa which allows trenching vehicle operation in very soft soil conditions.

The innovative chain cutter design and cable loading system minimize cable handling, plus it has the added benefit of a closed box depressor to guarantee first-time-right protection. The trenching vehicle will be launched with a dedicated A-frame and hoisting winch from one of Jan De Nul's offshore vessels. Specifically for the Race Bank Offshore Windfarm Export Cable project in the UK, Jan De Nul designed and built two intertidal trenching vehicles Sunfish and Moonfish that achieved an environmental and industry first. Both trenching vehicles received several industry awards for their innovative design and have subsequently been modified and used in support of several cable installation and protection projects in Europe.

Inséré 07/05/21 HISTORIEK HISTORIQUE Enlevé 07/06/21

A survey of maritime relations between Belgium and the united states of America (1830-1939) (II)

As the first bill (voted on 9th September 1870), guaranteeing a minimum postal service of 300,000 BF to sail to the USA, did not raise the slightest interest, the government increased the subsidy to 500,000 BF on 27th July 1871. In that year Philadelphia sought douser

contacts with the continent of Europe. This led to a treaty (24th February 1872) between the state and the "International Navigation Company" that provided for two departures in summer (May till September) and one every three weeks during the Winter. For this three steamers flying the Belgian flag had to be engaged with the co-operation of the Antwerp shipbroker's firm Von der Becke & Marsily. The "S.A. Navigation Belge-Américaine" was founded on 5th September 1872 with a capital of 5,000,000 BF. Only the two aforementioned Belgians were shareholders, each with 50,000 BF of stock. The new company was the "Red Star Line". The Americans chose the Belgian flag, as this offered the most favourable advantages when competing with the British. In addition, on 1st July 1873 a line to New York was established, and the company obtained a temporary arrangement for alternate voyages between New York and Philadelphia. Owing to the international recession, the shipping company was unable to make this a paying proposition, and for that reason a new convention was signed on 14th July 1877. Departures for New York were to be continued a 31 st December 1878 at fortnightly intervals, followed by twelve-day intervals from 30th June 1879 and ten-day intervals with a sailing to Philadelphia every twenty-four days. On 1st April 1880 it was agreed that there were to be departures to New York on Saturdays and to Philadelphia on the fast Saturday of the month, all on the basis of a maximum subsidy of 500,000 BF.

Because of the alternate sailing to New York and Philadelphia, which sometimes coincided, records had to be carefully kept. After certain changes to the convention of 14th March 1882 a new contract was drawn up on 10th March 1887, cancelling the voyage to Philadelphia and bringing down the subsidy to a maximum of 380,000 BF. The maximum duration of the voyage was shortened by 26 hours to 274 hours in Summer and by 20 hours to 304 hours in Winter. In 1892 a plan was drawn up, guaranteeing a weekly service to New York. No other ports of call were allowed except by special permission or in case of emergency. Half the fleet was to sail under the Belgian flag. A new service "à grande vitesse" was granted by the American government to the "Red Star Line" on condition that the town of Antwerp put at their disposal a suitably sized dry-dock for repairs, an ice breaker to keep the Scheldt open in Winter and a direct railway line connecting with Berlin, Cologne, Basel and Paris, etc. The latter happened to be already in existence. The company was entitled to the entire profits from the mail conveyed by the ships. In a nutshell, it can be said that despite the unfavourable conjuncture, the voyages became more regular and more frequent, thanks to the subsidies. Not only was the duration of the voyage shortened, but the fleet grew in numbers and even more in tonnage (Table 3).

Table 3. – Survey of the voyages of the "Red Star Line" (out and home)

Year	No. of voyages	Average takings per voyage	% passengers
1874	46	—	—
1875	56	—	—
1876	56	59,307 BF	16.2
1877	49	57,698 BF	21.4
1878	50	62,147 BF	16.6
1879	79	63,387 BF	18.6
1880	99	77,805 BF	27.6
1881	125	76,592 BF	37.0
1882	117	76,627 BF	35.6
1883	126	82,026 BF	36.1
1884	128	81,619 BF	33.2
1885	128	78,479 BF	34.2

The "Red Star Line" succeeded in 1887 in averaging 264 hours 5 minutes on 50 voyages Antwerp/New York and 268 hours 24 minutes on the return, which was considerably faster than the speed imposed by the state (an average of 289 hours). On this run eight steamers were in operation in 1882 with a net tonnage of 17,781 tons. Besides these, two others were under construction (around 6,700 tonnage). By 1st January 1914 the shipping line owned five ships with a net tonnage of 42,324 or nearly 18%

of the total Belgian fleet.

On the outward voyage the "Red Star Line" cargo consisted of sheets of glass, wire from the Rhineland, steel girders and other ironware, primarily from Germany and Lorraine, wines from the Rhine and the Mosel districts, and coal as ballast when there was insufficient cargo. An innovation was the export of chicory, which required refrigeration (-4° C). It was principally in the transport of emigrants that the "Red Star Line" gained renown. Her packet

boats had been specially designed with the transport of passengers and cargo in mind (Tables 4 and 5).

Table 4. – The evolution of passenger transport by the "Red Star Line" ³³.

Year	Outward journey		Return journey		Total	% outward
	Cabin	Steerage	Cabin	Steerage		
1873					2,900	
1874					5,744	
1875					7,050	
1876					5,696	
1877					5,834	
1878					4,955	
1879					10,527	
1880	942	16,028	591	1,171	18,732 ³⁴	90
1881	1,502	25,083	877	2,248	29,710	89
1882	1,858	23,015	1,192	3,298	29,353	84
1883	1,911	23,303	1,361	6,061	32,636	77
1884	2,070	21,546	1,696	7,366	32,678	72
1885	2,463	20,362	2,134	9,000	33,959	67
1886	2,620	18,298	2,384	5,583	28,885	72

On the return voyages the "Red Star Line" brought back the usual cargoes of cotton, tobacco, timber and especially cereals. Between 1883 and 1886, 46% of the total grain imports from the USA were transported by the ships of the

"Red Star Line". Practically no information can be found concerning profits. One account from the shipping company drawing attention to their request for subsidies concerns a journey by the "Westland" in 1884.

From the credit balance of 9,116 BF the sum of 7,949 BF had to be paid out on dry-dock and upkeep charges. Another account shows that the total number of journeys for

Table 5. – Passenger transport out and home "Red Star Line".

Year	1st class	2nd and 3rd class	Total
1906	6,679	99,165	105,844
1907	6,506	115,807	122,313
1908	5,375	65,217	70,592
1909	6,379	83,192	89,571
1910	8,476	89,787	98,363
1911			±121,000

1879-84

expenses on departure from Antwerp :	63,882 BF
expenses on arrival in New York :	12,472 BF
expenses on departure from New York :	57,076 BF
expenses on arrival in Antwerp :	47,277 BF
received in Antwerp : cargo :	45,777 BF
received in Antwerp : passengers :	61,317 BF
received in New York : cargo :	52,776 BF
received in New York : passengers :	29,953 BF

produced a credit of 1,290,334 BF.

However, given the depreciation of the ships and the company's general expenses (unknown), they must have been overdrawn. An entry on 31st December 1884 shows that the company's capital amounted to 13,615,000 BF in shares. At that time the steamers had depreciated in value by 3,254,440 BF. The assets were valued at 19,659,288 BF. In addition to the debit and credit columns there remained reserves of 396,597 BF. The account disclosed that to date no dividend had ever been paid out It was imperative for the state to subsidise the fleet if it was to be maintained.

In 1902 the "International Company of New Jersey" changed its name to the "International Mercantile Company". Before the First World War there existed a weekly service to New York, departing on Saturdays from Antwerp and calling at Dover on the way. Alternately they sailed once or twice a month to Philadelphia (18 times yearly) and ran a fortnightly freight service to Boston. Starting in 1920 the ships of the "Red Star Line" sailing from Antwerp called at Southampton and the following year they also included Cherbourg. The recession and the decreasing numbers of emigrants caused the size of the fleet to shrink, and by 1935 the remaining ships were sold off to A. Bernstein of Hamburg, who retained the crews and continued on the already established route.

Other shipping companies established in Antwerp appealed in vain to governmental departments. The first to make an appeal was the "White Cross Line", founded in 1865 by the Swiss Daniël Steinmann. About 1872 he opened a shipping line to New York with three steamers. Theodore Engels and Company also started a line in 1875. When Steinmann found himself in financial difficulties, he proposed working with Engels, probably in the year 1883, since Engels in his correspondence requesting help from Brussels also mentions Steinmann's shipping lines with his own. Between September 1882 and August 1883 Engels succeeded in completing 26 sailings to the U.S.A. with four ships. Three thousand seven hundred and twenty passengers (out and back) were transported and 119,954 tons of freight were carried. Steinmann completed 19 voyages with four ships, 2,095 passengers and a cargo of only 74,060 tons. From 1884 to 1886 three steamers of Engels and Company were in service, sailing to Boston, New York and Halifax. In 1885, 18 voyages were made. By 1888 Steinmann still owned one ship and Engels sold two of his three steamers. Renewed claims for subsidies were refused on the grounds of irregular sailings. Six years later both companies had ceased to exist.

In October 1885 the "Furness Line" opened a fine to Boston with three steamships. Fruitlessly did their agents Kennedy and Hunter seek to obtain exemption of payment on certain dues.

We would like also to mention the "Phoenix Line", which sailed under a foreign flag and was owned by the ship-owning Wilson family from Hull. From 1896 on they ran a line between Antwerp and New York with hired steamers. The oil companies were the first to launch ships for the transport of crude oil, for which they founded subsidiary companies. One example is "American Petroleum SA", founded in 1891, which owned three ships. Shortly after this a fourth was acquired bringing the total tonnage to 8,000 tons. Just before the First World War another two ships were added (together making 9,500 tons). By 1913 the company owned 10 ships and 21 lighters, though after the war only the "Ampeco" remained. In 1925 the 12,360-ton "Motocarline" was launched and in 1937 the "Esso Belgium" (15,000 tons) came into service. Just before the second world war the company was renamed "Standard American Petroleum Company" (Belgian Ltd company) and owned two ships. Another case was the "Belgian Gulf Oil Ltd Company", an amalgamation of three companies which started in 1933. The oldest was the "SA pour l'Importation d'Huiles de Graissage" (1891), which owned four ships (12,050 tons).

During the First World War a final but important step was taken by the government which was to influence Belgian-United States maritime relations. A "Commission for Relief in Belgium" was set up to provision the population during the difficult war years. In January 1916 they requested and obtained from the Belgian State that all suitable steamers flying the Belgian flag should be put at their disposal to sail between the USA and Rotterdam. Only 24 ships were found to be suitable, whereas twice as many were needed. Therefore the government entered into negotiation with the shipowners. The Brys and Gylsen Group suggested issuing two bond issues: one for 25 million and one for 75 million BF, the interest and capital of the latter being underwritten by the State. The potential ban was to be guaranteed by the value of the fleet of 39 ships that were yet to be built together with the profits made during the war years. Thus the "Lloyd Royal Belge" came into being on 26th June 1916. The Brys and Gylsen Group had three Belgian and two British companies under their control: the "Gylsen Shipping Company Ltd", the "Antwerpsche Zeevaart Maatschappij Ltd" and the "SA de Commerce et de Navigation" on the one hand, and the "Brys and Gylsen Ltd" and the "Anglican Steamship Company" on the other. Their national character was to be respected. At least three quarters of the ships had to be put on regular runs. Two government commissioners were appointed and the shipping companies could rely on the support of the government.

The fleet consisted of 35 vessels. Eighty per cent of the total assets, valued at a minimum of 100 million BF, were transferred to the "Lloyd Royal". This company preferred a quick expansion to building up reserves or paying out dividends. After the war the "Lloyd Royal Belge" started a line to New York, Philadelphia, Baltimore, New Orleans and Galveston. Not

without cause did the shipowners expose themselves to criticism by the shipowners' union, which accused them of unfair competition, seeing they had the advantage of government backing. The ships were in a bad state of repair, and the service left much to be desired. Finally the government became the shareholder. The debts were paid by selling off the ships. The dead-weight tonnage of 330,527 tons on 52 ships in 1923 dropped to 136,775 tons on 18 vessels in June 1927. In 1930 the "Lloyd Royal Belge" still operated a service to New York every ten days. The same year a merger with the "Compagnie Belge Maritime du Congo" became inevitable, the new firm becoming the "Compagnie Maritime Belge (Lloyd Royal)".

We shall end this chapter with a survey of shipping lines at home and abroad which covered a regular route between Antwerp and the USA (Table 6).

Table 6 (a). — Situation 1929.

Company	Ports of destination	No. of ships	Net ton	No. of voyages
Lloyd Royal Belge	New York	10	142,704	33
Red Star Line	New York, Halifax	9	490,730	41
American Diamond Lines (N.Y.)	New York, Philadelphia, Boston, Baltimore, Portland (Maine)	13	168,701	38
Arnold Bernstein (Hamburg)	New York	8	126,047	36
Hamburg-America Line (Hamburg)	San Francisco, Seattle, Vancouver	7	92,359	18
Norddeutscher Lloyd (Bremen)	San Francisco, Vancouver	12	78,974	15
Ellerman's Phoenix Line (Hull)	New York, Boston	10	65,399	17
Cie Générale Transatlantique (Paris)	N. American Westcoast	7	42,744	9
North Pacific Coast Line or Holland-America Line (Rotterdam)	San Francisco, Vancouver	8	100,652	17
Ostasiatische Kompagnie A.S. (Copenhagen)	San Francisco, Seattle, Portland	6	56,244	10

Table 6 (b). — Situation 1939.

Company	Ports of destination	No. of ships	Net ton	No. of voyages
Compagnie Maritime Belge	New York	6	145,217	37
Holland-American Line (+ Red Star Line) (Rotterdam)	New York	19	464,043	57
Black Diamond Lines (N.Y.)	New York, Philadelphia, Boston, Baltimore, Newport, Portland (Maine)	12	283,596	72
Hamburg-America Line (Hamburg)	San Francisco, Seattle, Portland, Vancouver	12	216,343	39
Westfäl.-Larsen & Cy A.S.	Westcoast	8	117,296	27
Isbrantsen-Möller Line (N.Y.)	New York	15	58,391	29
Cie. Générale Transatlantique (Paris)	Westcoast	10	109,349	20
Fred Olsen Line (Oslo)	Westcoast	2	8,666	2

The achievements

In the light of the present report we can give only an idea of the general trend. These results are to be found in the Appendixes.

In relation to harbour traffic and the growth in the average tonnage of ail shipping docking in the port of Antwerp it is interesting to note the following points.

Twenty years were needed between 1850 and 1870 to double the tonnage, whereas alter that it only took 10 years to do the same, owing mainly to the introduction of steamships. Once again it took twenty years from 1880 to 1900 to double the tonnage, followed by a

gradual rise towards 1913. A comparison of the 1913 level with that in 1939 shows a period of stagnation, except for a small rise above this level during the second half of the twenties (Table 7).

Table 7. – Average tonnage (Moorsom ton) of ships arrived in Antwerp.

Year	Tonnage	Year	Tonnage	Year	Tonnage	Year	Tonnage
1850	147	1875	463	1900	1,276	1925	2,026
1855	149	1880	586	1905	1,606	1930	2,133
1860	191	1885	890	1910	1,869	1935	1,981
1865	238	1890	1,025	1915	2,005	1939	2,036
1870	300	1895	1,152	1920	1,411		

In relation to the general incoming harbour traffic, the contribution of the USA-route was considerable : in

1820 18.6%, 1840 15.63%, 1880 19.9%, 1890 16% and 1900 12.3%. Owing to the Civil War a low of 5 to 7% was reached in the years 1860 to 1865, while the last quarter of the 19th century especially was the best, with a Peak of 20% in 1880. Immediately after the war the figure was 18%, but this went down again to an average of 10% (Appendix VI). In comparing the figures available, it is striking to see that between 1850 and 1939 the average tonnage of ships on the transatlantic route was 40% higher than the general tonnage of all incoming shipping put together. This can only be explained by the introduction of giant steamers on the transatlantic line. The second conclusion is drawn from the steadily increasing number of ports in the Pacific Ocean open to in- and outgoing vessels between the States, more especially so alter 1923.

Let us now review the proportion of the total arrived tonnage in Antwerp for the principal nationalities (Appendix V). The German flag was the most frequently observed in the port of Antwerp between 1830 and 1865. Originally, the Stars and Stripes were also well represented but by 1860 ships under the American flag had drastically diminished in number. With the exception of the early post-war years, the percentage of American shipping continued to fall to less than 5%. It was the British who succeeded in getting the lion's share for themselves in 1865 (up to about 60%).

Alter 1918 their predominance was to slowly diminish in proportion to the steady growth of the German fleet already preparing for the Second World War — an occurrence similarly noted before 1914. The Belgian flag was then well above 10% between 1830 and 1835, and the same position was reached once more between 1880 and 1900. In the twenties it remained steady between 6 and 7% but alter that fell back to 5%.

The Belgian flag held its own better on the transatlantic route: very low (to a maximum of 6.5%) till 1860 — a period in which the USA held the major part of the traffic —, rapidly rising to 49% between 1875 and 1895. The setback came on the eve of the First World War, when it fell to 17.5%. This level was attained once more in 1924, only to diminish gradually again to 10% alter 1930 (Appendix VI).

We shall now analyse the figures for cargo and passenger transport. First of all, in the aforementioned period, we notice that our balance of trade with the USA always fell short, an imbalance that went back to the days of Willem I, when bricks were transported as ballast. However, between 1924 and 1929 this product became an important export item, reaching a peak of 130,000 tons in 1927. Unfortunately the weight was of no comparison to the value. In 1914 18% of ships sailed under ballast to the USA, even 68% by 1919, a figure which then crashed to 6% in 1929: by 1939 it had returned to 18%.

In our foreign trade the USA came fourth alter Great Britain, France and Germany. This was the case in the years preceding the First World War, as also in the period 1929 to 1939. In 1895 imports from the USA amounted to 7.9% and in 1913 to 8.3% of total imports in Antwerp, whereas our export figures were 3.4% and 2.9% respectively. The Belgian Luxemburg Economic Union imported an average of 9.1% from the USA and exported 6% on average, but sometimes lows were recorded. The slump in freight transport charges in the twenties hit the transatlantic route badly, and the depression was also particularly responsible for its damaging effect on commercial relations with the USA In this manner total Belgian Luxemburg Economic Union exports dropped from the 100 index to 81 in 1929, whilst its exports to the USA dropped to 53.5%.

The most important products imported from the USA between 1860 and 1939 were: cotton, cereals, oil (after 1870), cars (especially after 1920), timber and, to a lesser extent, coffee (till 1900), tobacco, fruit, meat and linseed (cattle feeder) (Appendix VII). We would like to mention in passing the import of animal fats (in 1880 — 23,354 tons; in 1890 — 25,040 tons) and iron ore (the record year being 1900 with 20,692 tons). Honey was also regularly imported till the First World War (as much as 1,252 tons in 1910).

J. Heffer considered sugar and sheet glass the most important exports from Belgium to the USA before 1900. In fact, not only was the supply more varied, but there was no less in value or weight of other products. In this manner Belgium exported relatively large quantities of iron and steel, zinc, cement, rags, hides and also glass for mirrors (up to 15,568 tons in 1928), mineral water and chicory (fresh and roasted) (Appendix VIII). On the other hand the export of cement and sheet glass to the USA diminished in importance; in 1900 it was still 30% and 16%, by 1910 only 3.8% and 7.9% respectively. In 1880 32% of glass exports still went to the USA. The export of mineral water and chicory did not get established till the end of last century. In 1890 there is a mention of 498 tons of chicory and 1,411 tons of roasted chicory; in the same year mineral water exports to the States were valued at 2,472,587 BF, which equalled about 68% of total mineral water exports for that year. The fact that cement and glass were such successful exports naturally had to do with the expansion of these fields in industry. The production of glass in Belgium was already a long-established tradition. It had risen from 1.28 million m² in 1841 to 15.86 million m² in 1875, reaching 33.44 million in 1899 and, after a slight decrease, climbing to a peak of 61.66 million m² by 1929. In 1933 production fell to a third. Till about 1890 the USA remained our best customer and not long after was displaced by Great Britain. When the war ended demand from the USA continued to decrease. The reason for this was protectionism. When the USA signed a commercial agreement with Czechoslovakia in 1937 the import duty on glass was lowered. The clause of most favoured nation allowed Belgium also to take advantage of this and glass exports to the USA recovered.

1843-1852: 9,178	1863-1872: 3,127	1883-1892: 30,834	1903-1912: 69,792
1853-1862: 8,411	1873-1882: 12,727	1893-1902: 27,747	

Emigrants were, in a way, our most important export. Especially the years

between 1880 and 1913 marked the best period for passenger transport services (Table 8).

After the war stricter immigration laws in the U.S.A. put a stop to this source of income, though migration to Canada grew in importance. So, in 1929 there were only 11,430 migrants in Antwerp of which 8,324 travelled to Canada ".

* * *

From the facts already mentioned we may conclude that maritime relations between Belgium and the U.S.A. were marked by significant fluctuations and a continual trade imbalance. The sway the American flag originally held on this route had to make way for other countries. It still took many years before Belgium was able to realise her endeavours in running a regular service. This finally came about thanks to considerable financial assistance from America and the Belgian government. The route was kept going on basic products such as cotton, cereals and oil. Only a few manufactured goods from Belgium enjoyed temporary success. Together with the migrants, they formed the main part of the return cargo. This exchange of cargoes underwent too many exacerbating factors to ensure the continued commercial success of the line.

Appendix II. — Index evolution of the Belgian merchant fleet (1840-1939).

Year	Index	Year	Index
1840	11.8	1895	127.6
1846	13.9	1900	131.8
1850	16.0	1905	132
1855	18.3	1910	163.3
1860	20.9	1914	168.7
1865	24.8	1920	170.3
1870	31.4	1925	193.4
1875	60.3	1930	188.2
1880	84.3	1935	204.8
1885	111.6	1939	232.8
1890	122		

We choose as basic index the most objective criterion viz. the arithmetical mean of the average yearly tonnage. There are no figures available for 1845.

Appendix III. — Incoming ships and tonnage in Antwerp, 1840-1939 (1,000 Moorsom tons).

Year	Ships	Tons	Average tons
1840	1,172	154	131
1845	1,941	247	127
1850	1,426	205	143
1855	2,003	318	158
1860	2,568	467	181
1865	3,010	664	220
1870	4,125	1,167	282
1875	4,267	1,838	430
1880	4,482	2,623	585
1885	4,420	3,422	774
1890	4,728	4,506	953
1895	4,653	5,364	1,152
1900	5,244	6,692	1,276
1905	6,034	9,851	1,606
1910	6,770	12,654	1,869
1913	7,056	14,147	2,005
1920	7,698	10,859	1,411
1925	9,971	20,202	2,026
1930	11,002	23,465	2,133
1935	11,125	22,035	1,981
1939	9,524	19,390	2,036

Sources : K. VERAGHTEK, *op. cit.*, I, pp. 19-20 : the figures of the Chamber of Commerce are useful for the conjunctural trend. For the years 1895-1939 see *Annuaire de la Chambre de Commerce d'Anvers*, 1935, p. 151 ; 1938-1939 : pp. 219-220. Till 1887 the reports of the Chamber of Commerce mentioned the steamships on inland waterways ; this modifies the incoming tonnage figures by 4 to 6%.

Appendix IV. — Dismantled ships and their tonnage (Moorsom) in Belgian harbours on 1st January.

Year	No. of ships			Tonnage (Moorsom)		
	Foreign	Belgian	Total	Foreign	Belgian	Total
1930	5	6	11	24,121	14,311	38,432
1931	26	27	53	103,752	62,254	166,006
1932	44	54	98	163,104	132,555	295,659
1933	31	53	86	147,859	126,676	274,535
1934	21	38	59	102,649	94,037	196,686
1935	10	26	36	45,227	60,524	105,751
1936	3	9	12	8,628	20,303	28,931

Source : ARA, Bestuur van Zeevezen, no. 3430, Statistiek der ontstelde schepen (verschillende Belgische havens), 1929-1936.

*Appendix V. — Share of the most important nationalities
in the incoming tonnage at Antwerp, 1820-1939.*

Year	U.S.A.	Belgium	U.K.	Germany
1820	23.6	30.9	21.3	9.8
1825	17.1	55.8	11.4	7.2
1829	19.4	34.9	23.3	8.5
1835	15.0	15.3	14.9	32.7
1840	18.9	11.4	14.8	27.9
1845	15.2	12.5	8.2	27.8
1850	12.5	21.9	16.5	20.5
1855	14.3	12.8	19.1	21.1
1860	20.0	4.0	17.8	19.7
1865	3.0	6.8	22.5	24.2
1870	1.7	3.9	58.3	7.8
1875	3.6	8.3	56.2	7.0
1880	2.1	10.1	59.9	6.4
1885	0.6	10.1	61.3	8.3
1890	1.6	12.0	60.8	12.8
1895	0.4	10.2	53.1	23.8
1900	0.0	7.8	48.2	23.2
1905	2.6	5.6	50.4	24.3
1910	0.2	8.7	46.0	28.7
1913	1.7	6.5	43.6	32.6
1920	15.2	10.0	43.6	1.6
1921	8.2	5.9	48.9	3.4
1922	6.4	6.0	45.2	7.8
1923	4.3	7.0	42.3	10.8
1924	4.2	7.1	39.0	13.8
1925	3.6	6.3	37.4	15.4
1926	3.3	6.2	40.7	15.8
1927	3.1	6.3	37.4	18.6
1928	3.2	6.3	35.4	21.0
1929	2.9	5.9	34.1	22.8
1930	3.0	6.0	32.0	23.2
1931	3.2	5.5	31.9	23.3
1932	3.6	4.2	32.0	22.0
1933	3.3	4.2	29.2	29.8
1934	3.1	4.8	26.5	25.0
1935	2.7	4.5	24.5	26.5
1936	3.0	4.4	23.3	26.2
1937	3.1	4.6	24.1	26.7
1938	3.1	4.8	23.7	25.3
1939	3.2	6.0	21.8	22.2

Source : Haven van Antwerpen, *Statistiek der zee- en binnenscheepvaart*, from 1913 on (ed. Port Service).

The figures for the period 1820-1895 : K. VERAGHTERT, *De havenbeweging te Antwerpen tijdens de negentiende eeuw*, IV. Bijlagen, bijlage XCI.

For the years 1900, 1905, 1910 : SAA, MA, 36238, 36243, 36248. We had to calculate the totals for 1900 and 1905. In 1905 some ships of the "Red Star Line" were registered under the American flag. This was not the case for 1900 and 1910.

Appendix VI. — Incoming ships and tonnage from U.S.A. and share of Belgian ships in thousands Moorsom tons.

Year	I		II		III		Total		Percentage in total incoming tonnage	Percentage of Belgian tonnage in total income from U.S.A.	Average ton
	NS	NT	NS	NT	NS	NT	NS	NT			
1900	219	708	51	116	—	—	270	825	12.3	23.6	3,056
1905	164	912	26	91	—	—	190	1,003	10.2	12.4	5,279
1910	159	892	100	298	—	—	259	1,189	9.4	44.1	4,591
1913	187	1,017	125	407	4	10	316	1,434	10.1	17.5	4,537
1920	400	1,919	81	298	10	40	491	1,987	18.3	18.4	4,046
1921	229	1,152	163	656	28	15	420	1,973	15.2	9.1	4,697
1922	247	1,267	130	574	5	16	382	1,857	12.3	10.9	4,861
1923	235	1,253	97	416	16	96	348	1,765	10.2	14.3	5,071
1924	234	1,122	130	553	24	104	388	1,779	9.2	17.4	4,585
1925	259	1,353	122	524	44	212	425	2,090	10.3	18.1	4,917
1926	245	1,146	111	491	36	150	392	1,898	8.3	17.8	4,841
1927	225	1,294	130	576	52	239	407	2,099	8.9	16.1	5,157
1928	234	1,278	112	498	44	200	390	1,976	8.4	16.1	5,066
1929	370	1,858	—	—	53	252	423	2,110	8.7	11.9	4,988
1930	394	1,977	—	—	91	412	485	2,389	10.2	12.2	4,925
1931	384	1,906	—	—	96	450	490	2,356	10.5	9.8	4,808
1932	348	1,657	—	—	99	474	447	2,130	10.8	6.9	4,765
1933	363	1,802	—	—	95	419	458	2,221	10.9	7.7	4,849
1934	312	1,461	—	—	66	303	378	1,764	8.6	10.5	4,666
1935	312	1,419	—	—	87	423	399	1,843	8.4	8.9	4,619
1936	238	1,146	124	539	69	329	431	2,014	8.7	8.0	4,672
1937	263	1,193	193	845	57	264	513	2,302	9.2	9.3	4,487
1938	239	1,073	202	917	102	463	543	2,454	10.2	8.6	4,519
1939	197	891	175	725	75	340	447	1,956	10.1	12.5	4,375

I: USA — Atlantic Ocean (New York, Portland, Baltimore, Philadelphia, Newport News, Savannah).

II: USA — Gulf of Mexico (New Orleans, Galveston).

III: USA — Pacific Ocean — Canada.

Source: Haven van Antwerpen, Statistiek der zee- en binnenscheepvaart (1913-1939).

For the years 1900, 1905, 1910 we used the registers of the port: SAA, MA 36238, 36243, 36248. We had to calculate the totals for 1900 and 1905. In the register of 1905 some ships of the "Red Star Line" (260,576 tons or 25.98% of the incoming tonnage from USA) were placed under the American flag. This was not the case in 1910.

Appendix VII. — Imports from U.S.A. (in tons).

Year	Cereals	Fruit (fres+dry)	Coffee	Tobacco	Cotton	Petroleum	Cars	Linseed cake	Meat	Wood
1860	1,521		1,304	3,369	6,414					
1870	15,523		882	988	512	48,131				
1880	515,555	133	1,333	5,689	5,260	101,032			32,282	74 ton
1890	316,289		558	7,166	13,070	107,868		10,095	21,391	
(1895)										103 ton + 48,987 m ³
1900	616,975	1,999	949	8,306	29,315	109,662		65,264	12,494	2,212 ton + 58,991 m ³
1910	220,677	5,565		5,118	18,181	125,677	94	132,634	4,507	121,028 ton
1937	148,787	11,142		1,075	10,847	41,716	41,841			51,228 ton

Source: Rapport. Mouvement commercial, industriel et maritime de la place d'Anvers, 1880-1910;

AMBZ, 2719^o; Haven van Antwerpen, Statistiek der zee- en binnenscheepvaart (for 1937).

Appendix VIII. — Exports to USA (in tons).

Year	Steel+iron	Zinc	Lead	Cement	Window-panes	Rags	Hide ¹	Animal fats	Raw sugar
1880	43,487 ¹	2,278	116	—	26,682	7,727	1	—	122
1890	5,633	383	15,920	—	38,255	2,533	1,709	1,969	5,346
1895	12,456	81	12,456	137,552	20,028	9,154	4,032	1,748	11,358
1900	4,742	130	55	95,487	13,988	11,106	4,285	1,605	49,750
1910	62,791	1,267	15,920	20,495	13,116	34,328	7,822	8,281	3,001
1937	128,314	11,737	—	150,951	12,061	69,830 ²	—	—	—

Notes: ¹ Also scrap iron.

² Classed with unnamed textiles.

³ Raw or dressed.

Sources: Rapport. Mouvement commercial, industriel et maritime de la place d'Anvers, 1880-1910;

AMBZ, 2719^o, printed lists 1895, 1896 with higher figures compared with "Rapport...";

Haven van Antwerpen, Statistiek der zee- en binnenscheepvaart (for 1937).

Inséré 07/05/21 BOEKEN LIVRES BOOKS Enlevé 07/06/21

“Recollections of an Unsuccessful Seaman”

BOEK BESPREKING by : Frank NEYTS

Recently Whittles Publishing released 'Recollections of an Unsuccessful Seaman', by Leonard Noake and edited by David Creamer. Born in 1887, George Leonard Noake joined the nautical training establishment, HMS Conway, in 1903. He then served an apprenticeship at sea until 1908 when his detailed memoirs commence, sailing as a second officer in the European/West African trade. Returning to the mercantile marine in 1915, he sailed in a number of ships and survived not only being torpedoed in the English Channel, but also making 112 trips between England and Europe on a ship carrying war materials. The narrative of this wartime experiences is both harrowing and humorous. On the verge of bankruptcy in 1923, he escaped his creditors by joining a ship bound for Australia as a quartermaster. Luck was on his side and upon his return home he became master of a converted 'Glasgow Puffer'. He remained in the employ of the National Benzole Company but his seagoing career as a chief officer ended in 1927 when he was diagnosed with tuberculosis. Readers of poignant portrayal of life in the 1900s, not only at sea but also ashore, will be thoroughly entertained and moved by the author's experiences and humour. Leonard Noake was undoubtedly a true character, one who enjoyed more than a tippie or two, a strong supporter of the fledgling unions and an unrelenting critic of shipping magnates and their shareholders. The last chapter of the book has been published without correction or editing allowing readers to make their own judgement of Len, his heartfelt style of writing and passionately-held beliefs.

"Recollections of an Unsuccessful Seaman" (ISBN 978-1-84995-393-1) is issued as a paperback. The book counts 177 pages and costs £18.99 or \$24.95. The book can be ordered via every good book shop, or directly with the publisher, Whittles Publishing, Dunbeath Mill, Dunbeath, Cairness IKW6 6EG, Scotland (UK), e-mail: info@whittlespublishing.com, www.whittlespublishing.com.

Inséré 08/05/21 DOSSIER Enlevé 08/06/21

Navigating shipping's technology future

Last year, Norwegian software company Tero Marine announced the appointment of Rune Lyngaas for the position of CEO. Digital Ship spoke with Mr Lyngaas to find out about his plans for Tero Marine and his vision for navigating the evolving digital landscape.

Norwegian technology company Tero Marine has been developing fleet management software for more than 30 years but what most attracted Rune Lyngaas to the position of CEO last year was the "huge technology leap and many interesting things happening at this young, dynamic company," Mr Lyngaas told Digital Ship. Born and raised in Norway, a country considered to be a hub of technology innovation, Mr Lyngaas became fascinated by the "new and interesting challenges in the maritime industry." Having observed the evolving needs of many shipowners and managers throughout his time in the industry, including seven years at classification society DNV GL, he is determined to drive a new

vision for Tero Marine, one that will enable technology innovators and end users to grasp the new opportunities created by an increasingly digitalised industry.

Satcoms for fleet management

In the last decade, a boom in satellite constellations has driven IoT (Internet of Things) connectivity, enabling vast quantities of data to be collected and shared across various departments. For the maritime industry, this has facilitated greater insights into ship and fleet performance and driven improvements in energy efficiency and safety.

For Tero Marine's CEO, one priority is to make even better use of these IoT opportunities to maximise the performance of global fleets.

"We have all these new technologies now that allow us to structure the data first and then layer advanced solutions with fleet management software to draw trends and obtain analytics from the data in a completely different way to the old days," he told Digital Ship.

By the old days, Mr Lyngaas means the low-state bandwidth and low expenditures on IT that made it difficult to fully embrace technology and data. Historically, unstructured information and a lack of standardised infrastructure meant data collection and management was chaotic. But now, according to Mr Lyngaas, there is a move to a phase where shipping has the connectivity it needs in combination with the development of mature technology to gain better insight into performance.

"This technology shift in shipping doesn't necessarily need to be behind anymore as we have the connectivity and we are able to make full utilisation of the technology."

One area Mr Lyngaas pointed to is the development of sensors and more automated processes.

"There's a lot more going on with sensor technology today. Instead of having ship engineers running around the vessel and recording different measurements, this can be automated with sensors. The cost element of transferring from sea to shore is not really a factor anymore; it makes this more and more possible to do."

Cost versus efficiency

According to Mr Lyngaas, technology uptake is still largely driven by cost, rather than motivation to make efficiency gains, although this depends to some degree on the shipping segment and its digitalisation demands.

"Companies might have the big satellite communication strategies in place, but they are often driven by cost rather than efficiency," he said.

He believes that accelerating the adoption rate of new technologies will come down to a push from the digitalisation innovators.

"What I have experienced over the last 20 years in the industry is that the digitalisation innovators are the ones that are pushing digitalisation of the mainstream areas such as artificial intelligence (AI) and machine learning. They are the ones really driving it forwards and making the progress. These digitalisation innovators are the ones that have the responsibility to push the vendors into creating the solutions, while some of the players that are more hesitant to adopt will wait and see what happens. When they realise that there are possibilities for efficiency and cost cutting at the same time, there will already be a lot of solutions readily available for them. The slower part of the industry will then be able to move much faster as they will have a variety of different solutions to select from," he explained.

The key message from Tero Marine's CEO is that it will be up to industry leaders to push their suppliers to deliver more advanced and intelligent technologies, which he warns could take some time.

Centralising the digital system

Another area Mr Lyngaas is keen to see evolve in the maritime industry is a more centralised digital system that will ultimately enable better fleet management. A

centralised digital system generates automatic alerts when an anomaly is identified, facilitating proactive rather than reactive maintenance.

"A centralised approach enables more data and more decisions to be made from the office and the ability to extend the trends and graphs of any kind of measurement of your vessel," Mr Lyngaas explained.

A centralised digital system also has the benefit of aiding in procurement and logistics as it enables the customer to access previous prices of a ship part across a range of different suppliers and compare their delivery times and accuracy. The result is faster and more efficient decision-making with less time spent sourcing and comparing items.

A further important aspect of a centralised digital system is to improve safety. A centralised system can distribute information and learn from previous experiences. For example, a helicopter landing on a vessel is a high-risk scenario. Carrying out a risk assessment using a centralised system will alert the user to when and where previous accidents occurred, either on the same vessel or another vessel in any given time frame, enabling barriers to be put in place to ensure the landing environment is as safe as possible for the crew.

Ship manager and Tero Marine client OSM, which manages more than 500 ships across a multitude of owners, has been driving a centralised fleet management approach to facilitate better decision making. According to Mr Lyngaas, as a ship manager that looks after many owners and all with different management systems and approaches, harmonising vessel reporting and purchasing strategies can be a challenge. OSM made the decision to provide all of its office-based staff access to the same data and applications for all of its vessels, enabling all managed fleets to use the same system.

Mr Lyngaas said that this approach "makes it much easier for OSM to transfer the information from vessel to vessel and to make comparisons on fleet performance and business efficiency. On top of that, it allows a business intelligence approach, where you can measure and monitor different vessels which you are managing against one another, giving huge possibility for improvement."

A push for transparency

A further driving force for shipping's digital transformation that Mr Lyngaas touched upon is the push for transparency and the desire to fully identify the risks and advantages involved in all aspects of shipping operations.

"A lot of the digitalisation and integration between different parties is coming from an increasing expectation in the world for better transparency," Mr Lyngaas explained. "Many players are making huge financial investments into optimising ship and fleet performance and for a shipowner, a well-performing vessel evidenced by clear transparent statistics that show better performance than other vessels is essential. Negotiating port fees, for example, is much easier if an owner has transparent clear statistics that shows how his vessel outperforms potential competitors." Furthermore, as transparency increases and additional information comes to light, more questions are asked.

"We see the evolution of business intelligence where the more data that is gathered, the more is demanded to find answers to new and evolving questions.

"There is also a huge expectation that all this data needed to make a decision is available immediately," he said.

Evolving digital culture

The evolving digital culture in shipping is in part being accelerated by new generations entering the maritime workspace. A connection to the outside world and instant access to information is a necessity for many these days.

"Just look at the younger generation running around today with their smart phones. They are used to getting information and updates instantly, and they interact with people around them through Tweets, Instagrams, and so on, which is really short-lived information. They

are used to small bites of information where they don't need to know how and where to find the information, they can simply just search for it and act on it immediately."

This expectation for instant knowledge will play a particularly relevant role in the way shipping operates, Mr Lyngaas confirmed. Situational awareness is one example he drew upon, whereby those entering the maritime industry from a young age will just "expect the information they need to be available immediately. They will be taught that their smart watch or computer will tell them what to do rather than them having to go around and know what to do."

Mr Lyngaas believes this generational shift and the demands for instant knowledge will lead shipping's transition to more digital ways of working, both in the office and onboard. Even in just one decade, he expects this shift to be "huge."

Bringing user experience to sea

Mr Lyngaas confirmed that one of Tero Marinés top priorities is developing the user experience (UX) of its applications. This involves creating an experience that is meaningful to users and ensures every interaction they have with a piece of software or an app is a positive one.

"We are looking at how to better the experience by analysing every single screen of our next innovation master, what needs to be on the screen, where there is too much information, how we can visually lay it out on the screen to make it more appealing and functional," Mr Lyngaas explained.

He also confirmed that the company will put greater emphasis on mobile apps to help with mobility and being able to fulfil work requirements, regardless of location. "Those are the biggest changes that we are focussing on internally," he noted.

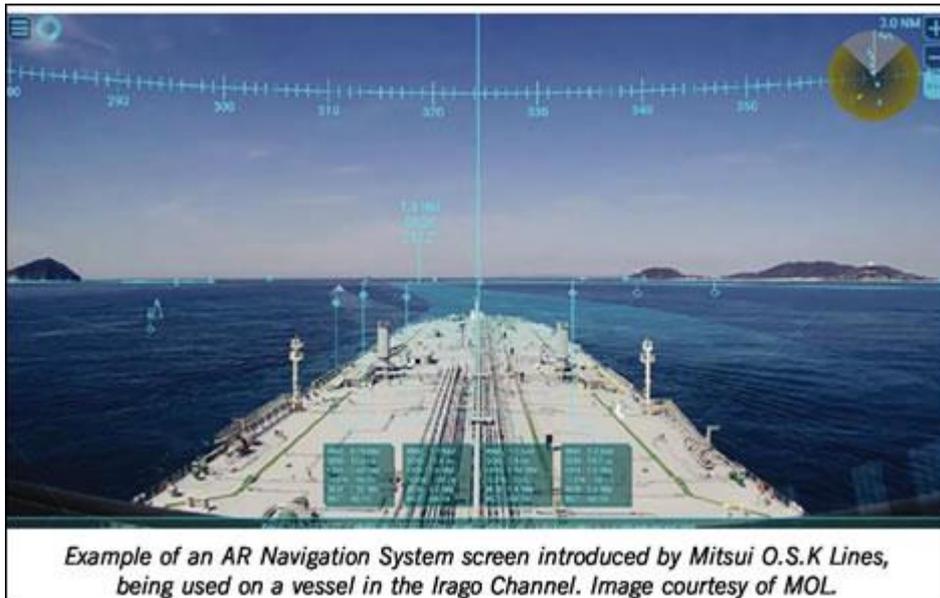
Tero Marine is part of the Ocean Technologies Group, which combines learning and technology to support the maritime industry's efforts in technology enabled transformation. As one of the technology businesses operating within the Group, Tero Marine will develop its solutions to help solve problems faced by industry players today. Most recently, Tero Marine enhanced its e-procurement solution with a new purchasing app to enable decision makers to approve purchase orders on the move.

DS DigitalShips

Inséré 09/05/21 DOSSIER Enlevé 09/06/21

The role of augmented reality in training and machinery maintenance

Augmented reality (AR) has huge potential to deliver more efficient vessel operations and improve maritime training. Demetris Frosynis and Nikos Anaxagora, part of the University of Frederick Students' Research for Augmented Reality in the Maritime Industry explain how AR is being used to help tackle operational and training challenges.



Example of an AR Navigation System screen introduced by Mitsui O.S.K Lines, being used on a vessel in the Irago Channel. Image courtesy of MOL.

One of the biggest challenges that the industry is facing, and this 'challenge' will spread, is the familiarisation of staff with new equipment. There is a need for training in the use of this new equipment, especially in machines. This challenge is something that Augmented Reality

(AR) can address.

Living through this industrial revolution, the maritime sector has already begun to implement digital solutions. Big data analytics of ships, augmented and virtual reality, cloud technologies, machine learning and cognitive artificial intelligence are some relevant examples of the technologies now implemented by shipping companies.

AR technology is becoming one of the main digital tools of Industry 4.0. Demetris Frosynis and Nikos Anaxagora recently carried out research to investigate the potential use of AR in the maritime industry. The research methodology used was qualitative, based on literature reviews and interviews. These consisted of indepth analysis with twenty-four people from the shipping industry, and from this, a thematic analysis of findings was produced. AR in shipping is currently at a very early stage. Today, AR is used in the navigation of ships, mainly by companies from Scandinavia and as a pilot or prototype model in marine engineering.

AR has great potential to help in the maritime industry. In maintenance, remote assistance, diagnostics, work tasking, work checklists and for training purposes AR can be integrated. Any result obtained through AR equipment can be exported as a report in PDF or video. It has great potential to be of use in all operations. In addition, AR improves situational awareness,

- Onboard ships the crew can easily recognise pipelines or wiring and speci-fy what each one is for.
- Maintenance assistance for machinery with steps and tasks.
- Check-list control and inspections (no need to be typed, the report can be verbally reported).
- Officers can use it for daily tasks (again, no need to be typed, the report can be verbally reported).
- Video recording.
- Video reporting with statistical analysis (shared in real time from ship to land).
- Remote assistance from the offices with IT and Technical Departments.
- Training in advanced technology equipment using pre-recorded instructions.
- Bridge systems transferred and integrated in the AR headset.

One of the biggest advantages of AR is that the system allows all the information to appear on many screens in front of the user's eyes. For example, when a vessel is in a situation with bad weather and low visibility, the officer on watch relies on his radar to look around the vessel to see what other vessels are doing. With AR, the officer on watch can look outside the window and directly get the information of vessels around him. In this way, the officer can see where the other vessels are and what their speeds and courses are. This increases the officer's awareness of what is surrounding his vessel.

Another challenge that the shipping industry faces is the familiarisation of staff with new technologically advanced equipment, which is often unknown to operators and to seafarers. There is a need for training for the use of this new equipment, especially the engineers. Deck and engine officers say that 'equipment is changing all the time'. There are too many manufacturers. Shipping companies cannot control the supply of equipment available in the market and in addition, changing rules and regulations coming from the IMO are mandatory. Furthermore, new manufacturing companies appear in the market and supply new equipment. Competency with this equipment must be internalised and familiarised with the crew onboard. This challenge is something that AR can address.

The concern that seafarers may be overwhelmed by digitalisation is a fact, but the industry's real needs are digital maritime services that will provide additional motivation which is necessary and easily assimilated into onboard training. The most important thing in technology is that technology, at the end of the day, is



AR has great potential to help with maintenance, remote assistance,

not being used. A lot of software and hardware exists, companies invest in technology, but ultimately people do not use it. Technology providers need to revise, see the usability of all these tools and understand how easy or difficult it is to use them. Users need good training before they can make use of any technological tool.

The shipping industry has a traditional, more conservative approach to the operation of ships. New technologies have always been regarded with scepticism, and training is more attractive to them when it follows a 'hands on' method of training.

On one hand, shipowners are financially orientated and driven by cost, and every new investment is made according only to finance and the requirements of current legislation. AR technology is very new and very expensive. On the other hand, there is a great opportunity here. AR technology can solve other, more serious problems. The research showed that shipowners are looking to reduce the cost of training on new equipment from providers and manufacturers for shipboard operations. There is a big gap in this. Engineers need to have a tool that enables training on new equipment, controls the maintenance and has remote assistance with the provider on land. This tool can be the AR headset. AR technology can guide them and deliver the training as the engineer looks at the equipment by adding the digital information, completing the checklist and any inspection. Few companies are using it, but the demand for this solution based on the research will be very high. As AR technology is becoming increasingly well-known, there will be more commercial solutions that will soon be eagerly adopted.

Eventually, the shipping providers will follow. They are currently undertaking research in order to invest in AR technology for maritime navigation systems. An AR headset having maps, radar, alarms, warnings and interacting with the real view out of the bridge window will be a fantastic option regarding the improvement in safety and situational awareness. AR relies on the input of many navigation-al systems that will create a new generation of bridge development. AR is not just a PC or virtual reality content; AR combines natural with digital experience along with the interaction between the objects of both worlds made

possible in real time. Perhaps no other technology has the potential to revolutionise so many tasks. We are, with AR, approaching a totally new era.

AR can transform the shipping industry, and there are already a few obvious applications for it in training with the creation of real-world videos and modules. Applications, too, can be seen in maintenance by providing engine diagnostic information and remote support to engineers at sea, and in operations where AR technology can provide improved situational awareness and decision-making support.

DS

Inséré 10/05/21 NIEUWS NOUVELLES Enlevé 10/06/21

Strukton Immersion Projects tekent contract voor afzinken Scheldetunnel



De Scheldetunnel is een onderdeel van de Antwerpse Oosterweelverbinding, een groots mobiliteitsproject dat niet alleen het verkeer in en rond de stad veiliger en vlotter maakt, maar ook de leefbaarheid verbetert. De nieuwe tunnel onder de Schelde is onderdeel van de Antwerpse Ring en zorgt voor een betere spreiding van het verkeer. Lantis, de opdrachtgever van de Oosterweelverbinding, gunde afgelopen zomer de bouw van de tunnel aan Tijdelijke Maatschap COTU. Recent kreeg Strukton Immersion Projects van TM COTU opdracht voor het afzinken van de tunnel.

Het project Oosterweelverbinding zal één van de grootste infraprojecten in de regio Antwerpen zijn, met impact op leefbaarheid en bereikbaarheid en zal worden uitgevoerd tot 2030. Hiermee brengt Lantis de transitie in gang naar andere vormen van mobiliteit, die duurzamer zijn en zullen leiden tot een betere bereikbaarheid van Antwerpen. Eén van de projecten is de realisatie van de Scheldetunnel, de nieuwe tunnel onder de Schelde. Strukton Immersion Projects tekende voor het opdrijven, afmeren, afzinkgereed maken en installeren van de acht tunnelementen van de Scheldetunnel. Dit is inclusief de afzinkengineering, voorbereiding en diverse tijdelijke constructies. Strukton is direct gestart met de engineering. Het afzinken van de tunnelementen zal naar verwachting in 2024 plaatsvinden.

Ten behoeve van de bouw van de Scheldetunnel zet Strukton zijn rijke specialistische kennis en ervaring in op het gebied van afzinken. Eerdere vergelijkbare projecten die

Strukton Immersion Projects succesvol afrondde, zijn het Busan-Geoje Fixed Link Project in Zuid Korea, de Chioggia Waterkering bij Venetië en de caissons voor de fundering van de Canakkale Bridge in Turkije, de grootste tuibrug ter wereld.

De Scheldetunnel vormt de belangrijkste schakel in de



Oosterweelverbinding en zorgt dat de linker en rechteroever van de Schelde met elkaar worden verbonden. De tunnel bestaat uit een landtunnel en een afzinktunnel met een totale lengte van 1.800 meter. Hiervoor worden acht tunnelelementen van 160 x 42 x 10 meter en een gewicht van ongeveer 60.000 ton gebouwd in de haven van Zeebrugge om vervolgens via de Noordzee en de Westerschelde drijvend naar Antwerpen geslept te worden.

TM COTU staat voor Tijdelijke Maatschap Combinatie Oosterweeltunnel. De maatschap combinatie bestaat uit de Belgische bouwgroepen BESIX, BAM Contractors, DEME en Jan De Nul. In de combinatie is de nodige deskundigheid en ervaring van de deelnemende bedrijven verenigd om de Scheldetunnel te realiseren. TM COTU spreekt van het koninginnenstuk van de Oosterweelverbinding.

Inséré 11/05/21 NIEUWS NOUVELLES Enlevé 11/06/21

Drie zeelui 'Bochem Brussels' met Indiase variant in ziekenhuis

De COVID-besmettingen aan boord van de tanker 'Bochem Brussels' betreffen wel degelijk de Indiase variant, bevestigt de FOD Volksgezondheid. Drie zeelui zijn inmiddels in het ziekenhuis opgenomen.

BOCHEM BRUSSELS
Chemical/Oil Products Tanker

ATA: Apr 26, 12:25 UTC **ARRIVED**

Swivest: 0 kn Koers: 193° Diepgang: 7.5 m (max 10.9)

Status: - Laet report: May 01, 2021 13:17 UTC

Le Haere, France
ATD: Apr 23, 14:20 UTC

VENOPROEVEN
ATHER

SEL PARTICULARS

Tonnage:	Built:	IMO number:
36	2016	9737577
Weight:	Size:	MMSI:
14	145 / 24m	636019091

Bochem Brussels in Doeldok - © Vesselfinder

De CMB-tanker 'Bochem Brussels' ligt sinds afgelopen vrijdag in quarantaine aan het Doeldok in de Antwerpse haven. Nadat eerder duidelijk werd dat zeker zeventien zeelui positief testten op COVID-19, bevestigt de FOD Volksgezondheid dat het in dit geval om de Indiase variant van het virus gaat. Drie opvarenden zijn inmiddels overgebracht naar het ziekenhuis. De rest van de crew is grotendeels aan wal gebracht om de isolatie of quarantaine uit te zitten. Vier bemanningsleden verblijven volgens de FOD Volksgezondheid nog aan boord. "Voor de opvolging van de situatie maakt de variant geen verschil", zegt woordvoerder Wendy Lee van de FOD Volksgezondheid. "Alle procedures zijn afgestemd op een maximale veiligheidsgarantie, ongeacht de virusvariant waarvan sprake."

Rederij CMB bevestigt. "We hebben inderdaad net vernomen dat het om de Indiase variant van het virus gaat. We volgen de situatie nauw op. De toestand van onze bemanningsleden is stabiel, wat voor ons het belangrijkste is. De bemanningsleden zijn niet meer aan boord en blijven in quarantaine."

'Nord Oceania': beterschap

Op de olietanker 'Nord Oceania' die sinds vorige week voor de kust van Zeebrugge ligt na een corona-uitbraak, ziet de situatie er iets rooskleuriger uit. Het schip ligt nog altijd voor Zeebrugge, bevestigt de FOD Volksgezondheid. De bemanningsleden zijn aan de beterhand. Door het slechte weer van woensdagmiddag ging het schip even op drift, maar intussen ligt het weer stil. Negatief geteste bemanningsleden zullen hun quarantaine aan wal uitzitten. De bemanning mag wel op zaterdag 8 mei uit isolatie. Het schip wordt daarna volledig ontsmet. Ook staat een gedeeltelijke bemanningswissel gepland. Het is voorlopig onduidelijk of het schip dan verder vaart naar de haven van Antwerpen.

Michiel Leen

Inséré 13/05/21 DOSSIER Enlevé 13/06/21

Woorden uit de zeemanskist Gaten in een schip

Oppermeester J.B. DREESEN

Het is ongelooflijk hoeveel gaten er in een schip zitten en toch blijft het drijven.

De minst gevaarlijk zijn de SPAARGATEN. Dit zijn ronde of ovale gaten die in de stalen platen van scheepsconstructies worden gesneden om gewicht te besparen. Voor die reden worden ze ook wel eens VERLICHTINGSGATEN genoemd.

PATRIJSPOORTEN, soms kortweg POORTEN genoemd, komen op de moderne schepen bijna niet meer voor. Hun oorspronkelijke functie was licht en lucht te brengen in de verblijven van het benedenschip. Deze functie wordt in de tegenwoordige tijd overgenomen door de, meestal degelijke, elektrische verlichting en de, niet altijd zeer aangename, LUCHTBEHANDELING (airconditioning). De in de scheepshuid aangebrachte patrijspoorten brachten echter een tamelijk groot risico mee, voornamelijk als ze laag op de waterlijn lagen. Hun constructie in brons was zeer verzorgd en alhoewel voorzien van een onbreekbaar glas waren ze bijkomend uitgerust met een BLINDEERKLEP. Met een stelsel van RUBBERBANDEN en KNEVELS konden ze waterdicht gemaakt worden. Onder de patrijspoort hing een LEKBAKJE waarin het condensatievocht kon lopen dat zich op het glas vormde. In warme streken kon men van binnenuit WINDHAPPERS in de poorten aanbrengen om de circulatie van de frisse lucht in het schip te verbeteren.

Wat onze patrijspoort met een patrijs te maken heeft is op het eerste gezicht niet zo duidelijk. De oorsprong van het woord ligt echter in de middeleeuwen, bij het in gebruik komen van de KOLDER-STOK. Hiermee werd het mogelijk de roerganger een paar dekken hoger op te stellen (zie Neptunus nr 4 van 1969, Woorden uit de Zeemanskist « KOLDERSTOK »). Wegens de gelijkenis met het achterste van een patrijs werd het gat voor de Kolderstok een PATRIJSGAT genoemd. In navolging hiervan ontstond PATRIJSPOORT. Patrijspoorten zijn momenteel « in » bij de scheepsantikwariaten. Voor een exemplaar met enige allure wordt grif, dit alnaargelang grootte, gewicht en constructie, tussen de 10 à 20.000 fr. betaald.

Het HENNEGAT is op onze tegenwoordige schepen een ronde opening in de scheepshuid waardoor de ROERKONING steekt. Teneinde de roerkoning waterdicht door het hek te voeren, wordt de HENNE-GATSKOKER ingebouwd. Om het opslaan van het water in de koker te voorkomen wordt rond het Hennegat een hoefijzervormige plaat, de SCHAAMPLAAT, met bronzen tapbouten aan de buitenkant van de huid vastgezet.

Het HENNEGAT kreeg zijn naam van de driehoekige opening waardoor op de vroegere houten binnenschepen de helmstok binnenboord kwam. De opening werd gevormd door de hekbalk, als basis, en de achterste randen van de opstaande zijden (het BOEISEL) waarvan de bovenkanten elkaar boven de achtersteven raakten. Minder gevaarlijk voor de Waterdichtheid van een schip zijn de KLUISGATEN. Zij komen aan weerszijden van de steven voor, onder vorm van een buis die vanaf het dek naar de boeg voert. Langs deze kluisgaten loopt de ankerketting aan boord.

LANGS DE KLUISGATEN AAN BOORD GEKOMEN wordt gezegd van iemand die, na de verschillende graden te hebben doorlopen, een carrière maakt als officier.

De ankerketting loopt dan verder door de KETTINGKOKERS naar de KETTINGBAK, die dan wel gevaarlijk zijn. Voor een lange reis was het vroeger gebruikelijk de kettingskokers aan dek te dichten met een plankje, voden en cementspecie. Dit was scheepstimmermanswerk en gebeurde onmiddellijk na het zeevast zetten van het anker. Dat het verwaarlozen van deze maatregel zware gevolgen kon hebben merkten we jaren geleden aan boord van een Algerine.

Nadat we uit Dakar vertrokken waren moesten we ettelijke dagen tegen de harde N.O. passaat opwerken waarbij we na zekere tijd opmerkten dat ons schip koplastig werd. De

timmerman had gewoon verwaarloosd de kettingkokers dicht te metselen. De << KOPSTEKKER » van 3 dagen had zijn werk gedaan en de kettingbak onder water gezet.

Gevaarlijke gaten zijn de AANZUIG- en AFVOERGATEN die in het onderste deel van de romp gemaakt worden voor de bediening van motoren, machines, toiletten en wasplaatsen. Sommige van deze gaten zijn voor normaal gebruik voorzien van TERUGSLAGKLEPPEN.

Ze zijn echter allen voorzien van KLEPPEN die moeten gesloten worden wanneer de inrichting een tijdlang niet in gebruik is. Al deze kleppen moeten bij elke droogdokbeurt nagezien worden.

Doorheen het ganse schip vindt men WATERDICHTE DOORVOERINGEN die zorgen dat elektrische leidingen, ventilatie, brandblus- en lensleidingen, onderwaterzetinrichtingen, voortstuwing en brandstofleidingen op hun plaats terecht komen. Teneinde langs de dekken toegang te krijgen tot de verblijven, werk- en andere ruimten, zijn een reeks grotere gaten voorzien die naar hun constructie LUIKEN of MANGATEN worden genoemd. De luiken zijn voorzien van LUIKHOOFDEN, dit is een opstaande rand die moet voorkomen dat binnenstromend water te vlug naar een onderliggend compartiment loopt. Gaten in de SCHOTTEN worden net als in de huiskamer DEUREN genoemd. Ze zijn echter waterdicht uitgevoerd.

De aanvoer van verse lucht naar het benedenschip is zeer belangrijk. Veel van de gaten op het bovendek, wel dan niet voorzien van constructies, hebben als functie de lucht op te vangen, en naar beneden te voeren. Alnaargelang de vorm spreekt men van LUCHTKOKERS, LUCHTROOSTERS, PADDESTOELEN of VERLUCHTINGSGATEN.

Een zeidoekse luchtkoker boven een ruim wordt een BROEK VAN BERTA genoemd. Dit om de gelijkenis met de broek van een vrouw van zekere omvang (BERTA KRUPP in W.O. I).

Voor de verlichting werden vroeger in dekhouten glazen verwerkt die KOEKKOEK of SCHIJNLICHT werden genoemd. Meestal waren ze een bron van veel nattigheid benedendeks, want de waterdichte afsluiting ervan liet veelal te wensen over.

BLAASMONDEN zijn de richt- en regelbare openingen die op gezette afstanden benedendeks op de ventilatieleidingen voorkomen. In het Engels hebben ze de eer eigenaardige naam PUNKAH LOUVRES dat van het HINDUSTANI, PANKAN = WAAIER, (om lucht te geven) stamt.

Iedere open deur of luik in een waterdicht schot of dek betekent, dat er zich een gat in het schip bevindt. Hoewel het schip zonder deuren of luiken onbewoonbaar of onbruikbaar zou zijn, is het toch zo, dat hoe minder gaten er zijn, hoe veiliger de toestand is waarin het schip verkeert. Het is daarom voor de scheepsbeveiligingsdienst van belang te weten, welke deuren en luiken geopend zijn en welke dicht.

Opdat de sluittoestand van het schip wordt aangepast aan de omstandigheden, die een bepaalde graad van veiligheid eisen, heeft men drie SLUITTOESTANDEN ingesteld die aangeduid worden met de laatste letters van het alfabet. Als extra veiligheidsmaatregel treft men op deuren en sluitingen een kleur aan, hetzij rood of blauw.

Bovendien zijn, in verband met het gevaar voor gas, dat voortvloeit uit de ABCD oorlogvoering, ver schillende openingen gemerkt met een GASMERK.

Maar hier zitten we op het terrein van onze uitstekend werkende NBCD School te Sint-Kruis en komt men voor nadere details bij hen terecht.

JB. DREESEN

Inséré 15/05/21 NIEUWS NOUVELLES Enlevé 115/06/21

Seafarer supply is expected to tighten heralding higher manning costs

The attractiveness of a career at sea has been an industry concern for a number of years. Long periods away from home, increasing administrative demands for paperwork on board, and the threat of criminalisation being major factors. Covid-19 impacts, which have been particularly harrowing for seafarers, have added to these issues, presaging an inflection point in global seafarer supply. As a consequence, labour market conditions are expected to tighten, adding to seafarer wage inflation and vessel operating costs.

Drewry projects that the current officer shortfall to crew the global merchant fleet will widen, due to the reduced attractiveness of a career at sea and rising man-berth ratios. The effect of the former will be to slow the growth of seafarer supply, while extended leave periods and reduced tours of duty to maintain the attractiveness of a career at sea, will raise demand. A more detailed analysis of these projections can be found in Drewry's Manning Annual Review and Forecast 2020/21 report.

One of the major impacts of Covid-19 has been to expose increasing numbers of seafarers to extended tours of duty due to crew change challenges. In many cases, tours have been extended to nine months or more, when three to four months is the norm for senior officers. However, some nationalities such as Filipinos are used to six-month tours for junior officers and nine months for ratings in normal circumstances. Although difficult, crew changes are taking place and responsible companies are doing their best to make life on board more tolerable with increased food budgets and internet bandwidth. Pandemic-induced crew change complications have also swelled the ranks of out of contract crew, forced to remain at home and unable to join vessels as scheduled. Most of these have been without income for the length of the crew change delay, forcing some to seek alternative shore-based employment and the likelihood of not returning to sea. To counter this some employers have been paying 'at home wages' to retain seafarers which is mitigated some of these risks.

But it also remains the case that officers are generally well paid compared to other jobs available in the local economy. Taking the Philippines as an example, 2nd Officer wage rates are as much as three-times higher than average earnings, as measured by GDP per capita of work population (see chart). An AB wage, relating to the basic ILO ratings rank, is lower than the average by around 20%.

Hence, the unpredictability of employment at sea, exacerbated by the Covid-19 pandemic and particularly affecting ratings, may be the biggest threat to future seafarer supply.

The Philippines has long been the biggest supplier of ratings with China, Indonesia, Myanmar and Vietnam commonly cited as viable alternatives. However, these countries have issues of their own. Myanmar has recently experienced a military coup; China is providing ratings mainly for its domestically flagged fleet; and Indonesia and Vietnam lack the infrastructure necessary to fill any significant gap left by a potential fall in supply of Filipino ratings. India is another big supply nation but wage rates for ratings are no lower than for Filipinos.

Officer rates of pay for most nationalities and on most vessel types remain well within the 'professional classes' range. Combined with often favourable tax treatment, opportunities for comparable shore-based employment are relatively limited. While risks remain that officers nearing the end of their careers may bring forward retirement or shore-based work plans, it is unlikely that the many ambitious junior officers will relinquish a career at sea for a relatively short-lived crisis which now seems near to resolution. Reliable Covid-19 vaccines are now in global deployment and worldwide co-operation to facilitate crew changes is gaining momentum, as is recognition of seafarers as key workers.

If there is a crisis of supply it therefore seems likely that it will be mainly in ratings ranks where opportunities ashore are more comparable and available. Employers will therefore need to watch rating recruitment and retention very carefully and prepare accordingly.

However, the short training period for ratings provides a lot more flexibility than would apply to officers. If Master and Chief Engineer retirements were to accelerate, this could well create a skills gap with lower ranks being promoted in turn, perhaps without the desired experience. This may lead to wage inflation of Chief Officers and 2nd Engineers able to step up to Master and Chief Engineer ranks with little additional training. In turn experienced 2nd Officers and 3rd Engineers may be promoted, increasing demand from companies looking to secure their senior officer succession planning.

The impact of these developments is rising wage inflation which will add to pressure on already rising vessel operating costs.

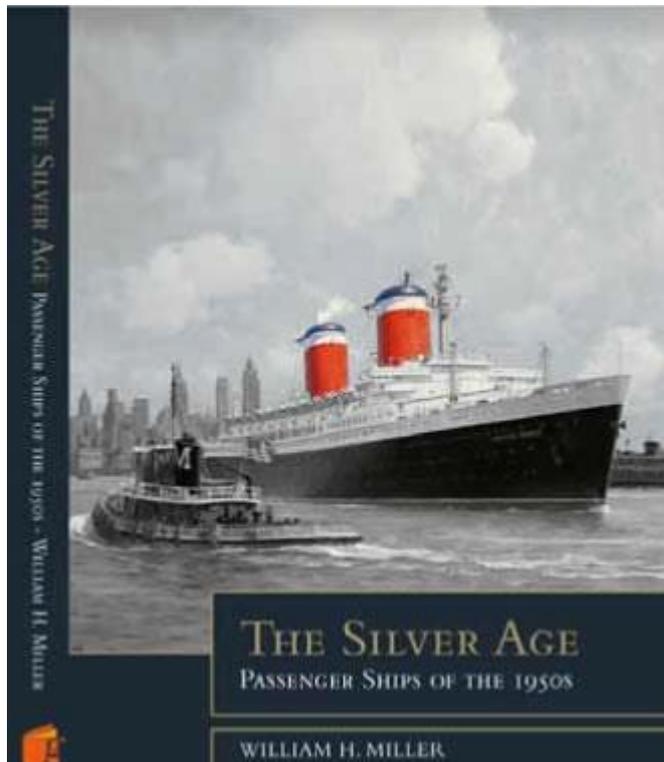
Source: Drewry

Inséré 15/05/21 BOEKEN LIVRES BOOKS Enlevé 15/06/21

"The Silver Age"

BOEKBESPREKING By : Frank NEYTS

Recently gbooks international published an outstanding book titled "The Silver Age. Passenger Ships Of The 1950S ". William H. Miller signed as the author.



This book's title "The Silver Age" refers to that decade of some final passenger liners, ships that were created for transport, port-to-port services, and were very often class-divided. It was indeed a very busy generation of building passenger ships – from the likes of the speedy United States and very important others such as the Andrea Doria, Orsova, Southern Cross and Rotterdam. The volume is intended basically as a book of photos. The author has grouped the passenger ships by route and then by company. All shipping companies trading on the six major world-sea-routes are described with examples of how their ships were employed on those lines and routes. Essential extras are that the book is vividly and expertly introduced by Klaas Krijnen, chairman of the ss Rotterdam-preservation Foundation;

and that the book is indexed in detail for shipping lines and passenger ships.

The volume is not, however, a book of high technical details, the numbers and facts about these ships or their eventual fates: when and where they were scrapped, for example. But in this format, it also becomes something of a reference of the vast services offered in the 1950s. Yes, one could travel almost anywhere in the world by passenger ship! And so altogether, it is pure nostalgia! Highly recommended! This book is the first in a series of several encyclopedic books proposed by William H. Miller with such preliminary titles as

'Ships in port', 'Liners Between The Wars', 'Fifty Famous Liners', 'Ocean Liners 1958', 'Splendor At Sea' and 'Ocean Liner Twilight'. All titles to look forward to!

"The Silver Age" (ISBN 9 789492 368508) counts 303 pages. It is available as hardbound (retailprice P&P included: BE & NL € 49,95 ; UK £64.50 ; USA \$67.00 ; AUS \$ 99.00. (CAN \$ 64.50 P&P not included.) Ordering the book can simply be done by sending an e-mail to info@gbooksinternational.nl (NL & BE customers); to linerrich@att.net (USA-customers); to vitor.francisco@talktalk.net (Canadian customers) ; to massaadphill@gmail.com (AUS & NZ customers). Author-signed copies available from: billmilleratsea@gmail.com Please provide correct full postal address, this needed for delivery by DHL. The invoice provides particulars for payment.

Inséré 17/05/21 HISTORIEK HISTORIQUE Enlevé 17/06/21



C'est en 1710, durant la guerre de Succession d'Espagne, que la Concorde, frégate corsaire armée par René Montaudouin, effectue son premier voyage au départ de Nantes vers les côtes d'Afrique et les îles françaises d'Amérique. Avec la signature du traité d'Utrecht et le retour de la paix, le corsaire devient négrier et il est armé pour trois expéditions en 1713, 1715 et 1717. Le développement de la traite négrière durant les premières années du XVIII^e siècle accompagne l'extension des cultures sucrières coloniales et le besoin d'une main-d'oeuvre acclimatée aux régions tropicales.

Avec le traité d'Utrecht, la France perd son privilège de l'asiento, c'est-à-dire le monopole de la fourniture d'esclaves aux colonies espagnoles. Des lettres patentes du 16 janvier 1716 laissent alors aux négociants français la liberté du commerce de traite, à condition toutefois que les navires soient armés dans les ports de Rouen, Bordeaux, La Rochelle et Nantes. Cette période marque donc le début de la traite négrière nantaise, et la frégate la Concorde, armée dans ce port, fait partie des nombreux navires qui s'adonnent à ce fructueux commerce dit triangulaire. Mais son destin est lié aussi à la piraterie, alors en pleine expansion, qui sévit sur les côtes d'Amérique, et à l'un de ses plus farouches pratiquants : le trop fameux Barbe-Noire!

Edward Teach dit Barbe-Noire

Le pirate Edward Teach a été rendu célèbre depuis près de trois siècles par de nombreux ouvrages dans lesquels il est parfois difficile de distinguer le mythe de la réalité. C'est le cas, par exemple, des pages que lui consacre Charles Johnson dans un livre paru en 1724 sous le titre Histoire générale des pirates anglais. Il est aujourd'hui généralement admis que Charles Johnson est le pseudonyme de Daniel Defoe. Selon cet auteur, Edward Teach naît vers 1680 à Bristol sous le nom d'Edward Drummond. Devenu jeune homme, il se fait engager à bord d'un corsaire anglais durant la guerre de Succession d'Espagne et, en dépit de la témérité et du courage dont il fait preuve au combat, demeure simple matelot.



Le farouche pirate Barbe-Noire au combat, composition du peintre Frank Schoonover (début du XX^e siècle).

La guerre terminée, Edward Teach rejoint les pirates qui ont établi leur repaire sur l'île de New Providence (aujourd'hui Nassau) dans l'archipel des Bahamas. Là, le capitaine pirate Benjamin Hornigold lui confie le commandement d'un sloop à bord duquel BarbeNoire entame une courte carrière, mais qui marquera l'histoire de la piraterie. "Notre héros se donna le surnom de Blackbeard en raison de la grande quantité de poils qui lui couvrait le visage, écrit Charles Johnson. Cette barbe était noire, il la laissait croître jusqu'à une longueur extravagante, en sorte que toute sa poitrine en était couverte, et elle lui montait jusqu'aux yeux. Il était accoutumé d'en faire de petites tresses avec des rubans qu'il tournait autour des oreilles." Henri Bostock, capitaine du sloop Margaret capturé par Barbe-Noire le 5 décembre 1717 au Sud de Porto Rico, décrit le pirate comme étant "un grand homme mince avec une barbe très noire qu'il portait d'une

grande longueur".

Il semble que la première mention du nom de Barbe-Noire dans les archives apparaisse lors d'une déclaration faite au Board of Trade, à Londres, par un certain capitaine Mathew Musson à la suite de la perte de son navire. Le 5 juillet 1717, Musson déclare qu'au mois de mars précédent il a fait naufrage sur Catt Island, aux Bahamas. Les habitants de l'île lui ont appris l'existence de cinq pirates qui ont fait du port de Providence leur lieu de rendez-vous. Il cite les noms d'Hornigold, Jennings, Burgiss, White et Teach. Ces derniers disposeraient d'un sloop armé de six canons et d'environ soixante-dix hommes.

Cependant, le journal Boston News Letter du 24 octobre 1717 signale la présence de Barbe-Noire vers le 12 du même mois au large de l'embouchure de la Delaware. La capture d'un navire en provenance de Liverpool et de Dublin n'a pas échappé à son correspondant de Philadelphie qui, après avoir interrogé l'infortuné capitaine dudit navire, un nommé Codd, écrit: "Il fut capturé il y a environ douze jours par un sloop pirate du nom de Revenge, armé de douze canons, monté par cent cinquante hommes et commandé par un certain Teach, qui avait été second maître dans ce port. Les pirates dirent aux prisonniers qu'ils attendaient un navire de conserve de trente canons et qu'ils monteraient alors vers Philadelphie. A bord du sloop pirate se trouve le major Bennet. Celui-ci n'en est pas le capitaine; se contentant de déambuler en robe de chambre, un livre à la main, il possède à bord une importante bibliothèque et n'est pas encore remis de la blessure qu'il a reçue lors de l'attaque d'un vaisseau de guerre espagnol, durant laquelle trente à quarante de ses hommes furent tués ou blessés. Sous les ordres du capitaine Teach, ils firent route ensuite pour Providence, lieu de rendez-vous des pirates."

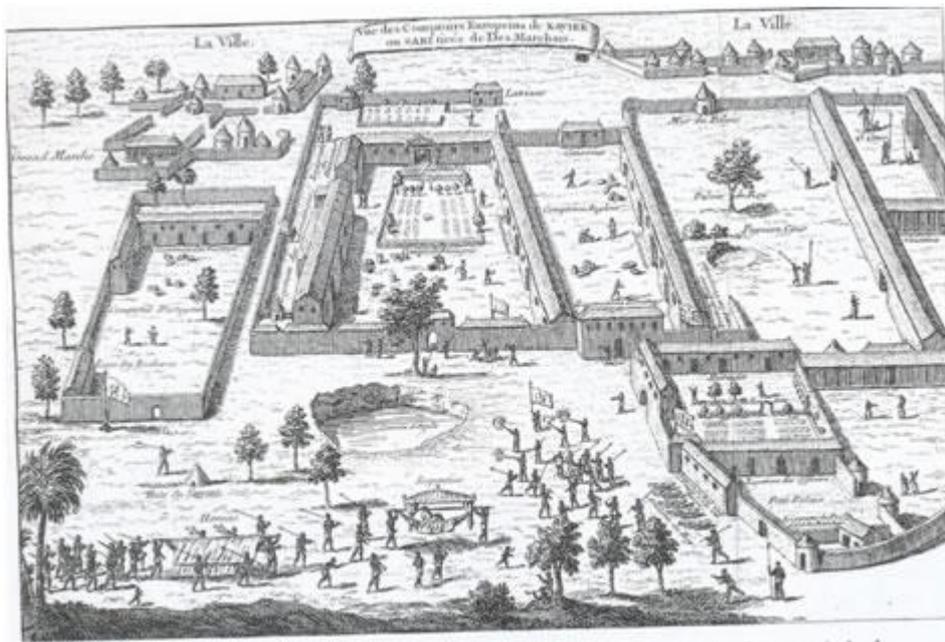
C'est vraisemblablement lors de cette croisière que Barbe-Noire rejoint Benjamin Hornigold et son Ranger, le "navire de conserve de trente canons" précédemment évoqué. Quant au major Bennet, il s'agit vraisemblablement du major Stede Bonnet, "gentilhomme pirate"

bien connu dont la rencontre avec Barbe-Noire nous est décrite par Charles Johnson: "Teach, ayant fait voile vers l'Amérique espagnole, trouva sur sa route une chaloupe de pirates, montée de dix pièces de canons et commandée par le major Bonnet, ci-devant gentilhomme d'une bonne réputation et qui aurait même du bien dans l'île des Bermudes. Teach joignit cette chaloupe et, s'étant aperçu que Bonnet était peu expérimenté dans la marine, donna sa chaloupe à commander à un certain Richards, qu'il fit capitaine au consentement de l'équipage, et prit le major à bord de son vaisseau, en lui disant qu'il n'était pas propre aux fatigues ni aux soins d'un semblable métier, qu'il ferait mieux de le quitter et de vivre à son aise sur un vaisseau tel que le sien, où il pourrait suivre ses inclinations sans s'assujettir à aucune charge.

Malgré cela, Bonnet restera au côté du pirate pour écumer la mer des Caraïbes, prenant même le commandement du sloop Revenge lorsque Barbe-Noire trouvera l'occasion d'armer une nouvelle prise à sa convenance.

Tels des oiseaux migrateurs, à l'approche de la mauvaise saison les pirates font route vers le Sud, et ne se privent pas de mettre la main sur les navires qu'ils rencontrent.

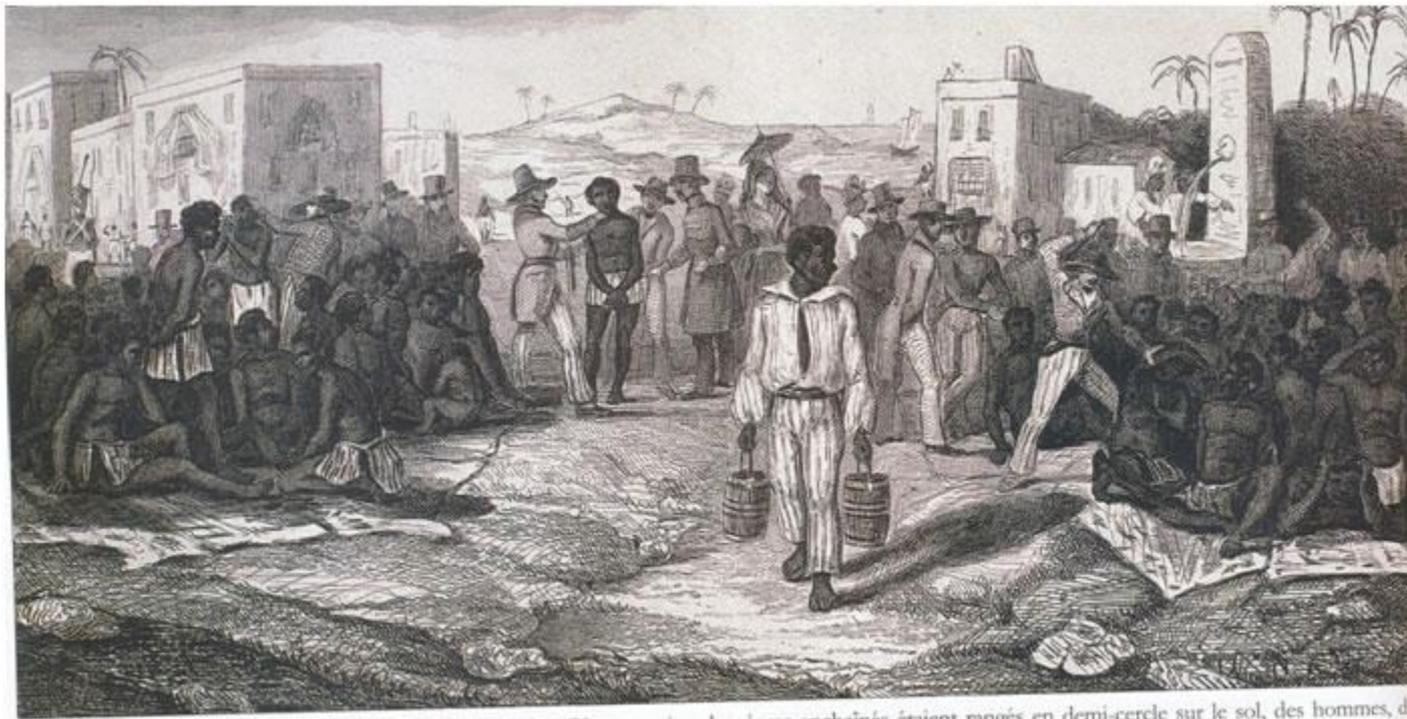
Le voyage de la Concorde



Représentation des comptoirs européens de Xavier au début du XVIII^e siècle. Cette capitale du royaume de Madagascar servait de point de départ pour les navires de traite négrière à destination du Nouveau Monde.

C'est le 24 mars 1717 que la frégate négrière nantaise Concorde appareille de l'estuaire de la Loire à destination des côtes de Guinée. Le navire est armé de seize canons et compte soixante-quinze hommes d'équipage sous les ordres du capitaine Pierre Dosset. Dès le départ, les

conditions de navigation se révèlent difficiles et un fort coup de vent contraint le capitaine à chercher un abri sous l'île de Groix. Le mauvais temps persiste, au point que l'équipage doit filer son câble par le bout et abandonner sur le fond une ancre de 1 500 livres. La Concorde talonne par trois fois, heureusement sans gravité. Le vent mollit enfin et, après avoir mouillé à proximité de l'île d'Hoëdic, sans doute dans l'attente de courants favorables, le navire retourne dans l'estuaire de la Loire et gagne le mouillage de Mindin.



Scène de marché aux esclaves dans un comptoir africain. "Une centaine de nègres enchaînés étaient rangés en demi-cercle sur le sol, des hommes, des femmes, quelques adolescents, tous complètement nus; un remugle de corps mal lavés traînait autour d'eux..." (Jean Lainé, *Les Négriers*).

La Concorde embarque une nouvelle ancre, complète son avitaillement et reprend la mer le 12 avril. Après cinquante-six jours de navigation, et la perte d'un matelot tombé à la mer, Dosset reconnaît la côte d'Afrique le 6 juin. Ce n'est qu'un mois plus tard qu'il atteint la côte des Esclaves, en Guinée septentrionale, où il traite cinq cent seize captifs et quatorze onces de poudre d'or. Les rapports de mer établis par les négriers de l'époque fournissent de nombreux détails qui permettent de reconstituer les circonstances de cette escale qui va durer trois mois.

Le comptoir de Juda

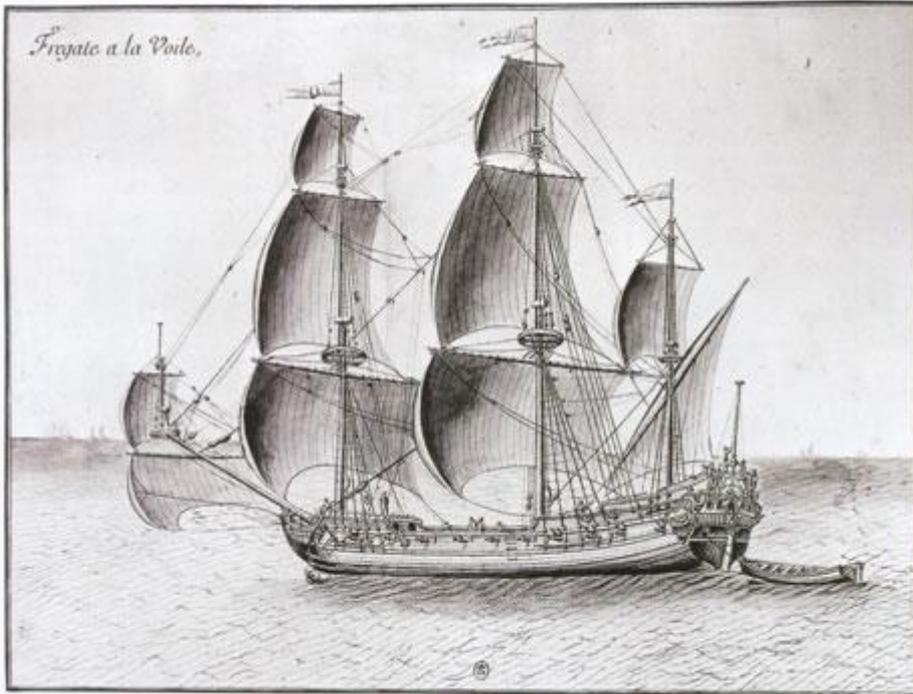
La rade de Juda (ou Ouiddah, petit royaume de la Guinée supérieure faisant partie aujourd'hui du Bénin) est dangereuse du fait d'une barre qui interdit l'approche des navires de fort tonnage. C'est par l'intermédiaire des pirogues locales que le capitaine, accompagné d'une partie de ses officiers, débarque pour mener à bien ses opérations de traite avec les Africains marchands d'esclaves. Il effectue au préalable ses démarches administratives au fort français, lequel a salué l'arrivée du bâtiment d'une salve d'artillerie. Le missionnaire Jean-Baptiste Labat (1663-1738) écrit à propos de ce lieu: "Chaque soir, gouverneurs, facteurs et capitaines de vaisseaux se réunissent sur l'une des places plantées d'arbres, se promenant et traitant de leurs affaires". De là, le capitaine se dirige vers Xavier (ou Savi), capitale de Juda située à trois lieues et demie de la mer. Grâce à la présence des comptoirs, construits dans un style européen, cette ville est particulièrement prospère. Le voyageur danois Paul-Edmond Isert écrira en 1785: "Il y avait tous les jours des marchés, dans lesquels on vendait en public toute sorte de marchandises, tant d'Europe que d'Afrique".

Le capitaine négrier se rend dans le sérail, c'est-à-dire le palais royal. Il doit, pour ce faire, franchir l'enceinte de terre battue, gardée par des sentinelles, que domine une tour où veille une batterie de canons. Arrivé dans la cour des coutumes, il paie les droits relatifs à la traite, puis pénètre à l'intérieur du palais proprement dit édifié en terre grasse et rouge. Le roi se tient au fond de la salle d'audience, assis sur son trône, un vaste fauteuil dressé sur une estrade couverte d'un tapis de Turquie. Il a les reins ceints d'une longue jupe de soie blanche, qui forme traîne, et porte des bracelets et des colliers de perles d'or et de corail. Le souverain reçoit le capitaine, le fait asseoir, boit avec lui des liqueurs, puis honore sa sortie d'une salve de canons. Il aime tout particulièrement les Français, a priori bons clients, et appelle les armateurs nantais, tels que Montaudouin et Laurencin, ses "cousins

et bons amis". Le roi déborde de bonnes intentions, à tel point que lorsque ses prisons viennent à manquer de captifs, il vend volontiers ses propres femmes!

Le négrier vers son destin

La Concorde appareille le 9 octobre 1717 à destination de la Martinique. Le voyage est rude, le scorbut et les fièvres déciment matelots et esclaves. Alors que la traversée touche à sa fin, quinze marins sont déjà morts, trente-six autres sont malades et incapables de participer à la manoeuvre. Quant aux captifs, soixante et un ont péri en cours de route. Ce taux de mortalité n'est malheureusement pas exceptionnel lors des expéditions négrières de l'époque.



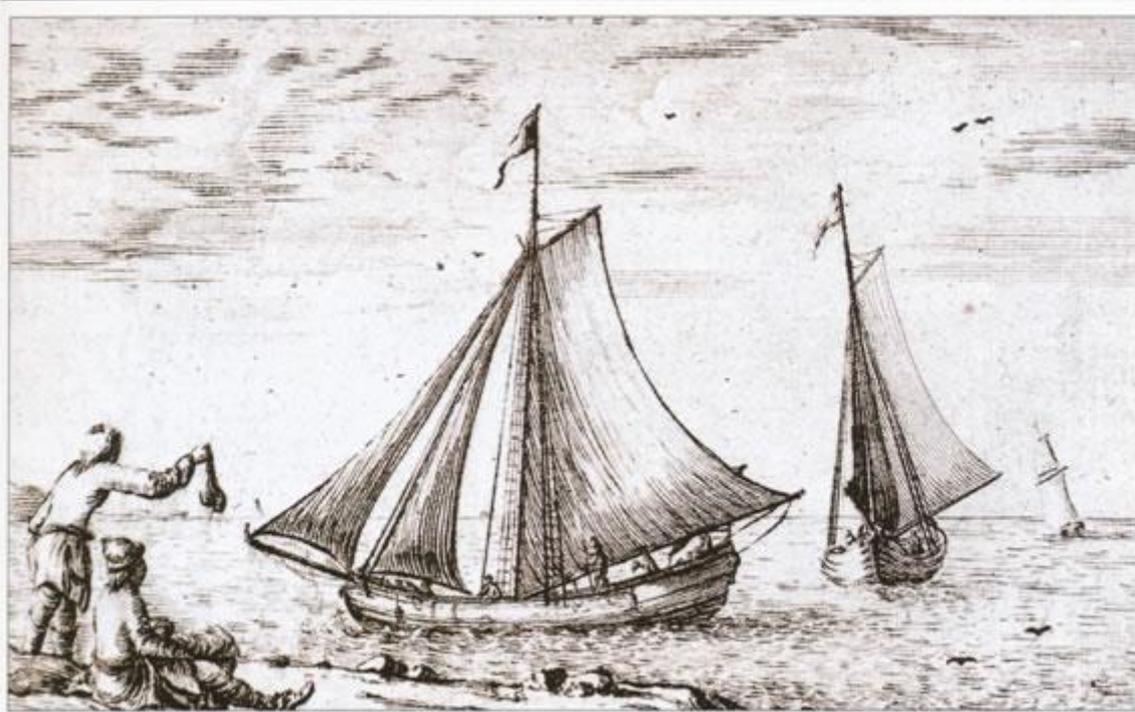
Frégate des premières années du XVIII^e siècle. Ce type de navire, gréé à trois mâts et dit "de bonne marche", avait la préférence des armateurs les plus fortunés qui se livraient au commerce triangulaire.

Le 28 novembre, alors que la Concorde se trouve à une centaine de milles au Sud de la Martinique, l'apparition de deux navires arborant le pavillon noir laisse peu d'espoir d'échapper à la capture. Car les pirates sont si redoutés des équipages que ceux-ci refusent souvent de se défendre par crainte de sanglantes

représailles. Les mauvaises rencontres à l'approche des îles antillaises sont monnaie courante durant cette période clé de l'histoire de la Caraïbe. Elles s'inscrivent dans un même contexte où se mêlent la flibuste, la piraterie et la traite négrière.

Après avoir servi les gouvernements français, anglais et hollandais dans leur politique coloniale en Amérique, et combattu l'hégémonie économique de l'Espagne, la flibuste tend à disparaître dès le début du XVIII^e siècle. En 1713, la paix d'Utrecht met fin définitivement à cette activité officielle. Ses principaux acteurs deviennent planteurs, résidents, ou vont grossir les rangs des équipages qui s'adonnent à la piraterie océane. Nombre de ces derniers quittent leurs bases de la Jamaïque pour les Bahamas, et plus particulièrement l'île de Nouvelle Providence qui leur sert de repaire. C'est l'âge d'or de la piraterie anglaise, qui s'achève en 1718 avec l'amnistie générale accordée par le roi George I. Ensuite cette activité illicite se déplacera vers Madagascar et les autres îles de l'océan Indien.

La Concorde est donc une proie facile pour les pirates et la capture s'effectue sans effusion de sang. Le navire est conduit à l'île de Bequia, dans l'archipel des Grenadines, où il fait l'objet d'un pillage en règle. Plus tard, le capitaine Dosset indiquera dans son rapport avoir été capturé par "deux bateaux forbans anglais, l'un de douze et l'autre de huit canons, armés de deux cent cinquante hommes commandés par Edouard Titche (sic)". Quelques jours après la capture de la Concorde, les pirates arraisonnent près de l'île Saint-Vincent un petit navire marchand. Sans doute de peu d'intérêt, ce dernier est laissé à son équipage, non sans que les forbans se soient emparés "d'un cochon, de quelques volailles et de plusieurs régimes de figes et de bananes".



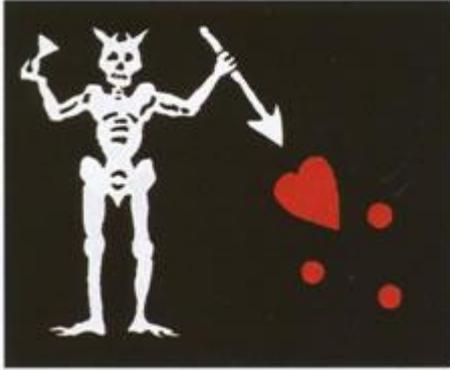
Gravure de Guérault du Pas, publiée en 1710, représentant un "Brigantin des Isles de l'Amérique servant pour le commerce et quelque fois armé en course". Ces sloups, dits "bermudiens", rapides, assez évolutifs et calant peu d'eau, étaient très prisés par les pirates qui fréquentaient les eaux antillaises.

En compensation, ils auraient offert à leurs victimes "vingt-cinq nègres provenant de la Concorde". Un nombre en contradiction avec un autre document, du 21 décembre 1717, qui fait état de cent six captifs généreusement abandonnés par l'un des deux chefs pirates, contrairement d'ailleurs à l'avis de son compère. "Il ordonna [au navire marchand] d'appareiller promptement parce que [...] son associé, ne voulant point consentir à la restitution du bateau ni à la donation des nègres, était dans la résolution de le retenir absolument." On peut supposer que cette curieuse transaction s'effectua à l'initiative d'Hornigold, qui devait solliciter le pardon du roi George Ier quelques semaines plus tard, tandis que Barbe-Noire s'opposait à une telle générosité.

C'est vraisemblablement aussi grâce à Hornigold que Dosset se voit mettre à disposition le plus petit des deux bateaux pirates. Un sloup bermudien qu'il rebaptise ironiquement Mauvaise Rencontre — car nombre de bâtiments de commerce sont alors appelés Heureuse Rencontre. En deux voyages, le capitaine nantais conduit à la Martinique le reste des captifs et des membres d'équipage de la Concorde. En effet, les pirates conservent quatre-vingt-cinq esclaves et dix marins enrôlés de force, tandis que quatre autres rejoignent volontairement les rangs des forbans.

Sous le pavillon noir

Barbe-Noire décide d'armer le négrier nantais — rebaptisé Queen Anne's Revenge — pour mener à bien ses coupables activités. Aux seize canons déjà présents il fait ajouter vingt-quatre pièces d'artillerie supplémentaires. Le bâtiment n'étant percé que de seize sabords, la plupart de ces nouvelles pièces sont sans doute de petit calibre, servies par un seul homme et fixées sur la partie supérieure du bastingage.



Le pavillon du pirate Barbe-Noire.

Constatant l'importance du trafic commercial local, les pirates croisent dans les parages de l'île Saint-Vincent. Le 4 décembre, ils prennent un vaisseau anglais — vraisemblablement le Great Allen — mouillé dans l'anse de Layou. Un capitaine de Saint-Pierre de la Martinique rapportera à ce propos que le pirate "obligea le capitaine, qui avait envoyé son équipage à terre avec tout son argent, d'aller [...] à son bord. Là, à force de coups et en le menaçant de le faire pendre, il le contraignit d'envoyer chercher son trésor, qui consistait en six mille livres sterling, et ensuite de le lui remettre s'il voulait se garantir de la mort. Il y a

apparence que ce capitaine anglais avait tiré cette somme considérable de la traite qu'il avait faite à Saint-Vincent, sans doute avec les Français qui y vont naviguer sous prétexte d'aller à la pêche."

Un peu plus tard, à l'aide du canot du bord armé de dix hommes, les pirates prennent un petit bâtiment mouillé non loin de E, dans l'anse de Mayougany, pour y faire provision de bois à brûler. Les douze membres de l'équipage sont contraints d'abandonner leur navire et se réfugient à terre. Cependant, un bref combat s'engage et deux forbans sont tués, avant que les marins ne disparaissent dans les bois. Voilà de quoi mettre Barbe-Noire de mauvaise humeur! Aussi décide-t-il de brûler les deux prises. "Ensuite, poursuit le capitaine de Saint-Pierre, ayant enlevé à terre cinq autres hommes de l'équipage du capitaine anglais et une jeune fille anglaise [...] qu'un habitant français de Saint-Vincent leur livra pour deux nègres, ces forbans, après avoir gardé six jours dans leur bord les neuf hommes et la fille, les renvoyèrent à terre et leur donnèrent cinq nègres de la cargaison de Dosset, puis mirent à la voile."

L'incendie des deux bâtiments semble confirmé par deux autres capitaines dont les navires ont été pris en chasse les 6 et 7 décembre. Dans leur déposition, ils signalent avoir vu devant Saint-Vincent "un bateau et un navire tout en feu" et avoir remarqué "à l'éperon du navire brûlant des figures qui faisaient croire que c'était le Dauphin, appartenant au sieur Simon, marchand de Saint-Pierre qui l'attendait d'un jour à l'autre".

Les méfaits de Barbe-Noire ne s'arrêtent pas là; au cours de la même croisière, d'autres bâtiments sont

attaqués



Carte dressée à la fin du XVII^e siècle par le cosmographe P. Coronelli, représentant les Antilles, appelées à l'époque Archipel du Mexique puis, plus tard, Indes Occidentales. Cette région constituait un véritable terrain de chasse pour les flibustiers et les pirates et leur offrait de nombreux repaires, comme l'île de la Jamaïque, celle de New Providence aux Bahamas ou encore l'île de la Tortue sur la côte occidentale de Saint-Domingue, aujourd'hui République d'Haïti. De là, ils s'attaquaient aux navires de commerce venus d'Europe, mais aussi aux caboteurs qui desservaient les îles et les reliaient au continent.

dans les parages de l'île. Alertées, les autorités britanniques tentent de mettre fin à ces exactions. Si l'on en croit la lettre qu'il adresse à l'amirauté deux mois après les faits, Francis Hume, commandant du HMS Scarborough, a appris en décembre 1717 la présence dans les eaux antillaises d'un navire pirate de trente-six canons et deux cent cinquante hommes, accompagné d'un sloop de dix canons. Sachant qu'ils avaient fait route au Nord, il a appareillé le 18 décembre pour rejoindre le Seaford, stationné à Antigua. Les deux bâtiments ont ensuite gagné les îles de Nevis et St Christopher pour y embarquer un officier et vingt soldats. Là, Hume a été informé que les pirates étaient partis depuis trois semaines. Après avoir capturé un navire français chargé de sucre, ils auraient fait route vers l'Ouest, passé le canal de la Mona (entre Porto Rico et Haïti) puis croisé sur la côte Nord d'Hispaniola (Haïti).

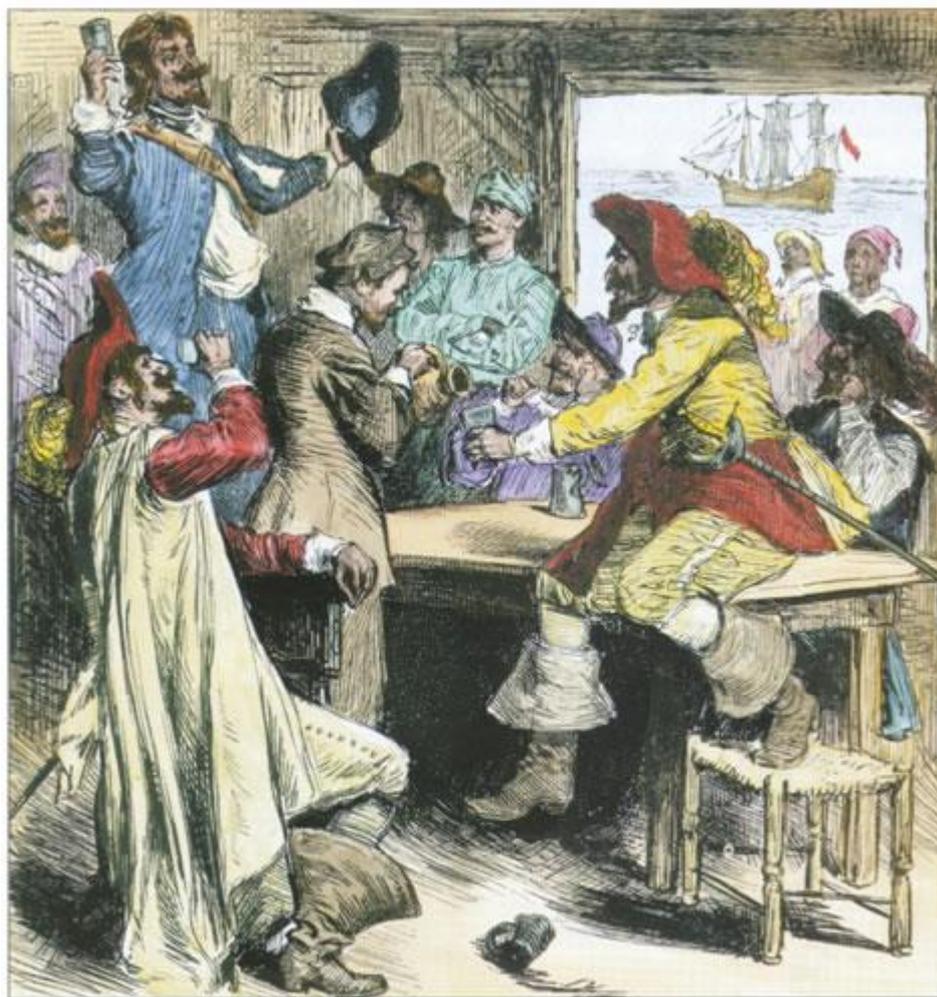
Il semble donc que Barbe-Noire et ses équipages se dirigent vers les possessions espagnoles entre la fin de l'année 1717 et le début de 1718. Cela explique sans doute pourquoi ils ne sont pas signalés dans les archives anglaises durant cette période. Nos pirates réapparaissent à la fin du mois de mars à l'Ouest des Caraïbes, dans la baie du Honduras, où ils font plusieurs prises, dont le sloop de 80 tonneaux Adventure et le gros navire marchand Protestant Cesar. Le premier, sous les ordres du capitaine David Herriot, battait pavillon jamaïcain et transportait du bois de campêche; Barbe-Noire décide de l'intégrer dans sa flottille. Quant au second, qui avait repoussé une première attaque, il est incendié afin que son capitaine, qui faisait route vers la Nouvelle-Angleterre, ne puisse se vanter d'avoir mis un pirate en difficulté. Il ne fait sans doute pas bon résister à

l'impétueux Barbe-Noire, dont la réputation d'homme violent et impitoyable ne laisse pas d'impressionner les marins les plus courageux.

Charles Johnson le décrit d'ailleurs comme un personnage fort antipathique. "Les jours de combat, écrit-il, il portait ordinairement une sorte d'écharpe qu'il passait sur ses épaules avec trois paires de pistolets dans des fourreaux en forme de bandoulière. Il attachait sous son chapeau deux mèches allumées qui lui pendaient de chaque côté du visage. Cet équipement, joint à ses yeux dont le regard était naturellement farouche et cruel; le rendait si affreux qu'on ne saurait imaginer une furie des enfers plus terrible que ne l'était sa figure." Toutefois, les talents de romancier de l'auteur — rappelons qu'il s'agit probablement de Daniel Defoe — méritent que l'on accorde un crédit relatif à la véracité de cette description.

Quittant les côtes du Honduras, Barbe-Noire fait voile vers les îles Caïman (à l'Ouest de la Jamaïque), où il s'empare d'un petit navire de pêche à la tortue, sans doute dans le but de s'approvisionner en vivres frais. De là, la flottille contourne l'extrémité occidentale de Cuba en direction des Bahamas et, sur sa route, capture un petit sloop espagnol.

Sur les cites américaines



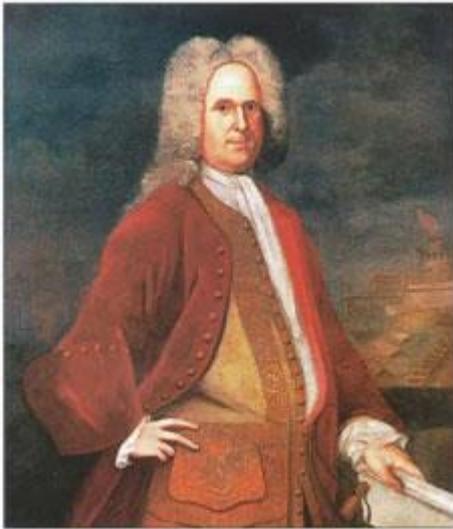
Au port de Charleston (Caroline), les saccages à terre, les relâches ou les retrouvailles avec d'autres forbans étaient pour les pirates l'occasion de grandes fêtes, prétextes à des excès de toutes sortes.

Vers la mi-mai 1718, la flottille de Barbe-Noire croise le long des côtes de Caroline du Sud et se présente devant Charleston.

Après avoir pillé un bateau-pilote et plusieurs navires mouillés sur rade — qui auraient rapporté un butin de 1 000 à 1 500 livres en pièces d'or et d'argent —, le pirate fait le blocus du port. Il retient en otages un membre du conseil du gouverneur Robert Johnson et son fils, puis exige une rançon. Cette dernière consiste

en un coffre de médicaments d'une valeur de 300 à 400 livres. Il semble qu'une partie de l'équipage du Queen Anne's Revenge ait contracté la syphilis, d'où cette demande peu banale de la part d'un pirate plutôt avide d'espèces sonnantes et trébuchantes.

Moins d'une semaine après avoir quitté les lieux, la flottille est en Caroline du Nord, au large de la baie de Topsail (aujourd'hui baie de Beaufort). Il y a là le Queen Anne's Revenge, le sloop Revenge commandé par Stede Bonnet, un second sloop sous les ordres du pilote Israel Hands, ainsi qu'un petit bâtiment sur lest qui avait été capturé au large de La Havane. Le lendemain de son arrivée, Barbe-Noire décide, avec quelques-uns de ses plus proches compagnons, de se séparer d'une

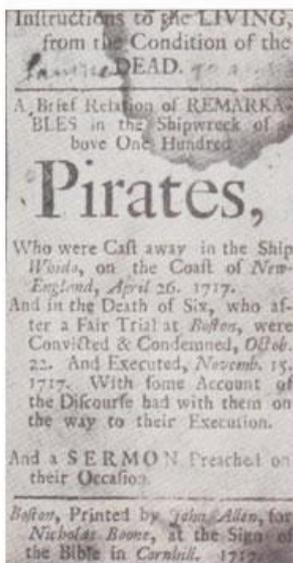


Alexander Spotswood, gouverneur de Virginie, mit fin aux activités de Barbe-Noire en affrétant contre lui deux sloups armés en guerre.

partie de ses équipages afin d'éviter de partager avec eux le butin saisi au cours de la croisière. Prétextant un carénage, il échoue son navire sur un banc de sable, demande assistance à Hands dont le sloup s'échoue à son tour, puis il s'embarque dans une chaloupe avec une quarantaine d'hommes. Il se débarrasse de dix-sept d'entre eux sur une île déserte. Ces derniers seraient probablement morts de faim et de soif si Stede Bonnet n'était venu à leur secours deux jours plus tard.

Une lettre adressée aux lords de l'amirauté, le 12 juillet 1718, par le capitaine Ellis Brand, du HMS Lyme, nous fournit une indication quant à la localisation de l'échouement du ,Queen Anne's Revenge. "Vers le 10 juin, un grand navire pirate de quarante canons, accompagné de trois sloups, vint sur les côtes de Caroline du Nord et tenta de pénétrer dans le mouillage de la baie de Topsail. Le navire ainsi qu'un des sloups s'échouèrent sur la barre à l'entrée de cette baie."

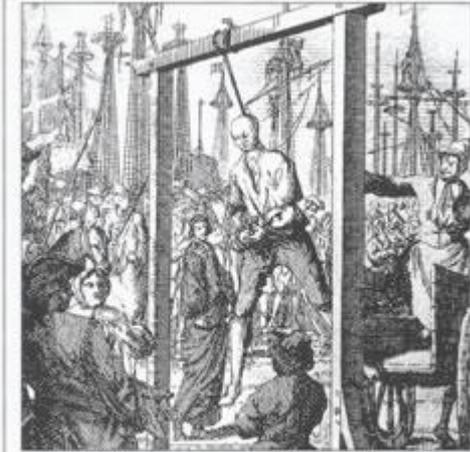
Si la renommée de Barbe-Noire est en partie liée à l'odyssée du Queen Anne's Revenge, sa carrière ne s'arrête pourtant pas là. Le gouverneur de Caroline du Nord, Charles Eden, lui accorde son pardon, non sans avoir, paraît-il, perçu une part du butin. Edward Teach se retire alors dans la petite ville de Bath, sur la rivière Pamlico, où il se marie avec la fille d'un planteur. Cette jeune personne âgée de seize ans est, dit-on, sa quatorzième épouse! La passion amoureuse est toutefois de courte durée. Possédé par le démon de la piraterie, Barbe-Noire reprend la mer en juin 1718 bord du sloup Adventure. Après un raid aux Bermudes, il ramène un navire français chargé de sucre, qu'il déclare avoir découvert abandonné en mer par son équipage. Puis, il se réfugie dans l'île d'Ocracoke (au Sud-Ouest du cap Hatteras) où, en septembre, un autre pirate du nom de Charles Vane le rejoint avec quatre-vingt-dix hommes. Retrouvailles célébrées par une immense orgie dont les échos parviennent jusqu'aux oreilles du gouverneur de Virginie, Alexander Spotswood. Celui-ci s'est juré de mettre un terme aux agissements des pirates. Il dispose de deux vaisseaux de la Marine britannique, les HMS Pearl et Lyme, mouillés sur la rivière James. Le tirant d'eau de ces navires étant trop important pour pénétrer en baie d'Ocracoke, le gouverneur affrète deux sloups dont l'un est commandé par le lieutenant Maynard, du HMS Pearl, et l'autre par l'enseigne Baker du HMS Lyme.



A gauche: les sermons prêchés à l'occasion des exécutions des forbans capturés confirment la fin de la piraterie dans la mer des Antilles. A droite: le retour triomphal du lieutenant Maynard, qui a fait accrocher la tête de Barbe-Noire au beaupré de son sloup, tel un sinistre trophée.

Le 21 novembre, Maynard attaque Barbe-Noire dans son repaire d'Ocracoke, à proximité d'un mouillage naturel situé à la pointe Sud de l'île et appelé depuis la baie de Teach. Au

cours de l'affrontement, Baker est tué avec plusieurs de ses hommes après avoir essuyé une bordée de l'Adventure. Puis Barbe-Noire vient à l'abordage du sloup de Maynard. Après un féroce combat, digne des films mythiques du genre, les deux protagonistes se retrouvent face à face et s'affrontent au pistolet. Touché mortellement, puis sabré par l'un des hommes de Maynard, le pirate s'écroule. Ayant perdu leur chef, les autres forbans se rendent. Sur ordre du lieutenant, la tête tranchée de Barbe-Noire est exposée, amarrée à l'extrémité du beaupré du sloup. Ainsi s'achève la vie tumultueuse du fameux pirate.



La pendaison de Stede Bonnet à Charleston quelques semaines avant la mort de Barbe-Noire.

Sur les quinze hommes faits prisonniers, seuls deux boucaniers échapperont à la pendaison: Samuel Odell, qui avait été enrôlé de force, et Israel Hands qui, suite au report de son exécution, bénéficiera de l'amnistie royale. Ce dernier retournera en Angleterre, où il finira sa vie comme mendiant à Londres. Il deviendra l'un des principaux personnages du roman de Robert Louis Stevenson, L'Île au trésor, passant du même coup à la postérité, tout comme son redoutable chef Barbe-Noire. Quant à Stede Bonnet, arrêté à l'automne 1718, il sera pendu quelques semaines plus tard dans le port de Charleston. Ces exécutions mettent un terme à la piraterie sur les côtes d'Amérique du Nord

Inséré 18/05/21 DOSSIER Enlevé 18/06/21

OCIMF's new human factors orientation

OCIMF has released a paper about its plans to integrate human factors into its activities – helping companies set up their workplaces so they are less likely to support human mistakes.

The Oil Companies International Marine Forum (OCIMF) has released a paper (October 2020) showing how it will “integrate human factors into its activities and contribute to making our industry progress on human factors.”

The basic “human factors” philosophy is to go beyond the idea that “people cause accidents” - even if the incident is attributed to human involvement, it says.

“Most mistakes, actions and decisions are themselves the result of the way the workplace is set up, how work is designed, equipment and control measures, and how leaders influence the culture in an organisation,” OCIMF says.

OCIMF defines human factors as “the physical, psychological and social characteristics that affect human interaction with equipment, systems, processes, other individuals and work teams.”

“It is the people on our ships and in our operations and support teams who make safety work,” it says.

“However, human error still occurs in interaction with conditions, systems and/or other people. By addressing these interactions, we can reduce human error, thereby reducing incidents and improving reliability and productivity.”

Terminology

OCIMF saw a choice of three terms it could use - "human element", "human factors" and "human performance".

It thinks "human element" is a term which was initially used when the focus was on "changing the person" such as through training and motivation, and it is only used in the maritime industry.

But "human factors" would be a better term, since it is also used in other industries (oil and gas, nuclear, aviation, military), it recognises that human error can be caused by workplace factors, equipment, task design and organisational conditions.

It also considered the term "human performance", which seems to accept the idea that human variability is inevitable and normal.

Guiding principles

OCIMF set up some guiding principles for talking about human factors, based on those from oil and gas, aviation and nuclear industries.

The first principle is to recognise that people do make mistakes, their actions are rarely malicious and usually make sense to them at the time, and mistakes are typically due to conditions and systems which make their work difficult.

So the important work is to understand the conditions in which mistakes happen. This leads to work to prevent or correct them.

Other principles are: that people know the most about their work (not their managers), and are key to any solution; plant, tools and activities can be designed to reduce mistakes and manage risk better;

Leaders contribute to shaping conditions that influence what people do; it matters how leaders respond when things go wrong and take the opportunity to learn.

Focus areas

OCIMF focusses on the biggest risks to ships and crew - loss of primary containment of the vessel (leaks and spills), fatalities and serious injuries.

It has five "focus areas" for looking at human factors.

1--Leading and shaping the culture you want. The role of latent and organisational conditions in accidents; how leadership shapes culture; diverse cultures; industrywide culture; workplace influence on crew wellbeing; people as a solution, not a problem; listening to the workforce; responding when things go wrong.

2--Well executed tasks and procedures. Designing tasks to reduce error; effective control of work; effective procedures; the effectiveness of regulations; training and skill building; work as we imagine it, and as it really is; taking human factors into account in risk assessments; manning and workload management; selection and capability of individuals; fatigue; situational awareness

3--Well-designed equipment and controls. Human-centred design of bridge, engine room, cargo, deck and terminal equipment; human-machine interfaces; the impact of automation and increased complexity

4--Skills to respond to emerging situations. Building bridge, engine room and crew skills; situational awareness and recovery; team communications

5--Learning before and after things go wrong. Effective human factors investigation; learning from the people who do the task, to get ahead of incidents

Strategic actions

Strategic actions OCIMF will take are to provide publications and training, make a development pathway to build capability in the industry, building human factors perspectives into OCIMF's inspection and self-assessment programs including SIRE, OVID and TMSA, and its publications like MEG and ISGOTT.

It will engage and collaborate with IMO and other industry organisations and institutions in key human factors issues, such as improving quality of marine incident investigations, skills and training.

New structure

The publication of the human factors paper follows OCIMF's announcement in September 2020 that it had "overhauled its committee structure", so it could better focus on identifying and mitigating issues of the highest risk.

It was setting up a new "risk advisory function", responsible for identifying risks most likely to impact activities of members. It will focus on fewer activities, but higher risk activities. There are four "functional committees", providing specific expertise on legal, human factors, environment and maritime security, across all work conducted by the organisations. So they will all give input to the principal committees. This implies that these four areas are now the areas where OCIMF has the greatest interest.

Then there are three principal committees which will "drive the strategic priorities of the organisation and will convene specialist Expert Groups and Working Groups to deliver on specific outcomes".

The principal committees are publications and advocacy - tankers, barges, terminal interfaces;

publications and advocacy - offshore; and Programmes.

Explained simply, the "publications and advocacy" activity is about writing best practise publications and seeking input in development regulations.

The "programmes" activity runs OCIMF's inspection and management self-assessment programs.

OCIMF was formed in April 1970 in response to the growing public concern about marine pollution, particularly by oil, after the Torrey Canyon incident in 1967. Today, OCIMF's membership includes every oil major in the world along with the majority of National Oil Companies.

Inséré 19/05/21 DOSSIER Enlevé 19/06/21

Bilge water compliance issues

An Alfa Laval white paper on oily water separation

1. Summary

The shipping industry worldwide is acting in good faith to comply to the International Maritime Organization (IMO) Resolution MEPC.107(49) for pollution prevention equipment for machinery spaces of bilges of ships. Regulations mandate that all vessels must operate an onboard type approved bilge water treatment system. This system must be able to treat oily waste water to comply with requirements of oil-in-water content of 15 ppm or less for overboard discharge. Bilge water treatment systems undergo rigorous testing to obtain IMO type approval certificates.

However, despite industry efforts to comply with regulations, both the number and the amount of the fines for violation of IMO Resolution MEPC.107(49) have increased in recent years. Non-compliance raises questions about the adequacy of type approved bilge water treatment technologies as well as of the test protocols, which in some cases do not accurately reflect real-life operating conditions. It also draws attention to the critical need to use OEM filters for systems using static technology.

Ship owners and operators cannot underestimate the value of operating a trustworthy bilge water treatment system on board. With proven centrifugal separation technology at its core, Alfa Laval PureBilge has been tested and validated for compliance under real-life operating conditions on board, including pitching and rolling on the high seas. There is enormous business potential for bilge water treatment systems that require low capital expenditure. However, Alfa Laval believes that the benefits of investing in centrifugal separation technology with a solid track record of compliance far outweigh the risks of developing systems that, under real-life conditions, often fail to meet the prescribed oil-in-water requirements. The costs of noncompliance on the marine environment are too high.

While this paper does not in any way purport to be an academic study, it intends to address the current regulatory playing field, the type approval processes, and the various technologies that are now available. It proposes that static gravity-type systems are inefficient and, despite of their so-called low capital costs, end up costing ship owners and seafarers dearly.

The aim of this Alfa Laval white paper is to share insights into why compliance with bilge water regulations proves difficult and what maritime authorities, ship owners and operators, and bilge water treatment system suppliers can do to promote compliance.

Test regimes and protocols for type approval of these systems are inadequate and fail to reflect real-life conditions on board vessels. Therefore review and revision of these regimes and protocols are required.

This white paper recommends the following actions by the IMO:

- Conduct an assessment of current test protocols.
- Conduct an assessment of bilge water treatment technologies.
- Make these assessments available to the public.
- Make the necessary amendments to test protocols and type approval processes to ensure the use of compliant bilge water technology.
- Continue to support Coast Guard, State and industry efforts to improve bilge water/pollution prevention practices.

It also recommends the following actions by ship owners and operators:

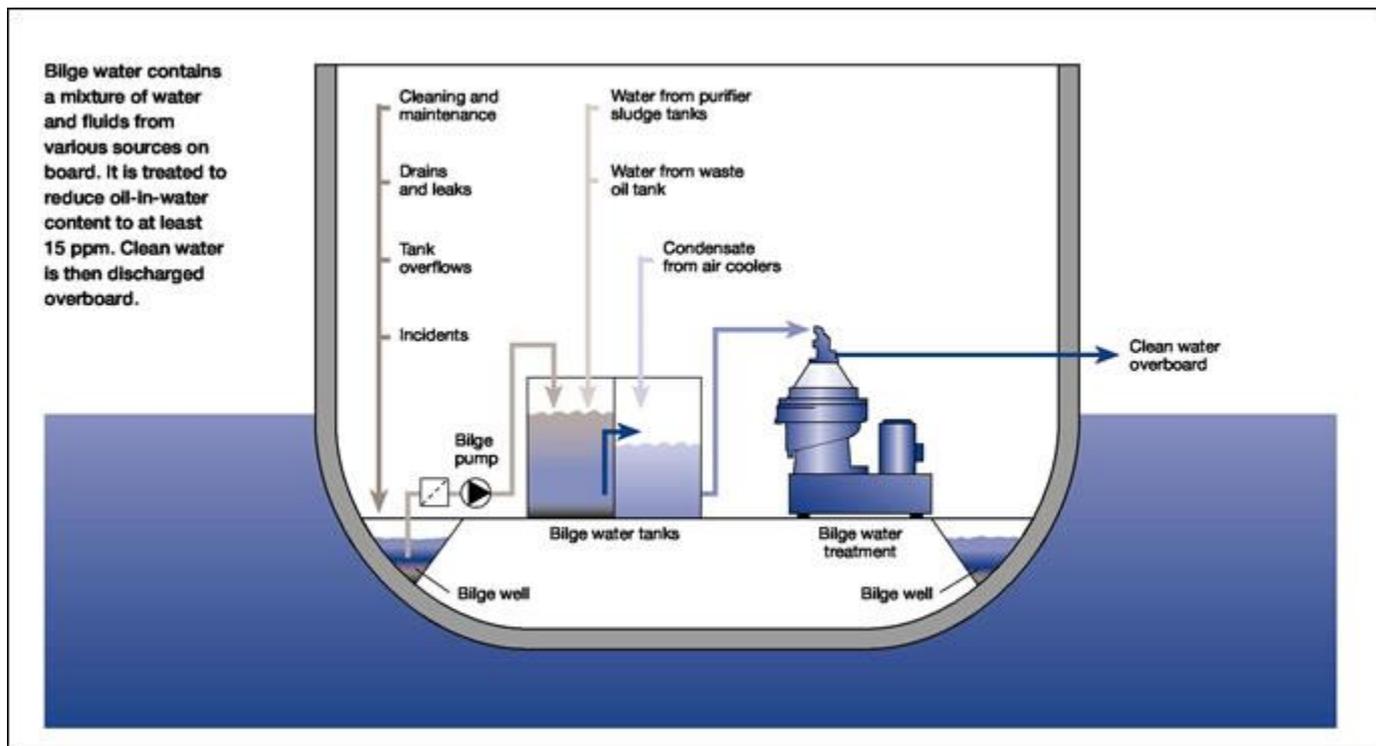
- Evaluate bilge water treatment systems now on board to ensure effective treatment.
- Follow OEM recommendations for operation of static systems and use OEM filter elements and chemical additives as required.
- Improve seafarer training in handling oily waste water.

This paper also proposes that an efficient, cost-effective bilge water treatment solution is available to safeguard the world's oceans from oily waste pollution and ship owners and operators from MEPC.107(49) violations and reputational damage. Proven compliant, that solution is Alfa Laval PureBilge.

2. Introduction

Running a ship's engine and auxiliary machinery produces oily waste. These highly noxious oily chemical by-products collect in a vessel's bilge and amount to millions of litres of oily waste streams each year. Bilge discharge is considered to be one of the major factors contributing to the pollution of the oceans, and vessels are coming under increasing scrutiny by port state control authorities worldwide.

Oily bilge water is a mixture of water, oily fluids, lubricants and greases, cleaning fluids, detergents and other chemical wastes. The main sources of oily waste on board are ship engines, generators and other parts of the propulsion system, such as pipes, pumps and mechanical and operational components installed in ship machinery spaces.



As an operational practice, bilge wells are periodically pumped out. The accumulated bilge water is transferred to a holding tank for discharge to a port reception facility or for treatment by way of an onboard system designed to remove the oil from the waste stream prior to discharge of clean water overboard.

Discharge of bilge water is restricted for commercial vessels under Annex I of the International Convention for the Prevention of Pollution from Ships. Under MARPOL, all vessels of 400 gross tonnage and above are required to install and operate equipment on board that ensures the discharge of 'clean' bilge water does not exceed 15 parts per million (ppm) or less of oil. Some flag states and administrations stipulate a discharge limit of 5 ppm.

Vessels are also required to document all oil operations in an oil record book and to install and operate an oil content monitor or bilge alarm, which indicates the performance of the bilge separator, whether static or dynamic.

There are numerous considerations that ship owners must take into account when specifying an oily water treatment system. For instance, is a single-stage or multi-stage treatment process required? Does the technology require pre- and/or post-treatment systems?

Is the technology operator friendly? What are the requirements for maintenance and for consumables? What amount and types of waste are generated? And above all, how does the system perform?

Oily water treatment systems tend to fall into two categories: those that work on board ships and those that do not.

3. Technologies

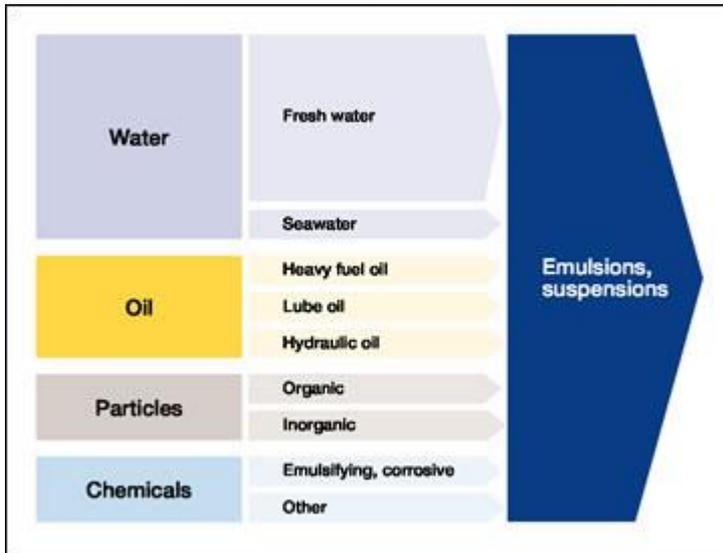
An oily water treatment system typically combines a gravity- or centrifugal-type separator with an additional process to reduce the concentration of emulsions. This process may include absorption and adsorption, biological treatment, coagulation and flocculation, flotation, and ultrafiltration.

3.1. Static or gravity-based separation

Gravity-based or static separation systems are the most common bilge water treatment systems found on board ships today. These were once considered effective when ships

were running on lighter fuels and bilge water contained minimal emulsions. However, gravity-based separation systems are now considered ineffective; they fail to treat the complex cocktail of heavy fuel oil (HFO) mixed with other types of oil and chemicals found in the bilge of modern tankers and other large commercial vessels today.

Bilge water composition.



Static coalescer-type separators only operate at 1 G, a force that is insufficient for breaking down emulsions to meet the mandatory 15 ppm requirement. In a pitching and rolling environment, complex and emulsified bilge water compositions can seldom be separated through gravity alone. This means that bilge water must be stored in large tanks until conditions are right for treatment, and that chemicals and carbon adsorption filters must be used to handle what does not separate naturally.

When the IMO rules were updated, emulsions were added to bilge water test protocols. However, many systems were found to be ineffective in breaking down emulsions without the use of chemical additives.

What's more, oil particles of 20 micron or less in size are not separated from the emulsion mixture, and the chemical concoction found in oily waste streams can limit separation efficiency in the presence of dense and highly viscous oils.

In 2004, tests carried out on a static coalescer-type system on board a U.S. naval vessel found that treated bilge water not only exceeded the 15 ppm limit, but was recorded at 42 ppm after completion of post-treatment.

3.2. Membrane filtration



This technology uses oil-eating bacteria to treat oily waste water. The presence of oxygen, nutrients and hydrocarbons and other contaminants in a carefully managed environment is required to promote growth of these microorganisms. Bioremediation is typically used as the first stage in a multi-stage purification process along with a plate separator; however, membrane clogging may result and require costly and frequent membrane replacement.

While these systems remain a good prospect for smaller craft, such as luxury yachts, where there is a less potent chemical mixture in the bilge, membrane filtration does not present a viable solution for large commercial vessels.

3.3. Dynamic or high-speed centrifugal separation

Unlike static systems, high-speed or dynamic centrifugal separators operate with a gravitational force of 6000 G, enabling them to cope with the constant motion of a vessel as well as the complexities of modern bilge water. With a long track record of effective

performance on board ships, this type of oily waste water treatment system is not sensitive to high solids or oil loads. No additional chemicals are required, and maintenance is minimal. Clean water can be pumped directly overboard thereby negating the need for large bilge water holding tanks.

Not only is such technology readily available, centrifugal separation succeeds where static technologies fail. Whereas static systems operate in batches and require frequent filter changes and/ or chemical dosing to do the job, a high-speed centrifugal bilge water separator can operate continuously without requiring much attention. Varying bilge water feed, oil shocks and even the toughest emulsions pose no difficulty when using centrifugal separation.

4. The problem

4.1. Filtration and chemicals

Static systems often require the use of filters and chemicals to achieve compliance. In a bilge water study conducted in 2011 by the U.S. EPA, Canadian operator Seaway Marine Transport stated that low-cost bilge separators, especially separator/filter combinations, may work but are more sensitive to changing bilge water composition and require large quantities of consumables and higher maintenance.

Static coalescer-type separators are commonplace, largely due to the low capital costs used to promote this equipment. However, the use of these separators is resulting in an increased number of fines and prison sentences as seafarers unknowingly discharge oily waste water in the false belief that these systems clean bilge water according to the regulatory limits. They do not.

Static coalescer-type separators have proven ineffective in rough seas due to poor settling thereby leaving a large amount of the oily waste in treated water. As a result, adsorption filters and chemicals are required, which increases operation, maintenance and tank cleaning costs.

Typically, a static system requires two main consumables: a coalescing filter element and an advanced granular media, the efficacy of which is wholly dependent on the bilge water content.

In response to the revisions adopted in MEPC.107(49) governing emulsion removal, all manufacturers of coalescer-type systems introduced an active filtration stage to the treatment process. This worked well in land-based testing environments but proved incapable of handling the various emulsions found in bilge water under actual operating conditions. The addition of chemical additives was therefore required.

Another issue is that these systems require the use of original equipment manufacturers components, such as certified OEM filter elements, to ensure proper function. However, due to the increasing costs of filtration technologies, there has been a proliferation of cheaper, non-OEM active filters, which are not certified for use and do not provide the same filtering efficiency and protection as OEM filters.

The oleophilic plates and carbon filters in these systems are also subject to fouling and therefore require frequent replacement, further increasing operating costs. What's more, ship owners must also factor in the costs for increased maintenance and cleaning, which is more time consuming than comparable technologies and increases total cost of ownership.

4.2. Test protocols

The treatment of chemical emulsions is a major problem. Although emulsion tests are part of the new IMO test protocols, the test fluids do not represent the complex emulsion mixtures that form in ship bilge wells.

A 2011 study on the efficacy of different oily waste water treatment technologies conducted by the U.S. EPA substantiates this claim. The study concluded that some technologies

"appear to perform better than others at sea" and reported shortcomings in laboratory certification tests for oily waste water treatment systems.

The report stated: "Certain treatment technologies require excessive operator attention and/or maintenance to function properly, or generate excessive quantities of oily residuals requiring handling and disposal."

Yet while Resolution MEPC.107(49) that took effect in 2005 and amended the 1993 Resolution MEPC.60(33) provides guidance on the use of oily water separators and oil content monitoring prior to discharge into the sea, the aforementioned U.S. EPA report also states that the testing and certification processes are "insufficient to replicate actual conditions onboard" and therefore do not reflect real-life conditions on vessels at sea.

The IMO guidelines, which continue to form the basis for type approval, stipulate that "a 15 ppm bilge separator must be able to handle any oily mixtures from the machinery space bilges and be expected to be effective over the complete range of oils which might be carried on board the ship, and deal satisfactorily with oil of very high relative density, or with a mixture presented to it as an emulsion" as well as cleansing agents, emulsifiers, solvents or surfactants used for cleaning purposes that invariably end up in bilge water. Many systems have successfully passed land-based type approval testing, yet fail to perform effectively at sea.

A 2009 article published in Tanker Operator reported that certification tests were too limited to measure the true effectiveness of bilge separator treatment systems under real-life operating conditions on board vessels. The testing issues under scrutiny included: the short test duration; the static environment in which tests are conducted; and, the rate and composition of the test fluids, which many believe to be uncharacteristic of the operational discharges that comprise bilge water.

According to the rules, tests should be performed using three grades of test fluids:

- Test fluid A, which is a marine residual fuel oil in accordance with ISO 8217, type RMG 35 (density at 15°C not less than 980 kg/m³);
- Test fluid B, which is a marine distillate fuel oil in accordance with ISO 8217, type DMA (density at 15°C not less than 830 kg/m³); and,
- Test fluid C, which is a mixture of an oil-in-fresh water emulsion, in the ratio whereby 1 kg of the mixture consists of:
 - 947.8 g of fresh water
 - 25.0 g of test fluid A
 - 25.0 g of test fluid B
 - 0.5 g of surfactants (sodium dodecylbenzene sulfonic acid in dry form)
 - 1.7 g of iron oxides (black ferrosferric oxides or Fe₃O₄), with a particle size distribution of which 90% is less than 10 microns in size and the remainder has a maximum particle size of 100 microns.

Test fluid C is contentious because it contains only one emulsion when in reality there can be 15 or more different types of chemicals in the bilge water mixture. According to the article, the duration of the test also failed to account for system capacity beyond the test period. This highlighted the fact that "tests can be passed using simple filters that, in actual service, would be incapable of maintaining performance over longer time periods".

Additionally, the test protocols fail to replicate the pitching and rolling motions encountered at sea and therefore do not provide an adequate test regime for gravity-based systems.

"During fluid C testing, the separator treats the specified emulsion fluid for just 2.5 hours, but fluid C is not as complex as those fluids found in a ship's bilge. What's more ships do not operate for just a few hours, they're operating for weeks on end," says Magnus Lagerfors, Application Manager, Marine & Diesel Equipment, Alfa Laval. "This is the major difference between static coalescers and dynamic high-speed separators. High-speed separators can continue working indefinitely."

The EPA report and others like it appear to substantiate claims that the failure of certification tests has led and continues to lead to the approval of bilge water treatment

systems that are not able to treat ship bilge water to meet mandatory legislative requirements.

4.3. Oil content monitoring

Monitoring oil content is another area that offers opportunities where real improvements can be made. Verification of the performance of an oily waste water treatment system is important; an oil content monitor or bilge alarm is therefore a critical component of any bilge water treatment system.

When mandatory ppm levels are not maintained, the oil content monitor must initiate an automatic stop to prevent the overboard discharge of oily mixtures. Automatic stop is initiated by a valve arrangement installed in the effluent outlet line of the bilge separator. This automatically diverts the effluent mixture back to ship bilge wells or bilge tanks when the oil content of the effluent exceeds 15 ppm (or 5 ppm in some waters).

Given the harsh environment of a ship engine room, a bilge alarm must be robust, corrosion-resistant, suitable for shipboard use, and compatible with the liquids to be monitored. As such, bilge level switches and bilge alarms must be able to withstand harsh conditions, yet provide immediate and reliable operation and alert the crew upon detection of leakage or flooding.

However, some systems are not as effective as others. Some technologies require continuous maintenance and cleaning to prevent malfunction and spurious readings due to interferences with turbidity. Canada's 5 ppm standards for oil-in-water content can also prove challenging for some bilge alarms.

Alfa Laval's Magnus Lagerfors states: "Oil detection equipment not only measures oil droplets but, in some instances, they have been known to measure other microparticles in the bilge water. This means that some chemicals in the bilge are being measured as oil, which skews the readings. It is therefore important to follow guidance such as the IMO Integrated Bilge Water Management plan."

4.4. Whistleblowing and lack of training

Those who report any illegal wrongdoings help hold those who knowingly violate the law accountable for their actions. However, some shipping companies question whether whistleblowers are motivated by a sense of moral obligation or by opportunism due to the financial rewards offered.

In a 2012 article posted on the Center for Public Integrity website, the investigative report and editor Ronnie Greene writes: "Whistleblowers help bring these cases to light, handing to inspectors the scrawled notes or cell phone photos capturing illegal dumping and homemade diversion pipes hidden on board. Yet some defense lawyers for shipping companies have questioned the government's use of whistleblowers, contending that a quest for cash could distort a company's true environmental record. Ultimately, though, the evidence from crews has factored in several cases."

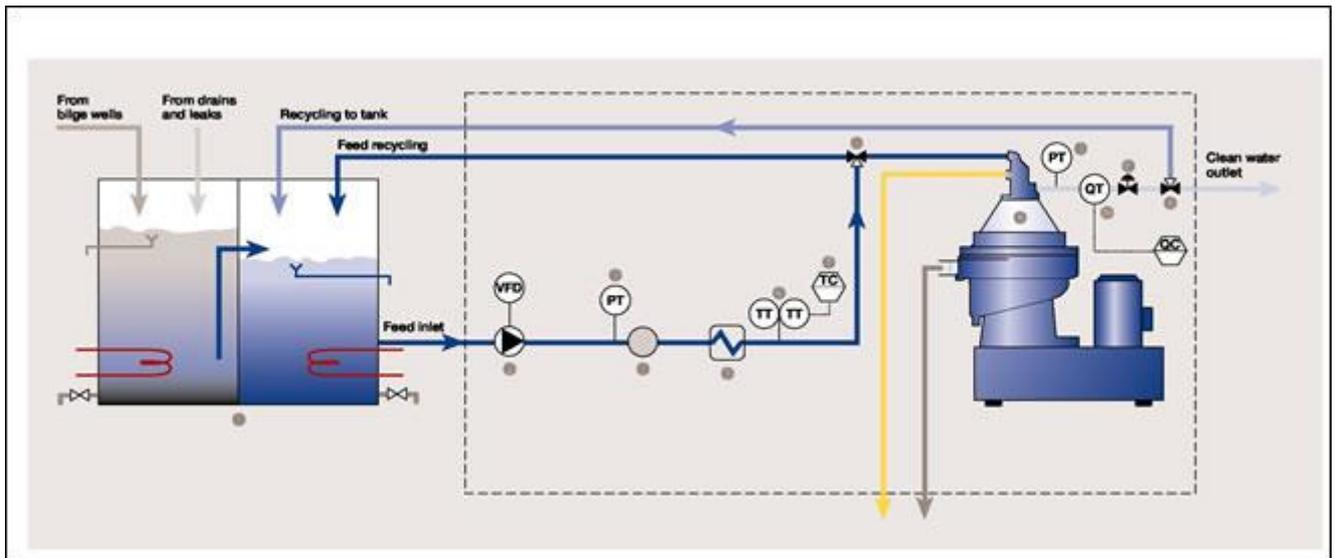
A 2011 article in a shipping magazine reported that the second engineer who provided evidence of deliberate oil pollution to U.S. authorities received 50% of the large fine paid by the owner. Another article reported that crew members found guilty of deliberate pollution on a different vessel each pocketed more than \$400,000 for informing the authorities.

While many question the use of whistleblowers to uncover oil pollution violations, others suggest that the "majority of ship owners want to be compliant and they pay a lot of money to set up these compliance programs and procedures." One ship owner representative is reported to have said, "Some whistle blower who decides he wants to make some money can thwart all those efforts (by the ship owner)... They don't report it to the owner, because they know if they wait until they come to the U.S. and they have pictures of some alleged illegal act, they are going to get a reward."

While such activities are morally questionable, it brings into sharp focus the extent of the problem and the fiscal burden under which ship owners must operate. Certainly no oily water separator will perform perfectly under all circumstances although there are systems and technologies that are more effective than others.

To ensure bilge water treatment systems deliver optimal performance, it is imperative that seafarers responsible for operating and maintaining these systems receive proper training. Many, however, do not fully understand the composition of bilge water, the regulations governing treatment, or indeed how to comply with them.

We shall now consider the optimum solution.



5. The safe solution

Cleaning bilge water poses distinct fiscal, criminal and environmental challenges. Not only does the composition and flow of bilge water change, making continuous and efficient treatment difficult, but treatment on board also presents operational constraints.

Treatment methods must meet individual ship requirements and demands for safety, reliability, compactness, automation, low maintenance and the ability to withstand rough weather conditions.

These requirements must be met without reducing the performance of the treatment system. Centrifugal separation has been used for decades on board vessels due to the technology's superior efficiency in cleaning fluids. Engine room crews are also familiar with the operation and maintenance of centrifugal separation systems. High-speed centrifugal separation is not only the most efficient way to treat bilge water, but it also provides the lowest possible operating cost of all systems currently on the market.

Alfa Laval PureBilge is by far the most effective system available today and can effectively eliminate problems associated with the use of the magic pipe. There are, of course, comparable highspeed oily water separators with more or less the same price tag as PureBilge. However, these highspeed coalescers are unable to deliver the same performance as PureBilge when operating under real-life conditions.

Unlike other dynamic systems, Alfa Laval PureBilge uses heat to break down emulsions to well below the mandatory requirements. PureBilge was the first type approved system to deliver clean water with verified 0–5 ppm oil-in-water content under real-life conditions and at certified flow rates of up to 5000l/h – without the use of costly chemicals, adsorption filter or membranes. What's more, PureBilge does not require large bilge water holding tanks thereby increasing payload capacity. In addition, its performance is unaffected by sea heave, oil shocks or the presence of high solids.

How is it possible then for PureBilge to handle emulsions without the use of chemicals, filters or membranes, where so many other systems fail? The patented Alfa Laval XLrator inlet device is the key.

6. The Alfa Laval XLrator

The PureBilge water treatment system comprises four main functions: forwarding/pumping; oily water pre-treatment; centrifugal separation; and, process control and monitoring.

A positive displacement pump with a variable frequency drive transfers oily water from a settling tank to the pre-treatment stage. In the pre-treatment stage, the bilge water is fed through a basket strainer that traps large particles from the fluid. The fluid then passes through a heat exchanger, which raises the fluid temperature to between 60 °C and 70 °C. When all process conditions (feed temperature, pressure and separator speed) have been satisfied, the oily water enters the separation stage. If conditions are not met, fluid is re-circulated to the bilge water settling tank.

During the separation stage, the fluid enters a high-speed centrifugal separator. Oil and emulsions separated from the bilge water are continuously discharged and directed to a sludge or waste-oil collecting tank.

Solids are discharged intermittently through the self-cleaning mechanism of the centrifuge. Treated water is also continuously discharged. An oil-in-water monitor measures the oil content in the treated bilge water in full compliance with IMO Resolution MEPC.107(49).

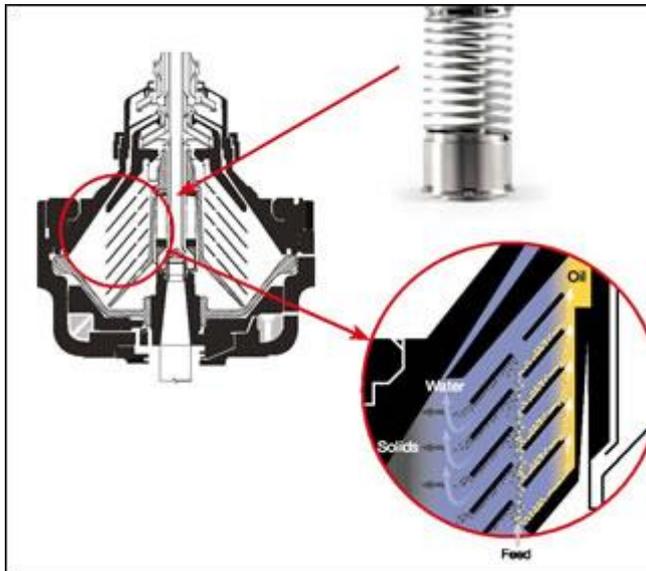
When the oil content is below a pre-set value (15 ppm or lower), the treated water can be directed either to a holding tank for discharge overboard at the ship operator's convenience, or pumped directly overboard. If the oil content is above the pre-set value, the water is re-circulated to the bilge water settling tank.

The revolutionary design of PureBilge incorporates the Alfa Laval BWPX 307 high-speed centrifuge and the patented Alfa Laval XLrator inlet device. The XLrator gently accelerates the bilge water into the separator bowl to improve separation efficiency by preventing the splitting of oil drops and the further formation of emulsions.

The disc-stack and bowl arrangement provides the maximum surface area and features distribution holes and an optimized caulk configuration to enhance separation efficiency further. The design provides stable, continuous operation to ensure proper handling of oil shocks that

generally bring static cleaning systems to a standstill. The high centrifugal force of 6000 G within the PureBilge separator bowl induces coalescence and flocculation, which contribute to the breakdown of emulsions.

Before deciding to purchase the PureBilge system, a customer who was well aware of the limitations of current legislation requested sea trials of the system. A diaphragm pump



thoroughly mixed a bilge cocktail for four hours to emulsify its contents, thereby compounding the separation problem.

The mixture contained:

- 1 m³ of sea water
- 1 litre of compressor oil
- 10 litres of diesel oil
- 10 litres of heavy fuel oil (HFO)
- 1 litre of hydraulic oil
- 1 litre of corrosion inhibitor
- 1 litre of carbon remover
- 1 litre of solvent-based oil cleaner
- 20 litres of mud



- 5 litres of rust
- 50 litres of cooler condensate
- 5 litres of soot

During the trials, PureBilge performance exceeded customer expectations. The average oil-in-water content in treated water was 7 ppm, well below the 15 ppm discharge requirements.

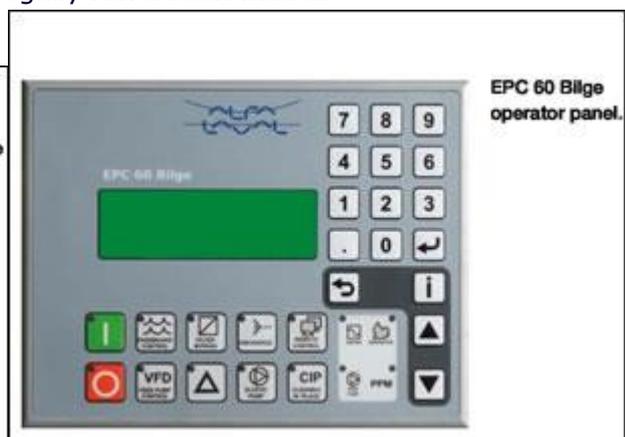
7. The Alfa Laval PureBilge BlueBox

Alfa Laval has developed the PureBilge BlueBox Data Recorder, a fully automatic, oil content monitoring system to provide ship owners and engineering teams with a safe and reliable system to record all oil discharge operations. This records operations to ensure that they have been carried out in accordance with the regulations.

Now integral to the PureBilge concept, the PureBilge BlueBox Data Recorder and EPC 60 Bilge process controller are designed to prevent tampering with the system. The system records oil ppm levels, GPS position, separator operation, full alarm log, discharge valve position and discharge flow data. If the flow meter records a flow rate when the discharge valve is in the recirculation position, for instance, the PureBilge BlueBox system will set off an alarm and automatically shut down while recording all data.

Clad in a rugged housing, the PureBilge BlueBox is designed to be opened by authorized personnel. It features a coded magnetic limit switch that causes an alarm to sound and the overboard valve to go into recirculation mode should any attempt be made to pry open the BlueBox.

Recorded data includes the start and stop time of each discharge as well as the oil content level of each discharge cycle. All data is logged, encrypted and stored for 18 months, providing documentation that discharge operations have been carried out according to regulations or that attempts to discharge illegally have been made.



8. Conclusion

The world's oceans are not the dumping grounds for oily waste water from maritime vessels. Strict legislation and enforcement make it clear that any violation, whether due to gross negligence or willful misconduct, will not be tolerated. Diesel power plant owners and operators must also comply with bilge water regulations.

However, despite hefty fines and, in some cases, imprisonment, ship owners, ship operators and seafarers continue to discharge oily waste water that does not meet IMO pollution prevention regulations.

This is a clear indication that something is not working as it should. Alfa Laval believes that the problem is complex, resulting from a combination of ineffective regulations, test protocols, technologies and seafarer training.

Although MEPC.60(33) has been updated with M EPC. 107(49), the problem remains that many systems with active filtration are designed to pass the test protocol in a land-based environment while, in reality, these systems have limited capabilities under real-life operating conditions.

Static systems are common due to low initial capital investment costs, which do not take into account higher installation, operation and maintenance costs. Their continued use is significantly increasing the number and amount of fines as well as lengthening prison sentences for those who violate the law. This points to the inadequacy of the test protocols, which do not reflect real-life conditions.

Until such time that more effective regulatory mechanisms are in place – something that Alfa Laval will continue to lobby for – ship owners can mitigate the financial and environmental risks associated with oily waste water management through the purchase and installation of high-speed centrifugal separators. High-speed centrifugal separators may be more expensive at the outset compared to static, gravity based technologies. However, they have been proven to exceed the mandatory requirements for bilge water treatment at sea and to be more cost effective to operate over the long term due to lower operating costs. What's more, many high-speed systems are designed to prevent tampering, thereby eliminating the possibility to bypass the system.

Together with its industry colleagues and technological partners, Alfa Laval is advocating changes to the IMO testing and type approval processes for bilge water treatment systems to better reflect operational realities. "We want to make sure that owners remain compliant and keep our marine environments clean. The lower the environmental impact, the better it is for everybody," says Niclas Dahl, Vice President, Marine Separation & Heat Transfer Business Unit, Alfa Laval. "However, current regulations are not helping to ensure that the shipping industry does not contribute to ocean pollution, and neither are some of the technologies in use today."

Alfa Laval PureBilge with its integrated oil content monitor has been proven to clean effectively and to exceed regulatory requirements. It is operating successfully on board some 40–50% of the world's tanker fleet. This is due, in part, to the value assigned to the environmental and sustainability credentials of tanker owners and charterers. Although other technologies cost marginally less, Alfa Laval PureBilge with its reputation for unparalleled performance is gaining popularity among ship owners. To date the number of vessels operating with PureBilge is close to 1,000.

"Centrifugation has been a hallmark of our company for over a century. Alfa Laval PureBilge uses centrifugal force to counteract vessel pitch and roll, thereby overcoming the issues associated with static bilge water treatment systems," Dahl continues. "PureBilge is truly the difference between noncompliance and compliance."

Inséré 20/05/21 NIEUWS NOUVELLES Enlevé 20/06/21

Nieuwe Belgica wordt varend labo voor



De nieuwe Belgica is veel groter dan de oude.

STEPHANIE DE SMEDT

Deze zomer komt het nieuwe onderzoeksschip Belgica van de scheepswerf in Spanje naar ons land. Het state-of-the-art-zeelaboratorium wordt het paradepaardje van de Belgische mariene wetenschap. En voor het eerst mogen ook bedrijven mee aan boord. 'We kunnen samen onderzoek doen rond windmolens, diepzeemijnbouw en robots.'

Na 37 jaar krijgt België een nieuw onderzoeksschip. De oude Belgica gaat op de marinebasis in Zeebrugge aan de ketting en wordt deze zomer vervangen door een nieuwe Belgica. Dat schip is groter, beschikt over de modernste apparatuur en zal 300 dagen per jaar op zee doorbrengen in plaats 200 dagen.

'Met meer labo's en meer dagen op zee winnen we twee keer capaciteit', zegt Belgica-coördinator Lieven Naudts van het Koninklijk Belgisch Instituut voor Natuurwetenschappen (KBIN), dat het schip beheert. 'Dat is belangrijk, want zo kunnen we ook scheepstijd aanbieden aan de industrie.' Tot nu was dat niet mogelijk. 'Sowieso moeten we enkele vaste opdrachten uitvoeren. We monitoren onder meer de waterkwaliteit in de Belgische Noordzee, het zeeleven en de windparken. Daarnaast zijn er aanvragen van wetenschappers voor onderzoeksprojecten. We proberen dat allemaal in te plannen, met campagnes van maandag tot vrijdag waarbij aan boord 24 uur op 24 wordt gewerkt. Maar die agenda zit dus propvol.'

Dat er ruimte komt om het schip ook open te stellen voor bedrijven is een dubbele win. Naudts: 'Uiteraard levert het extra inkomsten op. Die kunnen we gebruiken, want het nieuwe schip brengt extra kosten mee. Vroeger konden we een beroep doen op Defensie voor de bemanning. Maar omdat het leger meer op zijn kerntaken focust, moeten we bij de nieuwe Belgica met een privé-uitbater werken. Daar moeten we btw op betalen, wat al snel 600.000 euro per jaar scheelt.'

'Nog belangrijker is dat het openstellen van het schip meer interactie moet opleveren tussen de wetenschap en de industrie. Als we vooruit willen met de blauwe economie moeten die hand in hand gaan. Zo'n schip kan een belangrijke rol spelen, omdat het mensen samenbrengt en een dynamiek creëert. Net zoals de oude Belgica heeft gedaan voor de Belgische onderzoeksgemeenschap.'

Vroeger moesten we de bloei van algen meten door een staal te gaan nemen. Nu doen we dat door de kleur van het water in de gaten te houden via satellieten.

PATRICK

ROOSE

OPERATIONEEL DIRECTEUR VAN HET KONINKLIJK INSTITUUT VOOR NATUURWETENSCHAPPEN

De

Gerlache

België heeft een lange traditie in mariene wetenschap. In 1843 pootte de wetenschapper Pierre-Joseph Van Beneden het allereerste marien onderzoeksstation neer in Oostende: het Laboratoire des Dunes. De Belgische marinier en ontdekkingsreiziger Adrien de Gerlache leidde in 1897-1899 de eerste wetenschappelijke expeditie naar de Zuidpool, met een omgebouwd walvisschip dat hij de naam Belgica gaf.

'De Leuvense professor Gustave Gilson was een van de eersten om het zeeleven in kaart te brengen. Zijn collecties gebruiken we nog. Hij heeft er altijd op gehamerd dat de wetenschap ook een eigen onderzoeksschip moest hebben. Hij heeft het zelf niet meer kunnen meemaken, maar in 1984 is er dan de Belgica gekomen.'

'Vrij uniek is dat we er altijd voor hebben gekozen een schip te hebben dat voor alle soorten onderzoek kan dienen', zegt Patrick Roose, de operationeel directeur bij het KBIN. 'De meeste grote landen hebben een apart schip voor visserijonderzoek, voor seismisch onderzoek, noem maar op. Onze aanpak is een geweldige troef gebleken. Mensen van verschillende disciplines gingen op maandag aan boord en brachten een hele week samen door. Je leert elkaar kennen en helpt elkaar: als iemand zeeziek wordt, springen anderen in om experimenten over te nemen. Tussen de staalnames praat je en drink je samen een pintje. Zo ontstaan ideeën voor nieuw onderzoek, voor nieuwe projecten.'

'De Belgica is nooit een alcoholvrij schip geweest', pikt Naudts in. 'In de mess hangt nog een rekje met Jupiler-glazen. Op het nieuwe schip wordt dat wel anders. Het mag niet meer. Bij de Amerikanen en op veel andere schepen is dat al lang zo. Het is niet hetzelfde, maar de tijden veranderen.'

'Er is een gemeenschap gecreëerd', vervolgt Roose. 'Mensen zijn hier als student geweest. Iedereen kent elkaar, van onderzoekers tot technici. Dat is misschien de belangrijkste verwezenlijking van het schip.'

Giftige verf

Die gemeenschap ligt mee aan de basis van de sterke reputatie die België heeft als het over de zee gaat. 'In de wereld is geen enkel stuk nationale zee zo goed gekend is als onze Noordzee', zegt Naudts. 'Omdat het een kleine oppervlakte is, natuurlijk. Maar ook omdat we onze zee gestructureerd en wetenschappelijk opvolgen. Daardoor hebben we internationaal al vaak een trekkersrol gespeeld.'

'Om een voorbeeld te geven: we liggen aan de basis van het totale verbod op het gebruik van TBT-houdende verven voor schepen. Die verven werden gebruikt om de romp te beschermen tegen de aangroei van algen en andere organismen. Als de romp zwaar begroeid is, wordt het schip trager en verbruikt het meer brandstof. TBT-verf was tot vrij recent erg populair, maar ze bevat gif dat zeer kwalijk is voor het mariene milieu. Wil je ze verbieden, dan moet je kunnen bewijzen dat er een verband is tussen TBT en de problemen bij oesters en mosselen. Dat is nooit makkelijk. Maar omdat wij zo veel data hebben om te vergelijken kunnen wij dat wel onderbouwen.'

Puzzelwerk

Het wemelt op de Noordzee. Alles in die beperkte ruimte inpassen, vraagt puzzelwerk en creativiteit. Lees in ons [interactieve artikel](#) hoe dat lukt.

'Een ander voorbeeld is de offshore-industrie. We waren bij de eerste om windmolens op zee te bouwen, maar vooral ook bij de eerste om die installaties wetenschappelijk op te volgen. Dat is belangrijk, want je wil die windparken bouwen met zo weinig mogelijk impact op het milieu. Zo hebben we vastgesteld dat het heien van de palen voor windmolens in

de Noordzee bruinvissen doet schrikken en wegtrekken. Aannemers zijn dan nieuwe technieken gaan gebruiken om die hinder te beperken, en die kennis wordt internationaal opgepikt. Ze komen vanuit Frankrijk en de Verenigde Staten hier aankloppen.'

Richting Groenland

België bokst als kleine zeenatie boven zijn gewicht. Maar dat kan nog beter, geloven Naudts en Roose. 'Jaren geleden hebben we een overlegplatform opgericht: The North Sea Think Thank, met daarin bedrijven, overheden, burgers en wetenschappelijke instellingen. Dat heeft al de nodige contacten opgeleverd en veel openheid gecreëerd, maar onderzoek en industrie zitten vaak nog in hun eigen wereldje. Met de nieuwe Belgica willen we dat doorbreken en die samenwerking nog meer stimuleren', zegt Roose.

Schermvullende weergave

'De interesse is er', zegt Naudts. 'Vanaf het moment dat we plannen voor het nieuwe schip hadden, hebben we met verschillende bedrijven samengezeten. Denk aan namen als DEME. Ze hebben steunbrieven gestuurd toen we de aanvraag deden om het schip te laten bouwen.'

De volgende stap is dat concreet maken. 'Tegen eind dit jaar willen we een businessplan op tafel hebben. De bedoeling is over twee jaar op kruissnelheid te zijn.'

Er wordt gekeken naar Belgische, maar ook Europese bedrijven. Roose: 'Alles wat te maken heeft met de blauwe economie. Voor onze kust komt er een volledig nieuwe zone met windmolens, we zullen daar met de Belgica zeker onderzoek voor doen. Het schip is daarvoor perfect uitgerust: er is een dynamic positioning system aan boord waarmee je bijna tot op de meter op dezelfde positie kan blijven. En omdat we elektrisch varen, is het ook een stil schip, wat nodig is als je het onderwaterleven wil onderzoeken.'

De Zeeconomie

De Noordzee als nieuw wingewest

De blauwe economie is een onbekende sterkhoudster in Vlaanderen. In onze elfde provincie liggen oplossingen voor de klimaat-, de energie- en de grondstoffenproblematiek. De Tijd gaat op zoek naar de nieuwe inzichten en ontwikkelingen op de Noordzee.

In Sabato vindt u een interview met Alexandra Cousteau, de kleindochter van Jacques. 'Maar we kijken niet alleen naar de Noordzee. Met het nieuwe schip kunnen we ook onderzoek tot 5.000 meter diep doen. Dat is belangrijk voor onderzoek naar diepzeemijnbouw, waar veel rond beweegt. Dankzij een lichte ijswering kunnen we ook naar het noorden varen, richting Groenland, waar veel te doen is rond klimaatonderzoek. De komende jaren gaat veel gebeuren rond het arctisch gebied. Als die zone ijsvrij wordt, gaan ze daar meer varen en ontginnen. De vraag is dan natuurlijk wat de milieu-impact zal zijn. Dat kunnen we mee onderzoeken.'

Klaar voor robots

De krachtenbundeling is ook een kwestie van de middelen beter in te zetten. 'De jongste tijd wordt veel meer gewerkt met technologie in combinatie met het schip. Het zorgt ervoor dat we veel meer kunnen doen', zegt Roose.

'Met een schip vaar je naar één punt op één moment. Dat is duur: reken bijna 20.000 euro voor een dag varen. En het is een momentopname. Als je dat kan combineren met automatische technologie die een veel groter gebied afdekt en veel meer meet, maak je ineens een grote sprong. Vroeger moesten we de bloei van algen meten door een staal te gaan nemen en te kijken hoeveel er in het water zaten. Nu doen we dat door de kleur van het water in de gaten te houden via satellieten.'

'Alle partijen op zee, of het nu om wetenschappers, bedrijven of het leger gaat, gebruiken diezelfde data. We gebruiken dezelfde meettoestellen, dezelfde technieken. We kijken allemaal naar de zeebodem met akoestische systemen. Dan is het toch logischer om samen te werken? Met Defensie hebben we onderzoek gedaan naar het detecteren van mijnen op de zeebodem. Die worden constant begraven onder zand en weer blootgelegd. Via precieze modellen kunnen we bepalen wanneer het beste moment is om ze te detecteren.'

'Omgekeerd beschikken bedrijven vaak over meer technische middelen', voegt Naudts toe. 'Zij hebben vaak al robots. Als we die ook voor wetenschappelijk onderzoek zouden gebruiken, levert dat een enorme winst op.'

Luister naar het geluid van de Noordzee

De Sloveense kunstenares Robertina Šebjanič reist sinds 2016 de wereld rond om onderwatergeluiden op te nemen. Ze brengt de impact van de toenemende scheepvaart en andere menselijke activiteiten op zee in kaart. Beluister haar soundscape van de Noordzee in de Venetiaanse Gaanderijen in Oostende.

Aquatocene is van 8 tot en met 31 mei gratis te bezoeken tijdens het weekend en op feest- en bruggedagen, tussen 12 en 18 uur in de Venetiaanse Gaanderijen in Oostende. De installatie is een samenwerking van Gluon en De Tijd.

De nieuwe Belgica - prijskaartje 54,5 miljoen euro - is erop voorzien. 'Het schip is groot genoeg om te werken met robots, autonome en onbemande tuigen en grote installaties om boringen te doen in de bodem', zegt Naudts. 'Met zijn 70 meter is het ook 20 meter langer dan de vorige Belgica. Op het achterdek kunnen we tot 105 ton plaatsen. We hebben rekening gehouden met alles wat de wetenschappers nodig hebben voor het onderzoek van de toekomst. Het is de bedoeling met het nieuwe schip tot 2050 door te gaan.'

Omgekeerde pelgrimstocht

Wanneer de nieuwe Belgica in ons land arriveert, is nog niet duidelijk. 'De zoektocht naar een privé-uitbater loopt. Die moet tegen 1 juli rond zijn', zegt Naudts.

Daarna kan het schip vanuit de scheepswerf Freire Shipyard in Vigo vertrekken. De Spaanse kuststad ligt net ten zuiden van Santiago de Compostela, dus in zekere zin wordt het een omgekeerde pelgrimstocht. Richting peterstad Gent, waar het schip in september feestelijk wordt ingehuldigd. Gent heeft sowieso een band met het schip: de Universiteit Gent is een belangrijke wetenschappelijke partner van de Belgica en het Gentse bedrijf ABC, in handen van de familie Froidbise, bouwde de drie scheepsmotoren. Prinses Elisabeth is meter.

Maar eerst nog afscheid nemen van de oude Belgica. Die ligt sinds april voor anker in Zeebrugge. Op slot, wachtend op de beslissing wat ermee moet gebeuren. Naudts staat op het dek. 'Dit schip was eigenlijk gebouwd voor 25 jaar. De eerste haalbaarheidsstudies voor een vervanger dateren al van 15 jaar geleden. Maar hoe gaat dat in de politiek? We hebben een paar jaar geen regering gehad, en dan slepen de dingen al eens aan.'

'Het schip is intussen helemaal op', zegt Roose. 'We hebben de apparatuur altijd up-to-date gehouden, maar het onderhoud kostte miljoenen. Een paar jaar geleden is door een lek 100 kubieke meter zeewater in de machinekamer beland. Puur door verborgen corrosie. Het comfort was ook niet meer aangepast: te kleine kajuiten, gemeenschappelijke douches, krappe labo's.' Met bijna 1 miljoen kilometer op de teller is de houdbaarheidsdatum ruimschoots overschreden. 'Wat blijft, is nostalgie. En veel herinneringen.'

Inséré 21/05/21 NIEUWS NOUVELLES Enlevé 21/06/21

EU project to trial greener, more efficient rudder

by Naida Hakirevic



Scotland-based University of Strathclyde has designed a greener, more efficient rudder system that will be demonstrated as part of a €6 million EU-funded research project.

The GATERS project, led by the abovementioned university under the Horizon 2020 Fund, will see the 'gate rudder' – a novel propulsion and steering system – retrofitted to a commercial vessel as part of a trial. Unlike a traditional rudder which sits behind a ship's propellers to steer the vessel, the U-shaped gate rudder – essentially two separate rudders – sits astride the propeller which, as a result, acts like a nozzle around the propeller and generates additional thrust.

As explained, both rudders can be independently controlled to provide steering better as well as helping vessels move sideways – called crabbing – when docking, for example.

In early trials, the gate rudder has shown a fuel-saving potential of 15% in calm waters, while this can be as high as 30% in rough seas and improved maneuverability, according to the University of Strathclyde.

Reduced emissions

The gate rudder is also said to be quieter than a traditional rudder system, reduces hull wake, and can help to protect the propeller from damage – particularly beneficial in sensitive environments such as the Arctic.

"GATERS demonstrates significantly reduced emissions from ships particularly within coastal and port areas, challenging and even exceeding the current and future legislative requirements of the International Marine Organisation and local regulations for

emissions," Professor **Mehmet Atlar**, who is the project coordinator from Department of Naval Architecture and Marine Engineering (NAOME) at Strathclyde, said.

"As a propulsor-based solution, the gate rudder offers a significant amount of power-saving that cannot be achieved by any other single energy-saving device which is currently available in the market.

"An important advantage of the gate rudder system is highly-effective manoeuvrability within coastal and port areas as well as navigating more efficient in waves during oceangoing operations."

"In addition, the gate rudder system is simple, generic and flexible that can be installed on new-built ships or retrofitted to existing ships, as well as integrated easily with other fuel-saving and emission reduction technologies. Based on these features, the gate rudder design presents a great prospect of replacing conventional design."

The project brings together 18 technology experts and prime stakeholders, including the patent holder, Dr Noriyuki Sasaki who is a Visiting Professor in NAOME, to demonstrate and exploit the benefits of this system.

The researchers will use data gathered from the sea trials to demonstrate for the first time whether the system could be applied to an existing 90-metre coastal cargo ship as a "retrofit" and to explore its applications for other oceangoing vessel types and sizes, hence, ultimately become the next generation propulsion and steering system for waterborne transport.

The concept of the gate rudder has been licenced to the Finnish propulsion manufacturer Wartsila.

Inséré 23/05/21 DOSSIER Enlevé 23/06/21

Woorden uit de zeemanskist Gaten in een schip

Oppermeester J.B. DREESEN

Het is ongelooflijk hoeveel gaten er in een schip zitten en toch blijft het drijven.

De minst gevaarlijk zijn de SPAARGATEN. Dit zijn ronde of ovale gaten die in de stalen platen van scheepsconstructies worden gesneden om gewicht te besparen. Voor die reden worden ze ook wel eens VERLICHTINGSGATEN genoemd.

PATRIJSPOORTEN, soms kortweg POORTEN genoemd, komen op de moderne schepen bijna niet meer voor. Hun oorspronkelijke functie was licht en lucht te brengen in de verblijven van het benedenschip. Deze functie wordt in de tegenwoordige tijd overgenomen door de, meestal degelijke, elektrische verlichting en de, niet altijd zeer aangename, LUCHTBEHANDELING (airconditioning). De in de scheepshuid aangebrachte patrijspooten brachten echter een tamelijk groot risico mee, voornamelijk als ze laag op de waterlijn lagen. Hun constructie in brons was zeer verzorgd en alhoewel voorzien van een onbreekbaar glas waren ze bijkomend uitgerust met een BLINDEERKLEP. Met een stelsel van RUBBERBANDEN en KNEVELS konden ze waterdicht gemaakt worden. Onder de patrijspoot hing een LEKBAKJE waarin het condensatievocht kon lopen dat zich op het glas vormde. In warme streken kon men van binnenuit WINDHAPPERS in de poorten aanbrengen om de circulatie van de frisse lucht in het schip te verbeteren.

Wat onze patrijspoot met een patrijs te maken heeft is op het eerste gezicht niet zo duidelijk. De oorsprong van het woord ligt echter in de middeleeuwen, bij het in gebruik komen van de KOLDER-STOK. Hiermee werd het mogelijk de roerganger een paar dekken hoger op te stellen (zie Neptunus nr 4 van 1969, Woorden uit de Zeemanskist « KOLDERSTOK »). Wegens de gelijkenis met het achterste van een patrijs werd het gat voor

de Kolderstok een PATRIJSGAT genoemd. In navolging hiervan ontstond PATRIJSPOORT. Patrijspoorten zijn momenteel « in » bij de scheepsantikwariaten. Voor een exemplaar met enige allure wordt grif, dit alnaargelang grootte, gewicht en constructie, tussen de 10 à 20.000 fr. betaald.

Het HENNEGAT is op onze tegenwoordige schepen een ronde opening in de scheepshuid waardoor de ROERKONING steekt. Teneinde de roerkoning waterdicht door het hek te voeren, wordt de HENNE-GATSKOKER ingebouwd. Om het opslaan van het water in de koker te voorkomen wordt rond het Hennegat een hoefijzervormige plaat, de SCHAAMPLAAT, met bronzen tapbouten aan de buitenkant van de huid vastgezet.

Het HENNEGAT kreeg zijn naam van de driehoekige opening waardoor op de vroegere houten binnenschepen de helmstok binnenboord kwam. De opening werd gevormd door de hekbalk, als basis, en de achterste randen van de opstaande zijden (het BOEISEL) waarvan de bovenkanten elkaar boven de achtersteven raakten. Minder gevaarlijk voor de Waterdichtheid van een schip zijn de KLUISGATEN. Zij komen aan weerszijden van de steven voor, onder vorm van een buis die vanaf het dek naar de boeg voert. Langs deze kluisgaten loopt de ankerketting aan boord. LANGS DE KLUISGATEN AAN BOORD GEKOMEN wordt gezegd van iemand die, na de verschillende graden te hebben doorlopen, een carrière maakt als officier.

De ankerketting loopt dan verder door de KETTINGKOKERS naar de KETTINGBAK, die dan wel gevaarlijk zijn. Voor een lange reis was het vroeger gebruikelijk de kettingskokers aan dek te dichten met een plankje, voden en cementspecie. Dit was scheepstimmermanswerk en gebeurde onmiddellijk na het zeevast zetten van het anker. Dat het verwaarlozen van deze maatregel zware gevolgen kon hebben merkten we jaren geleden aan boord van een Algerine.

Nadat we uit Dakar vertrokken waren moesten we ettelijke dagen tegen de harde N.O. passaat opwerken waarbij we na zekere tijd opmerkten dat ons schip koplastig werd. De timmerman had gewoon verwaarloosd de kettingkokers dicht te metselen. De « KOPSTEKKER » van 3 dagen had zijn werk gedaan en de kettingbak onder water gezet.

Gevaarlijke gaten zijn de AANZUIG- en AFVOERGATEN die in het onderste deel van de romp gemaakt worden voor de bediening van motoren, machines, toiletten en wasplaatsen. Sommige van deze gaten zijn voor normaal gebruik voorzien van TERUGSLAGKLEPPEN.

Ze zijn echter allen voorzien van KLEPPEN die moeten gesloten worden wanneer de inrichting een tijdlang niet in gebruik is. Al deze kleppen moeten bij elke droogdokbeurt nagezien worden.

Doorheen het ganse schip vindt men WATERDICHTE DOORVOERINGEN die zorgen dat elektrische leidingen, ventilatie, brandblus- en lensleidingen, onderwaterzetinrichtingen, voortstuwing en brandstofleidingen op hun plaats terecht komen. Teneinde langs de dekken toegang te krijgen tot de verblijven, werk- en andere ruimten, zijn een reeks grotere gaten voorzien die naar hun constructie LUIKEN of MANGATEN worden genoemd. De luiken zijn voorzien van LUIKHOOFDEN, dit is een opstaande rand die moet voorkomen dat binnenstromend water te vlug naar een onderliggend compartiment loopt. Gaten in de SCHOTTEN worden net als in de huiskamer DEUREN genoemd. Ze zijn echter waterdicht uitgevoerd.

De aanvoer van verse lucht naar het benedenschip is zeer belangrijk. Veel van de gaten op het bovendek, wel dan niet voorzien van constructies, hebben als functie de lucht op te vangen, en naar beneden te voeren. Alnaargelang de vorm spreekt men van LUCHTKOKERS, LUCHTROOSTERS, PADDESTOELEN of VERLUCHTINGSGATEN.

Een zeldzame luchtkoker boven een ruim wordt een BROEK VAN BERTA genoemd. Dit om de gelijkenis met de broek van een vrouw van zekere omvang (BERTA KRUPP in W.O. I). Voor de verlichting werden vroeger in dekhouten glazen verwerkt die KOEKKOEK of SCHIJNLICHT werden genoemd. Meestal waren ze een bron van veel nattigheid benedendeks, want de waterdichte afsluiting ervan liet veelal te wensen over.

BLAASMONDEN zijn de richt- en regelbare openingen die op gezette afstanden benedendeks op de ventilatieleidingen voorkomen. In het Engels hebben ze de eer eigenaardige naam PUNKAH LOUVRES dat van het HINDUSTANI, PANKAN = WAAIER, (om lucht te geven) stamt.

Iedere open deur of luik in een waterdicht schot of dek betekent, dat er zich een gat in het schip bevindt. Hoewel het schip zonder deuren of luiken onbewoonbaar of onbruikbaar zou zijn, is het toch zo, dat hoe minder gaten er zijn, hoe veiliger de toestand is waarin het schip verkeert. Het is daarom voor de scheepsbeveiligingsdienst van belang te weten, welke deuren en luiken geopend zijn en welke dicht.

Opdat de sluittoestand van het schip wordt aangepast aan de omstandigheden, die een bepaalde graad van veiligheid eisen, heeft men drie SLUITTOESTANDEN ingesteld die aangeduid worden met de laatste letters van het alfabet. Als extra veiligheidsmaatregel treft men op deuren en sluitingen een kleur aan, hetzij rood of blauw.

Bovendien zijn, in verband met het gevaar voor gas, dat voortvloeit uit de ABCD oorlogvoering, verschillende openingen gemerkt met een GASMERK.

Maar hier zitten we op het terrein van onze uitstekend werkende NBCD School te Sint-Kruis en komt men voor nadere details bij hen terecht.

JB. DREESSEN

Inséré 23/05/21 BOEKEN LIVRES BOOKS Enlevé 23/06/21

Bretagne. 30 Years of Splendour

BOEKBESPREKING By : Frank NEYTS

Recently Gbooks international published a remarkable book entitled "Bretagne. 30 Years of Splendour ". Vitor Francisco signed as the author. The book is a wonderful, colourful book stuffed with fantastic, large pictures of Bretagne/Brittany. Images of both the mv 'BRETAGNE', a cruise ferry between Brittany (St Malo) and Britain (Portsmouth), and of Bretagne, the French region the ship is named after, and where the headquarters of her shipping company Brittany Ferries are located. In 2019 the 30th anniversary of the beautiful 'Bretagne' has been celebrated.

In her honour Vitor Francisco has made a jubilee book that in praising words and in captivating photographs pays a ship-lover's tribute. Not only to the 'BRETAGNE', the cruise ferry, but also to Bretagne the coast-region!

Vito Francisco is an English salesman with Portugese roots, who monthly takes the boat across to visit the mainland of Europe for his job. He has sailed in many, many, many cruise ferries in Europe. He knows them all, inside out. And there is one particular that he has fallen in love with completely and that is the mv 'BRETAGNE'. "Bretagne" (ISBN 9 789492 368478) counts 248 pages. It is available as hardbound (retailprice P&P included: BE & NL € 42,00 ; UK £ 38.50. Ordering the book can simply be done by sending an e-mail to info@gbooksinternational.nl (NL & BE customers); to vitor.francisco@talktalk.net (UK-customers). Please provide full postal address, this needed for delivery by parcel-services. This book is real value for money!

Inséré 25/05/21 NIEUWS NOUVELLES Enlevé 25/06/21

Ever Given's Crew May Risk Arrest

The Indian crew of the giant boxship **EVER GIVEN** are no longer stuck in the lower section of the Suez Canal, but they could get stuck in Egypt for a long time, according to the Times of India. It is possible that they may face house arrest or even criminal charges in connection with the vessel's grounding, which closed the canal for six days and disrupted billions of dollars in trade.



"There is a clear danger that the crew will be made scapegoats," an Indian shipping industry source told the outlet. The 25-member crew is in good health but stressed by the experience of the grounding, according to the head of Indian seafarers' union NUSI, Abdulgani Serang. "They are not alone and we will support them whenever required in whatever manner required," Serang said. The Egyptian government's lead investigator, Captain Sayed Sheasha, told Reuters on Wednesday that the Ever Given's master has fully cooperated with the inquiry. The pressure on the investigation into the grounding is high. The chairman of the Suez Canal Authority has estimated the total economic damages from the casualty at about \$1 billion, and affected shipping interests will be looking to recoup their losses via insurance claims and litigation. Ever Given's insurer, Lloyd's of London, is preparing for a "large loss" in the range of \$100 million. The Suez Canal is already back up to full capacity and is running around the clock, but commercial disputes related to the shutdown are expected to last for years. The **EVER GIVEN** herself appears to have been largely spared. A dive inspection on Wednesday revealed a limited amount of damage to her bow, but no other obvious signs of harm, according to the AP.

Precedent for seafarer detention



In Egypt, officers aboard detained vessels have occasionally ended up under a status equivalent to house arrest, sometimes for years, according to the International Transport Workers' Federation. Mohammad Aisha - the chief mate of the seized container feeder

AMAN - has been stuck on board his vessel at an anchorage off Suez since 2017. For four years, an Egyptian court has bound him to the ship as its designated "legal guard," and local authorities have confiscated his passport. He has been alone on board for the last 15 months, except for an occasional swim to shore for food and water, according to the ITF. Aisha is not the only mariner trapped in Egypt by a local court order. The ITF is also attempting to win freedom for the captain of the freighter Kenan Mete. Like Aisha, the master has been designated as his vessel's "legal guard," and he has been forbidden to leave Egypt until the ship's case is resolved or another guardian is appointed.
Source : MAREX

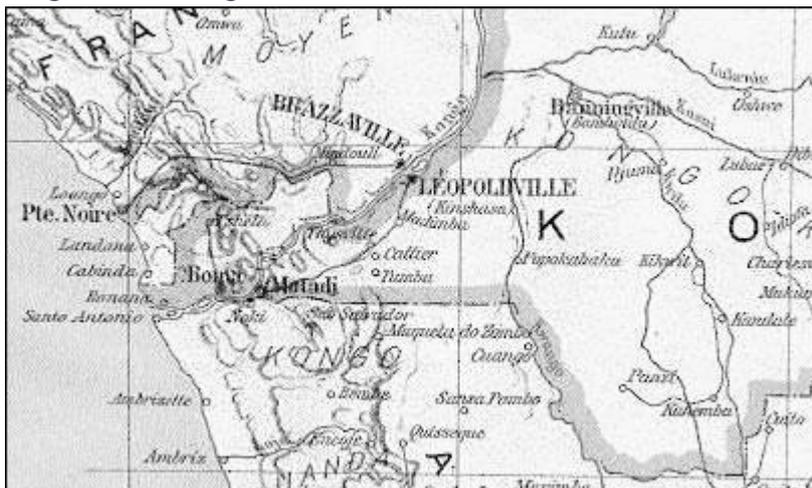
Inséré 27/05/21 HISTORIEK HISTORIQUE Enlevé 27/06/21

(BELGIAN) CONGO RIVER SHIPPING AT THE END 19th & BEGINNING 20th CENTURY

I am currently researching the very early days of river shipping in the Congo basin, when the Belgians introduced their first steam driven vessels.

This is far from a complete history, many sources and books are still to be consulted. Perhaps you can help me with additional information? Do not hesitate to email me if you have any comments or suggestions, please.

It is not entirely correct to claim that the Belgians were the first to introduce steamships on the Zaire river, in fact the first steam powered "boat" was literally carried in by H.M.Stanley's team who was exploring this vast Central African country on behalf of H.M. Leopold II, King of Belgium. On November 24th, 1878 the Belgian King who actually owned Congo (bought it from his personal fortune) decided to organise an exploratory voyage through the Congo basin, starting from the West Coast. It was his aim to build settlements and colonial stations along the way. The river Zaire or Congo river is navigable for seagoing ships up to Matadi, but beyond no navigation is possible due to the formidable rapids. Upstreams from these rapids the vast Congolese inland is best reached by way of the magnificent Congo river.



Stanley had his boats carried with him. Stanley actually arrived on 14 August, 1879 at Banana . His fellow explorers arrived with the steamer BARGA which also carried 4 little steam pinnacles, 3 of which were built by John Cockerill in Antwerp to Stanley's specifications. They were nothing but small steam powered pinnacles which could not carry much cargo,

but were used for exploration of the river and her many creeks. The smallest of the 4 boats was the ROYAL, a wooden steamyacht owned by King Leopold II himself. He insisted the boat was engaged in the colonial exploration. The ROYAL was a propeller boat built from acajou and with copper sheathing. She had been built by Samuel White in Cowes in 1872. With her 9 m. length and measuring but 8 tons she could travel at 8,5 knots. In fact the boat was tested by Stanley in Ostend in January 1879.

The second steamer was the BELGIQUE. She was a small steamer of 19,50 m long able to carry some cargo. The third boat was the ESPERANCE of 13,50 m long.

And last but not least the EN AVANT of 12,20 m with a shallow draft of 0,28 m only and a tonnage of 9 t. She had side paddles instead of a propeller and her 6 HP engine could drive her at 8 knots. The EN AVANT had a little tent to protect the occupants from the tropical sun and could set a small sail in case wood was running short for the boiler. All of the 3 steamers built by Cockerill were transported in sections and could easily be reconstructed on site. The first to be finished was the ROYAL.

On 21 August 1879 all vessels were assembled and tested and the little fleet left Banana for Boma, preceded by the SS ALBION which carried Stanley. They moved on to Vivi, the ultimate place before the cataracts started. The BELGIQUE and the ESPERANCE were used for transport of goods on the so-called Bas-Fleuve, downstreams from Vivi. The EN AVANT and ROYAL were stationed at Vivi.

The EN AVANT and the BELGIQUE were very much trouble prone. The EN AVANT always lagged behind and was more like an "en arrière". The BELGIQUE had problems with the boiler. Stanley was not amused and complained about the lack of suitable testing in Europe before sending the material to Congo.

Now Vivi was the starting point for the further exploration of the inland. Stanley, being a man of careful planning, first organised the base camp at Vivi and then went into the wilderness to find the best route to carry the disassembled boats by cart. Finally on 18 March 1880 a route is established to move on bypassing the rapids. Beginning of May the ROYAL is leaving Vivi over land. By the end of May the EN AVANT follows. The transport over land was a hellish enterprise. Some parts of the way had a downward slope of 25%. The carts with heavy pieces up to 5 tons was pulled and supported by hundreds of black porters. Stanley was under heavy pressure. Not only did many things go wrong along the way, he was followed suit by a French explorer, P.Savorgnan de Brazza, who was there to claim part of the Congo basin for the French.



On 21 February 1881, the EN AVANT and the ROYAL are launched in the Congo River. One year of unbearable toil and mishaps, accidents and casualties, to travel 87 kms. Now the boats can steam up river for a while but another 153 kms over land is awaiting the expedition. It is on 3 December 1881 that the EN AVANT is launched again on a spot which will become Leopoldville, now Kinshasa.



The famous rapids off Léopoldville

On March 16, 1881 a new steamer is ordered for service on the Haut-Congo: the Association Internationale Africaine or A.I.A.

The vessel is not built at Cockerill, but by the French yard Société des Forges et Chantiers de la Méditerranée in Le Havre.

She was not a sidewheeler, but a propeller driven boat of 12 m. long and 2,15 m. wide. She had a 12 HP engine.

In October 1881 the A.I.A. arrives in Banana. The A.I.A. only arrives in Leopoldville in November 1882. Almost one year later. During the same period of time an English protestant mission sent a boat for exploration purposes to the region. It was a small whaleboat named PLYMOUTH. They carried the boat to its destination in only 4 months compared to almost 12 months for the A.I.A. The explanation is simple.

The British recruited their porters locally which saved them lots of time and the boat was divided in smaller sections, most of which could be carried by the porters and not on heavy carts. As the sail assisted boat was easy to assemble they could use more often on navigable stretches of the river before arriving at Leopoldville.

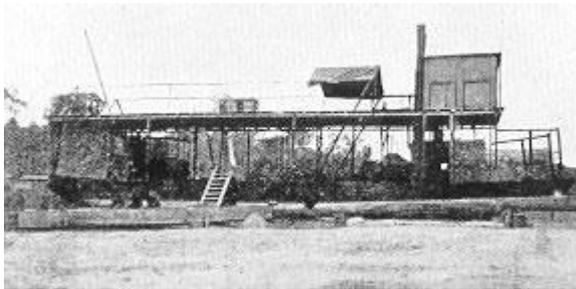
7 or 8 years later the ROYAL was found abandoned and wrecked along the river, the EN AVANT's fate is unknown.

The A.I.A. was decades later returned to Belgium and displayed in Ostend. In fact this is a story on it's own. In 1935 the A.I.A. was to be seen at the entrance of the commercial lock Demey in Ostend. Most people didn't even know what glorious little ship this had been. The boat was described as being rather lacking elegance and with a curious steam engine and an enormous tiller. The name A.I.A. only enhanced the mystery surrounding this iron boat. A.I.A. stands for Association Internationale Africaine, created by H.M. Leopold II. When Stanley returned to Belgium (in fact he arrived in Ostend aboard the KINSEMBO) after his adventures of 1879 and 1882, in order to report to his principal King Leopold II, he abandoned the little fleet: EN AVANT, ROYAL and A.I.A. in Leopoldville. Until 1927 the A.I.A. remained in Congo, in a more or less sorry state. A certain Mr. Honoré Borgers, president of the Coloniale du Littoral (Colonial museum in Ostend) suddenly remembers the little ship and tries hard to return the ship to Europe if possible to... Ostend. The grand Colonial museum in Tervuren (still existing and certainly worth a visit!) was also interested in the boat. A dispute erupted between both honorable institutions and only the intervention of the Minister of Colonies, Mr. Jaspar settled the matter. The A.I.A. was donated to the city of Ostend. It seems that in the correspondence with the Ministry there were even comparisons made with the VICTORY of Admiral Nelson... a little bit of overstatement for a good cause I should think. On July 1, 1927 the A.I.A. was discharged in Antwerp from the steamer STANLEYVILLE (coincidence?). The A.I.A. was a total wreck. Ostend not willing to lose face spent an enormous amount on the restoration of the little ship. It became clear by then that no museum or display hall in Ostend could house a 12 meter boat.

But no sweat! An African-style shed was built in a parc in the middle of Ostend. The A.I.A. was consequently displayed in the middle of a lawn. A little bit odd for most of the Ostend population and again the boat was moved a few weeks later to the Demey lock. Later the hull of the A.I.A. was moved to the Royal Central African Museum in Tervuren, but in 1956 it was returned to Congo.

Oddly enough I received an interesting mail from Mrs. Saskia Kolff who found a small steamer, or what is left of it, in Kinshasa on the premises of the Travaux Publiques. She kindly took a number of photographs, but the identity of the ship is still in doubt. It looks very much like the old A.I.A. but a local historian claims it is the EN AVANT. I doubt this however as the EN AVANT was longer and with sidewheel propulsion. The hulk in Kinshasa clearly shows a propeller and has the finer lines of a single propeller ship. The mystery around the A.I.A. is still not cleared, but it is surprising to find the probable remains of the old A.I.A. in today's Congo! Some photographs are printed below with kind permission of Mrs.S.Kolff.

The first real cargo-carrying steamer which was to be used upstreams of the rapids on this grand river, is the appropriately named sternwheeler *STANLEY*(some sources refer to her as LE *STANLEY*). This 24.00 x 4.80 x 0.80 meter steel ship was built by Yarrow and Co Ltd.in 1884 in 9 selfbuoyant sections. In this fashion the ship was actually rivetted together in the water and not on a slipway or yard, because there was none available till 1887. This steamer had a locomotive engine installed driving a sternwheel, a type of propulsion which will prove to be successful even decades after.



As it became necessary to slip the *STANLEY* for repairs, a very primitive wooden slipway was built on the site where later a thriving shipbuilding and construction activity will develop. There was no railway connection yet from the rivermouth till Leopoldville, so every piece of machinery and the heavy ship's sections were carried by man and animal to it's

destination. The *STANLEY* was a most peculiar ship in this respect that she was to be taken apart whenever deemed necessary and each part should be able to be transported over land. On each section a 2 pairs of wheels could be fitted which turned the separate sections into carts. In 1887 the first steamer was entirely re- assembled in Leopoldville and launched from a slipway.

In the mean time the English protestant missionaries continued their christening duties in the Upper-Congo. A second vessel next to the sailing/rowing *PLYMOUTH* was ordered at Thornycroft in Chiswick in March 1882, the *PEACE*. The Belgian King Leopold II was very interested in the new ship and dispatched an envoy to observe the trials on the Thames on 8 september 1882. Again a difficult and laborious voyage awaits the British expedition. The *PEACE* arrives at Stanley-Pool off Leopoldville on July 27,1883. But several unfortunate conditions does hamper the construction of the *PEACE*. The *PEACE* re-assembly started on March 20,1884.

According to the Belgian observers at Leopoldville, the *PEACE* was a handsome little ship, measuring 70 feet by 11 1/2 feet wide. She drew less than a foot.



She can steam at a leisurely 4 knots and more if necessary. The hull and engine weigh 6 tonnes. She consists of 7 watertight compartments, built in Bessemer steel with zinc plating. The zinc plating also absorbs much of the force when hitting obstructions. The PEACE has 2 propellers of 16" , but

they revolve in closed tunnels. Manholes above the propellers allow easy repairs and cleaning without having to lift the boat out of the water. The vessel was also able to draw a kind of iron curtains which protected the crew and passengers from arrows and other projectiles. In fact the PEACE is the first ship on the Congo with this particular kind of tunnel propulsion invented by Buchanan in 1856 and used before on the Nile by Thornycroft.

Another steamer which is referred to is the HENRY REED. The little sternwheeler was owned by the American mission of M.Bellington. It was sometimes chartered by the Belgian government as there was a shortage of boats. The ROYAL was nothing but a wreck and the A.I.A. was immobilized due to a shortage of spare parts. We are talking about August 1886 now.

A considerably larger vessel was the *VILLE DE BRUXELLES*. Ordered at Cockerill she was designed by Engineer Delcourt, who was responsible also for the *EN AVANT*, *A.I.A.* and the *STANLEY*. The *VILLE DE BRUXELLES* however was first intended as a wooden hulled boat. The reason for this was the abundant availability of wood in the Congo, the advantages of repairing the ship without need of specialised yards and the reduced weight for the bearers which rendered transport over land much cheaper. However there was a lot of opposition too...

With her draft of 3 feet and a cargo capacity of 35 tons, the *VILLE DE BRUXELLES* was the largest ship so far to be used on the Congo River. Like the *STANLEY* she was a sternwheeler. On 31 December 1886 she conducted trials on the River Scheldt. On 15 March 1888 she could finally be reconstructed in Leopoldville. She was launched on 5 July 1888. However the *VILLE DE BRUXELLES* suffered several mishaps from the very start. Due to inadequate isolation between the boiler and the wooden deck she almost burned down. Soon she was adapted and repaired and on 7 January 1889 she started her first trip.

The first years of the vessel were a disaster. The planking started to rot (as predicted by the opponents), the caulking loosened and she started making water. In April 1890 the boat was slipped for two months. On 27 June 1890 she was re-launched but on 18 July 1890 she grounded and remained immobile for a considerable time. By February 1892 the bulwarks were badly affected by white ants who ate away most of the wood. After 7 months of repairs she suffered fire on 12 October 1892, probably arson. The superstructure was destroyed. In December 1893 it was decided to re-build the *VILLE DE BRUXELLES* with a steel hull. In 1894 she finally starts a new life. During the 66 months she had a wooden hull, she had been out of use 20 months for repairs.

The *ROI DES BELGES* was a 35 ton ship similar to the *STANLEY* which was built first by John Cockerill for the Compagnie du Congo pour le Commerce et l'Industrie (CCCI). The CCCI was a private enterprise founded in Brussels in 1887. In 1888 she formed two

subsidiaries: Compagnie des Magazins Généraux and the Societé Anonyme Belge pour le Commerce du Haut Congo (SAB).

Every section was carried to Leopoldville between July 2, and July 15, 1887. The heavy engine and boiler arrived 15 days later. The *ROI DES BELGES* was finished on September 30, 1887 and made her maiden trip on March 17, 1888. The *ROI DES BELGES* was the steamer commanded by Joseph Conrad for a while for a trip from Stanley Falls to Leopoldville. This experience was used in his book *Heart of Darkness* in which some dark and truly horrifying aspects of Belgian colonialism are described.

The SAB needed new ships, fast really. They acquired two ships from Sanford, the *FLORIDA* and the *NEW YORK* plus two smaller steam launches: *GENERAL SANFORD* and *BARON WEBER*.

The *FLORIDA* was a small steamer of 15 tons with a single propeller. She entered service for the Sanford Exploration Expedition in 1887 but had been used before by Stanley as a barge. The *NEW YORK* was a whale-boat of 3 tons with side paddles. In 1891 she was converted into a barge awaiting the arrival of better engines. The *GENERAL SANFORD* and *BARON WEBER* of 6 tons each were twin propeller ships. The *ROI DES BELGES* was transferred to the SAB. But they needed more and two more ships were ordered with Cockerill in Belgium: *ARCHIDUCHESSE STEPHANIE* and *PRINCESSE CLEMENTINE*. Two smaller units of 6 tons, the *BARON LAMBERMONT* and the *AUGUSTE BEERNAERT* were ordered at Forrest & Sons Shipyard in England.

When the railway to Leopoldville was finished March 16, 1898 larger ships became necessary to carry the goods upstream. In 1897 three 150 ton steamers, the *BRABANT*, *HAINAUT* and *FLANDRE* (45.00 x 9.00 x 1.50 meters) were introduced. Soon a more comprehensive quay, slipway or drydock, storage sheds, etc became necessary in Leopoldville. Here we enter the 20th century. The shipyard expanded and was used extensively up to the independence of Zaire in 1960. The series of photographs show the yard how it looked much later during the 1930's. Large barges were still pushed sideways into the river with the help of some 75 to 100 shipyard workers pushing on the side while a sternwheeler is pulling from the river. The location of the yard is exactly the spot Stanley picked out to build his settlement.





The mighty Congo River anno 1986, between Boma and Matadi.

Inséré 28/05/21 DOSSIER Enlevé 28/06/21

Port+ improving the efficiency of tanker port calls

Antwerp based port call information provider Port+ is helping improve the efficiency of port calls, including reducing waits at the pilot station and delays in berth activity.

Antwerp based port call information provider Port+ is helping improve the efficiency of tanker port calls, including reducing time waiting for berths, and improving the efficiency of work done at the berth.

It has developed an online platform which acts as a 'single source of truth' for companies working in the port, including cargo owners / charterers, terminals, surveyors, ship agents, ship operators and port authorities.

The platform, branded "Qronoport", is currently being used in the Port of Antwerp, but is also available for use by, and in, other ports.

In Antwerp, the port authority gives the solution its support, but the driving force behind implementing it comes from cargo owners / charterers, ship operators, surveyors and terminals.

Port+ has been in business since 1905, when it was signalling the arrival of ships by radio, as an independent maritime information provider working for Belgian port communities. It has been providing a range of information services to port users since then, including information about vessel arrivals and departures, gathered with radar, and now focussing more and more on digital methods.

A platform like Qronoport would be useful in any port around the world. The main issue, says Hans De Hondt, digital solutions manager at Port+, is that nobody has overall control of all of the port processes, and not all parties have the same incentive to reduce delays. For example, if the charterer is paying for the vessel by the day, the shipowner does not get any benefit if the port call is made shorter. A surveyor does not get paid more from doing something which might help reduce delays, such as proactively informing someone else of a change which may impact them.

Stakeholders do not all have contractual relationships with each other, or may not even know each other.

The people involved spend a lot of time chasing information with multiple phone calls and e-mails, including e-mailing spreadsheets, and do not necessarily inform each other when the information changes.

And from a technical perspective, it is quite a challenge to gather and combine data from the computer systems each company uses, plus information shared in phone calls, e-mails and shared spreadsheets. Standards for data description and exchange would be helpful, but very difficult to get agreement on within the industry.

And with each tanker operator and charterer having activities in many ports around the world, it may seem too much trouble to develop digital integrations between its internal planning computer system and a system for just one port.

The operations in the terminal for tankers can be more complex and less predictable than for other vessel types, Port+ says. There are more stakeholders involved, which means more communication needed between partners, and more difficulty to get a complete overview.

Mr De Hondt describes the current situation as "the path of lowest resistance, but definitely not the most efficient path in the long run."

Port+ is not advocating any changes which would put seafarers under more stress or push them to work faster, because it is looking at improving the efficiency of the sequence of operations, not the speed of the operations themselves, Mr De Hondt says.

It tracks how long individual operations take, so it can indicate possible delays for the next activity, not to evaluate whether they are taking too long. For example, if the terminal indicates that operations were planned to start at 1400 and will take 6 hours, but they actually start at 1530, it can estimate the new time the work will be completed.

The system could actually reduce crew stress levels, by ensuring operations take place at their planned time. If one task is delayed, that can create pressure for a subsequent task to be done faster, to make up for lost time.

Wastage

According to the company's analysis, tankers going into Antwerp spend 73,900 hours per year waiting at a pilot station for clearance to sail into the port. There are 5,300 port calls a year from tankers, so an average wait of 14 hours. 62 per cent of vessels are waiting on arrival at the pilot station.

25,850 hours of this waiting was because the destination berth was not available at the time of arrival.

Tankers (product and parcel tankers combined) spend on average 2.5 days in Antwerp. While vessels are at berth, Port+ calculates that 25 per cent of the time is wasted, defining waste as time where there are no operational activities taking place.

The main gaps are between "gangway down" and "surveyor on board"; between "lab results received" [for testing cargo prior to loading] and "cargo arm connected" ; and between "completion of operations" and "actual time of departure".

Predictability

A compounding factor is the lack of predictability. The estimated time of departure for a tanker gets changed on average 3 times per port call, Port+ says. 86 per cent of tankers

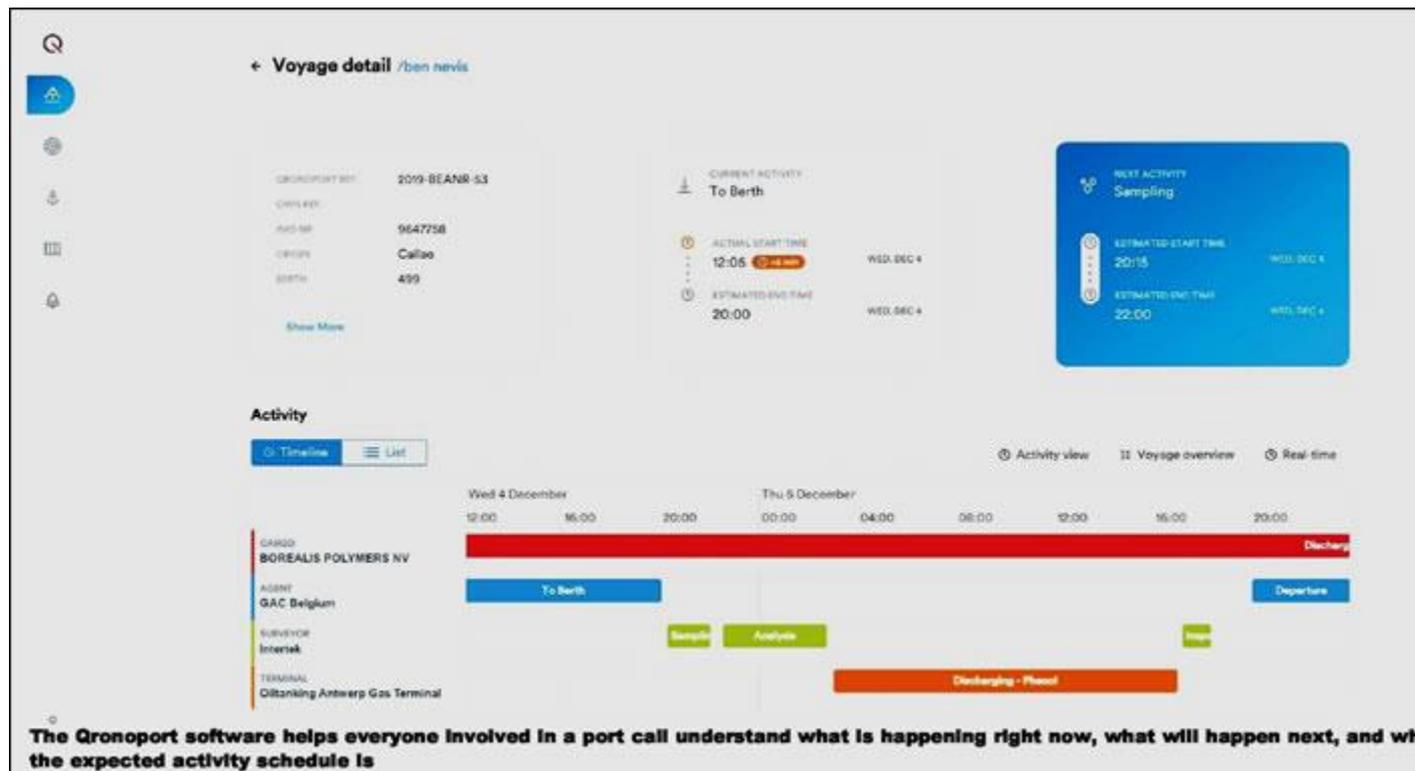
leave the port more than 2 hours delayed. And of the vessels with a delay of more than 2 hours, the average delay is 9.6 hours.

There are many factors which can cause the changes, including changes in operational plans, delays by any of the stakeholders, unavailability of locks, pilots or tugboats.

If the port calls could be more predictable, there would be less need to build in 'buffers' between shipments, port calls and berth calls.

Formula 1

The company takes its inspiration from the way that Formula 1 pitstop times have decreased from 67 seconds in 1950 to 2 seconds now.



In a Formula 1 pitstop, all of the processes have been optimised, including individuals optimising their own processes, and taking each other's processes into consideration. All possible preparations are made beforehand.

Where in 1950 the pit crew had to wait till the car actually entered the pit lane to see what needed to be done, nowadays the pit crew has all the information it needs digitally and in real time. The driver does not have to explain anything to anybody.

There is better structured communication and good access to data.

Different roles

In improving efficiency of port calls, it is helpful to look in detail at the roles, goals and incentives of the main players involved – the cargo owner / charterer, the terminal, surveyors, ship agents, ship owners and authorities. The cargo owner has a key role in the port process, being the first to know how the cargo will be moved from one place to another. The cargo owner endures the cost of delays, so has the most to gain from reducing them. If the vessel is waiting at the pilot station before entering the port, that will nearly always count as demurrage, paid for by the cargo owner. So the cargo owner has the biggest incentive to share data with other companies.

The terminal has a key role in optimising port processes, since it has the data about the operational plans and the execution of operations. Many other stakeholders depend on information provided by the terminal, including surveyors and ship agents. The faster ships

can be 'processed' by the terminal, the more vessels the terminal can handle during the year.

Surveyors take a critical role, doing sampling and analysis of cargoes. They usually get paid for by each job. It would be useful for other organisations to know what the availability of the surveyor is, when the surveyor will be at the terminal and for how long, and how long an analysis will take. Surveyors themselves are often contacted at the last minute, which makes it hard for them to do good operational planning.

Ship agents are a hub of information between parties, but they often have to chase it from everybody, while the information itself is changing. The agent has to constantly assess the situation and make estimations or decisions about what information might be wrong or outdated.

Ship operators have an incentive to get the vessel in and out of the port as fast as possible, if the vessel is on a voyage charter.

Port authorities are involved in planning pilot boats, pilots, tug boats and locks, which can also be a cause of delays. While it is easy to just blame port authorities, there is also more shipping companies can do to help them to plan, Mr De Hondt says.

"The terminal doesn't exactly know when the barge for barge-to-ship operations will arrive, the surveyor doesn't exactly know when terminal operations will be done, the ship agent often waits till the last moment to order a pilot because he's not sure when inspection by the surveyor will be done."

Qronoport

Port+ has developed a data sharing platform called Qronoport which can be made available to other ports around the world, so they can have the same service it has developed for Antwerp. Either a port authority, or private companies using the software, could take on the role of implementing the service.

Qronoport can be set up to gather data from software systems of different companies, and also take data from AIS systems, and also to be updated directly.

There are two main offerings – a central data exchange platform, where you can share and receive operational planning data with other stakeholders, and an online solution for visualizing the data, showing the difference between planned times and actual times.

It enables participants to get an accurate overview of the activities planned, currently taking place and completed.

The company is developing algorithms which can analyze the data and improve predictability (perhaps to be similar to the services which tell you "this plane is usually 10 mins late").

Each company's data is placed into its own "digital vault", and only available to another company where it has provided authorisation, and this company is linked to the port call.

If the system covers more ports, then the data integration effort would be lower for subsequent implementations – for example, a tanker operator which has integrated with Qronoport for its Antwerp port calls could also easily integrate with Qronoport for any other port in the world.

Inséré 29/05/21 DOSSIER Enlevé 29/06/21

Using VDR data to audit navigation

You don't need to send an auditor to a vessel to meet OCIMF's TMSA guidance for "navigation audits". Another way to do it is to inspect voyage data recorder (VDR) data. We spoke to Avenca's Dr Neil Baines, an expert on maritime VDR analysis.

One of the sections of the Oil Companies International Marine Forum (OCIMF) Tanker Management Self-Assessment (TMSA) guidance is that shipping companies should engage independent navigation auditors to get a sense of how well the vessel is being navigated. This can be done by sending an auditor onboard the vessel to watch the crew at work. But this is very expensive, particularly in times of COVID-19 and uncertainties about when people can get on and off vessels. Also, having someone physically watching over the crew may not show the crew's typical behaviour.

Another way to do it is to review voyage data recorder data.

OCIMF recently (Aug 2020) published a revision to its document "Recommendations on the Proactive Use of Voyage Data Recorder Information", which was originally published in 2013. The revision considered the impact of recent updates to the VDR performance standards, made by IMO. It is available for free download on the OCIMF website.

Dr Neil Baines, Managing Director of AVENCA, advised OCIMF on writing these recommendations. Dr Baines says that his company has seen increasing enquiries from tanker companies over the past few years for assistance working with VDR data, mainly for remote navigation auditing services.

The original regulatory requirements of a VDR were that it should store a minimum of 12 hours of data, because the systems were designed to be used after an accident. 12 hours is not enough to make a general audit of navigation quality. Since 1 July 2014, the regulations have required new VDRs to provide storage for a minimum of 30 days' data, but adding on additional storage capacity to older VDRs may not be very difficult or expensive, Dr Baines says.

VDR data has 3 "types" – bridge audio recording; video data from the radar and electronic chart system; and equipment data (known as NMEA/serial). Some companies also have CCTV data. It is increasingly common for VDRs to be connected to the satellite communications system, although companies would usually only upload equipment data to the satcom, other data files are too large to routinely send by satellite.

Insights you can get

The data can be analysed over long time periods and short periods, and both would be done in different ways. For long time periods of data, you can run computer scans to get a sense of whether any risks were being taken. For short term periods, you can look at all of the available data to get a comprehensive understanding of how the vessel was being navigated.

If you are looking at a long period of equipment data, you can check for specific 'events', such as if there was a low under keel clearance while the vessel was above a certain speed, if the rate of turn was above a certain change in degree per minute when the vessel had a certain speed, if there was an excessive rudder angle when going at higher speed.

You can check the average time taken to change engine speed after an instruction is given. You can check AIS data for any close encounters.

The position data can be analysed together with chart data, to check that the vessel has adhered to any Traffic Separation Schemes, and complied with any speed / depth restrictions of that scheme.

If you are investigating an accident or near miss, or assessing performance in a time of difficult navigation, you might want to look at all the data over a shorter time period. For example, you can see what happened in the lead-up to an accident, or how the bridge team were working together.

A comprehensive analysis can review all available data types together – audio, radar / ECDIS, and equipment data. That way you can hear what was being said on the bridge, see what the crew could see on the radar and ECDIS screen, understand how they interpreted it, and what they did with the equipment controls.

If the file sizes are too large for digital transmission, a USB drive can be couriered.

According to the best practise guidance, the navigation audit should also include a review of bridge team procedures, passage planning and voyage documents. This can be done alongside the review of VDR data.

The aviation sector has long seen benefits from analysing flight data, with the International Civil Aviation Organisation (ICAO) making flight data monitoring a standard for all aircraft over 27 tonnes since 2005, Dr Baines says.

Ships are different to aircraft in that there is a larger group of people in charge of navigation. "Listening to how the team are interacting [from audio recordings] is at least as important as analysing the numeric data coming from sensors," he says.

Avenca's service

Avenca's maritime customers include oil companies, shipping companies, national investigation authorities, insurers, law firms and marine consultancies.

AVENCA's service includes gathering the data (via satcom or couriered file), organising and merging the data (including CCTV where available), loading it onto a cloud server, and making it available for the customer to access over the web, so they can hear and see exactly what was happening. It has developed its own software system to do this, called "Aura".

Tanker companies can view the data themselves and do their own navigation audit, or use Avenca's navigation auditing service, where it deploys experienced master mariner auditors. They receive a written report with video clips.

The audit would normally include analysis of a portion of a voyage identified as being of higher risk, such as a departure, approach / berthing, or transit through a traffic separation scheme.

Avenca has produced videos for customers where it compiles together audio and video from the VDR to show something specific – such as an example of particularly desirable or undesirable behaviour, for use in training.

Dr Baines' background is a PhD in acoustic engineering, which gave him knowledge which, he says, often comes in handy improving poor quality audio recorded from some VDRs.

He then worked in aerospace, finally as technical director with Smiths Industries Aerospace Data Management Systems division, which makes aircraft flight data recorders.

When voyage data recorders were being mandated for shipping in 2001, the maritime industry was very focused on how to get the hardware fitted and comply with regulation. Based on his aerospace experience, Dr Baines believed that valuable safety and operational efficiency-related benefits could be derived from analysis of the new data that was being recorded. And he set up Avenca at that time to serve the maritime sector through the provision of suitable analysis software and services.

Inséré 31/05/21 BOEKEN LIVRES BOOKS Enlevé 31/06/21

Bretagne. 30 Years of Splendour

BOEKBESPREKING By : Frank NEYTS

Recently Gbooks international published a remarkable book entitled "Bretagne. 30 Years of Splendour ". Vitor Francisco signed as the author. The book is a wonderful, colourful book stuffed with fantastic, large pictures of Bretagne/Brittany. Images of both the mv 'BRETAGNE', a cruise ferry between Brittany (St Malo) and Britain (Portsmouth), and of Bretagne, the French region the ship is named after, and where the headquarters of her

shipping company Brittany Ferries are located. In 2019 the 30th anniversary of the beautiful 'Bretagne' has been celebrated.

In her honour Vitor Francisco has made a jubilee book that in praising words and in captivating photographs pays a ship-lover's tribute. Not only to the 'BRETAGNE', the cruise ferry, but also to Bretagne the coast-region! Vito Francisco is an English salesman with Portuguese roots, who monthly takes the boat across to visit the mainland of Europe for his job. He has sailed in many, many, many cruise ferries in Europe. He knows them all, inside out. And there is one particular that he has fallen in love with completely and that is the mv 'BRETAGNE'. "Bretagne" (ISBN 9 789492 368478) counts 248 pages. It is available as hardbound (retailprice P&P included: BE & NL € 42,00 ; UK £ 38.50. Ordering the book can simply be done by sending an e-mail to info@gbooksinternational.nl (NL & BE customers); to vitor.francisco@talktalk.net (UK-customers). Please provide full postal address, this needed for delivery by parcel-services. This book is real value for money!

Inséré 31/05/21 NIEUWS NOUVELLES Enlevé 31/06/21

Lichtschip 'Westhinder III' vereerd en beschermd als erfgoed (+video)

De Vlaamse overheid kende het lichtschip 'Westhinder III' het statuut van Beschermd Varend Erfgoed toe. In maart 2022 wordt het monument aan de Antwerpse Droogdokkensite opengesteld voor het grote publiek.



'Westhinder III' krijgt statuut van Beschermd Varend Erfgoed - © Julie Desmet
Het knalrode lichtschip 'Westhinder III' lag jarenlang in het Bonapartedok en werd gered van de sloop. De private stichting MPM (Maritiem Patrimonium) ontfermde zich over de restauratie in het Droogdokkenpark aan de ingang van de oude stadshaven.

Lichtbaken

Sinds 1864 heeft België lichtschepen uitgezet voor de Belgische kust om de beveiligde doorvaart van zeeschepen naar de havens van Antwerpen en Rotterdam op het drukbevaarde Noordzeekanaal te verzekeren. De lichtbakens voeren op kop als referentiepunt bij duisternis in volle zee. De 'Westhinder III' is de laatste uit een reeks van drie lichters en werd gebouwd in 1950 in Oostende. In 1992 werd het schip uit de vaart genomen. Het is het enige Belgische lichtschip dat zich nog in oorspronkelijke staat bevindt.

Vlaams minister van Onroerend Erfgoed Matthias Diependaele (*derde van links op foto*) kende het certificaat van Beschermd Varend Erfgoed aan Luc Hofkens (*uiterst rechts*), voorzitter van MPM (die eigenaar is van de lichter), toe. "Handel heeft altijd in onze genen gezeten en daar hebben we heel wat rijkdom en welvaart uit gehaald", vertelt hij. "De 'Westhinder III' vertelt het verhaal over onze welvaart in Vlaanderen en welke rol wij spelen in Europa. Het verhaal van onze identiteit zorgt ervoor dat we bakens hebben en dat we weten waar we sterk in zijn als Vlamingen."

Opnieuw tot leven

"De verleden tijd mag geen vergeten tijd worden", vult Hofkens aan. "De jonge generatie weet amper nog hoe het vroeger ging om per schip Antwerpen veilig te bereiken zonder digitale ondersteuning. We gaan de vele avonturen en scheepsverhalen opnieuw tot leven brengen."

Buzz

Watererfgoed Vlaanderen heeft een duidelijke visie over de invulling van de Droogdokkensite en wil de industriële erfgoedsite omvormen tot een waardevolle belevingsomgeving voor het publiek.

Burgemeester Bart De Wever (*tweede van links*): "De maritieme sector heeft onze stad al zo veel eeuwen welvaart gebracht. Mijn illustere voorganger Craeybeckx zei: 'Als je de wereld wil zien, dan steek ik mijn hand in het water van de Schelde'. Dat is zo en blijft zo. De inzet van alle vrijwilligers zorgt ervoor dat deze site een nieuw leven krijgt. Er hangt hier een zekere 'buzz'. Toen mijn negentienjarige zoon op een zaterdagavond de avondklok niet respecteerde en thuiskwam, stond hij aan de grond genageld. Hij zei: 'Ik kom van de Droogdokken, papa'. Toen was alles gepardoneerd", lacht De Wever. "De Droogdokkensite moet een thuis en uitvalsbasis worden voor het maritiem erfgoed en nog veel meer dan dat. We hebben langs alle kanten budgetten bij elkaar geschraapt, de komende jaren staat het hier te gebeuren."

'Founding father' van MPM Jean-Jacques Westerlund en havenschepen Annick De Ridder konden niet aanwezig zijn bij de plechtigheid wegens coronaquarantaine. Gegidste bezoeken zijn mogelijk vanaf 25 maart 2022. V.l.n.r. op de foto: Vlaams minister-president Jan Jambon, Antwerps burgemeester Bart De Wever, Vlaams Minister van Onroerend Erfgoed Matthias Diependaele en voorzitter van MPM Luc Hofkens

Hieronder ziet u een video van de doop van de 'Westhinder III' als Varend Erfgoed.

<https://youtu.be/IWJYRyES2io>

Julie Desmet

Inséré 01/06/21 NIEUWS NOUVELLES Enlevé 01/07/21

NOAA begins transition exclusively to electronic navigation charts

NOAA said that it will begin to implement its sunset plan for paper nautical charts this month, starting with the current paper chart 18665 of Lake Tahoe. After August, NOAA's electronic navigational chart will be the only NOAA nautical chart of the area.

This is the first traditional paper chart to be fully supplanted by an electronic chart as part of NOAA's Office of Coast Survey Raster Sunset Plan, which includes a new process to notify mariners of the transition of individual paper charts to electronic charts. These charts are easier to update and maintain, keeping mariners safer with up-to-date information on marine hazards.

As part of the sunset plan, released in 2019, mariners will be officially notified of this chart's cancellation in the U.S. Coast Guard Local Notice to Mariners. A note in the lower left corner of the chart will state that it is the last paper edition and it will be canceled six months later on August 26. NOAA will continue to announce the cancellation of additional paper charts as the sunset plan progresses, initially based on volume of sales or downloads, and in regions with improved NOAA electronic navigational chart coverage. Cancellation of all traditional paper and associated raster chart products will be completed by January 2025. NOAA announced the start of a five-year process to end traditional paper nautical chart production in late 2019 via a Federal Register Notice. While NOAA is sunsetting its traditional nautical chart products, it is undertaking a major effort to improve the data consistency and provide larger scale coverage within its electronic navigational chart product suite. Over the next four years, NOAA will work to ease the transition to electronic products by providing access to paper chart products based on electronic data. The online NOAA Custom Chart tool enables users to create their own paper and PDF charts from the latest NOAA ENC data.

Inséré 03/06/21 DOSSIER Enlevé 03/07/21

Hiring ship armed guards – beware race to bottom

Cost pressures on tanker operators, and increased operating costs of running security companies, has led to shipping companies hiring security companies which cut corners, warns security consultancy Dryad Global

By Dryad Global

Ship operators hire armed guards to countenance the potential use of lethal force to defend a vessel in extreme and proscribed circumstances.

It's a serious business and has potentially significant consequences.

However, there continues to be a trend within some quarters of the industry that devalues the importance of armed guarding through low prices and loose guidelines.

The costs of placing armed guards has risen considerably since the disruption caused by COVID-19 took effect.

But this does not mask the relentless downward pressure on prices [for security companies] over the previous 24 months and barely alleviates the financial pressures of increased operating costs and reduced business volume induced by the pandemic.

In response, this precipitated a race to the bottom price war amongst some providers looking to retain market share at all costs.

To achieve rock-bottom prices compromises have been made, short-cuts taken, standards lowered, blind-eyes turned, ignorance and indifference ingrained on both sides of the supply and demand equation.

However, failing to understand and assess the threat for each specific transit, ignoring and failing to interrogate financial substance, capability and operational standards of the private maritime security company (PMSC) is a dangerous game and has serious consequences.

The impact of Covid-19 on the movement of personnel between vessels and ports, the extended levels of isolation at sea, poor working conditions and financially struggling PMSCs mean there are a number of significant factors that vessel operators need to consider.

Due diligence in terms of SOLAS and financial viability are of paramount importance to safeguard cargo, crew and reputation.

In light of operational difficulties an increasing number of operators are failing to carry out due diligence on the armed guards they use, opting for the cheapest options to ensure they meet the minimum requirements of their insurance providers for transits through high risk areas like the Gulf of Aden and Indian Ocean.

When it comes to hiring personnel with designated security duties including armed guards, vessel operators will invariably get the service they pay for and thus are liable for the associated heightened risks of dealing with such providers.

Vessel protection and armed guarding should be defined by the highest of standards and needs to provide vessel operators with quality assurance at its best.

In a commoditising industry we aim to stand out for our refusal to cut corners.

For each voyage, the decision to engage a PMSC is an operational one, which should be based on a bespoke voyage-specific risk assessment.

Due diligence in the selection of a private maritime security company (PMSC) is indeed able to be conducted upstream of such a requirement but should be thorough and potentially revisited in part if their engagement is deemed necessary.

Ukrainian dispute

In two separate incidents in July and August 2020 a Ukrainian private maritime security contractor working for private maritime security company Alphard hijacked two vessels and their crew in a dispute over working conditions and pay.

On July 21, the Jaeger bulk carrier embarked three security guards in the Indian Ocean before sailing towards the Red Sea, a transit through the High Risk Area (HRA) that the Eagle Bulk company has completed for all transits for over ten years.

Reports say that once onboard, one of the guards took control of the vessel, asking it to deviate from its course, while voicing grievances and demanding compensation for late salary payments.

On August 21 st, the same Ukrainian, still working for private maritime security company Alphard, broke into the armoury onboard research vessel Golden Palm and took the crew hostage again in his fight over back pay.

The Ukrainian guard had been stuck at sea for over 5 months, without pay and with no prospect of relief. Although a grievous criminal act, the circumstances drove him to desperation.

The Eagle Bulk and Golden Palm incidents aren't isolated, they are just underreported in the public domain.

What the PMSC's are facing is a pressure cooker of factors that are putting unacceptable levels of pressure on crew and guards.

The incidents onboard the Eagle Bulk and Golden Palm shine a light on the desperate working conditions faced by some private maritime security personnel.

PMSCs continue to offer dangerously low prices for the contracting of their guard services which has a knock-on effect for its employees.

Ship operators have a duty of care to ensure that the PMSC they select to contract for their transit security requirements maintains the highest standards in relation to seafarer's welfare and industry best practice.

Dryad Global acts as a broker to supply embarked security teams. It conducts thorough due diligence checks, and ensures the correct vessel protection measure is contracted for the specific risk of the ship operators' transit. Further information about this story is online at <https://channel16.dryadglobal.com/hiring-ship-security-personnel-and-armed-guards-what-you-need-to-know>

Inséré 05/06/21 NIEUWS NOUVELLES Enlevé 05/07/21

Containers tumble into sea as fire-stricken X-Press Pearl lists starboard

by Jasmina Ovcina

X-Press Pearl, the feeder containership which continues to burn in Sri Lankan waters for the sixth day, has listed starboard causing some of the containers to tumble into the sea and sink.



X-Press Pearl; Image by Indian Coast Guard

According to an update from the Sri Lanka Navy, the listing has been caused by rough seas and bad weather. As informed, the fire on board X-Press Pearl has been exacerbated by strong winds and is now spreading from the forecandle area to the quarterdeck and the bridge.

The situation on board deteriorated yesterday after a reported explosion in one of the containers which contained hazardous material, resulting in an emergency evacuation of the crew as a precautionary measure. Two seafarers out of 25 were taken to a hospital for treatment of injuries.

Dramatic footage from the scene shows the vessel was engulfed in flames and thick, black smoke swelling from the scene.

The navy said that Indian Coast Guard Maritime Pollution control ships with firefighting capabilities are set to arrive at the scene to help extinguish the fire. ICG ships Vaibhav and Vajra were dispatched to help with firefighting efforts, the Indian Coast Guard said.

In addition, a Dornier aircraft carrying fire extinguishing agents and oil- dispersants is also made ready to respond in the event of an emergency.

The Sri Lanka Port Authority believes the fire was caused by a chemical reaction of the chemicals being transported on the ship.

Namely, the feeder vessel, registered under the flag of Singapore, is carrying 1,486 containers with 25 tons of Nitric Acid, several other chemicals, and cosmetics from the port of Hazira, India, according to SLPA.

Sri Lanka Ports Authority and the Sri Lankan Navy have towed the vessel to 50 miles from Colombo port amid growing fears of oil and chemical spills, local media said.

Namely, the ship's cargo poses a major threat of an environmental pollution to the area, especially since concerns have been voiced about the potential risk of the ship breaking apart. What is more, there are 300,000 metric tons of fuel in the vessel's tanks, which could spill into the sea if the ship splits in half or sinks.

The Marine Environment Protection Authority said it was taking water samples from the vicinity of the vessel and testing air pollution levels to assess the impact from the incident on the local environment.

The agency added it was prepared to seek legal action and compensation for any environmental damage arising from the incident.

The 2,700 TEU boxship was built in 2021 by Zhoushan Changhong International and is owned by Singapore-based X-Press Feeders.

Marine insurer WK Webster said that the general average has been declared in connection with the fire, adding that general average security will now be required from all cargo interests prior to the delivery.

The massive fire is being reported in less than a year from another major incident in Sri Lankan waters when a fire erupted onboard the [supertanker New Diamond](#), prompting an extensive firefighting and salvage operation.

Fire and Explosions on Containership off Sri Lanka

The fire aboard the Singapore-flagged containership **X-PRESS PEARL** intensified, prompting the decision to evacuate the ship as firefighters struggled with worsening weather conditions.

Sri Lankan officials are now preparing for an environmental incident as the vessel has lost containers overboard, taken on a list, and the fire continues out of control.



According to the vessel's owners X-Press Feeders, after having brought the fire under control on May 24, the situation began to deteriorate as weather conditions worsened. The fire is being fanned by strong winds and early today, May 25, they ordered the 25 crewmembers along with 12 firefighters from the Smit's salvage team to evacuate the ship. The Sri Lanka Navy completed the evacuation with having suffered minor injuries. As the wind pushes the fire aft on the ship and onto the quarter deck approaching the bridge, the Sri Lankan Navy reported hearing explosions aboard the ship possibly coming from the burning cargo. After the explosions, Sri Lanka requested assistance from India in fighting the fire. The Indian Coast Guard sent an airplane to provide observations and later this afternoon three vessels from the Indian Coast Guard also arrived on the scene. Over the weekend, the vessel's owners had also hired the Dutch salvage company Smit to assist

with the firefight. Smit had a tugboat alongside spraying water on the fire and was airlifting additional, specialized fire fighting equipment to Sri Lanka. "We are trying our best to put out the fire that broke out aboard the ship," said the Hon. Rohitha Abeygunawardena, Minister of Ports and Shipping for Sri Lanka. "Although the fire was been brought under control, it has reignited due to the prevailing weather conditions and the continuous reaction of the chemicals in the ship."



Due to the rough seas and the amount of water already sprayed on the 37,000 dwt vessel, the Sri Lanka Navy reports the containership is now sitting low in the water at the bow and listing to starboard. As a result, at least eight containers were reported to have fallen overboard with the Sri Lanka Navy warning that some of them could contain dangerous chemicals. Some containers were thought to have sunk, but officials also warned against touching or opening anything that might be found floating or washed up on the coast. In addition, fishing and other vessels have been warned to remain away from the area.



The **X-PRESS PEARL** was carrying approximately 300 tons of bunker fuel, although some of it has been removed from the ship. Officials, however, are prepared with chemical dispersants and booms should an oil leak occur. They estimate that there are 100 tons of fuel on the vessel. Previously, the Sri Lanka officials had ordered the **X-PRESS PEARL**, which is anchored approximately 9.5 nautical miles northwest of the port of Colombo, to move further out to sea. The vessel had not been moved, but reports are that they are exploring the possibility of towing the burning ship further offshore. The fire was originally discovered on May 20 in the forecandle area of the ship. It was believed to have started due to a chemical reaction and the ship's crew with assistance from Sri Lanka thought they had been able to extinguish the fire on May 21. The Sri Lanka Navy, however, warned that there were hotspots aboard the vessel and feared the fire would reignite. The fire was

burning over the weekend with Smit leading the firefight and on May 24, they had reported it was under control. The crews were carrying out a risk assessment while taking steps to stop the fire from spreading into other areas of the ship. The **X-PRESS PEARL** is a new feeder vessel delivered to her owners in February 2021. She was completing a voyage from Qatar and the UAE with stops in India and Sri Lanka before her scheduled arrival in Singapore.

Source : MAREX

Inséré 07/06/21 HISTORIEK HISTORIQUE Enlevé 07/07/21

Tentatives faites par les gantois pour s'ouvrir une communication avec l'océan

par Armand de Bast 1829

Dès le dixième siècle le commerce de la ville de Gand avait commencé à s'étendre fort loin. Le tissage de la laine et la fabrication du drap, ainsi que l'art de fabriquer les tapis, cultivé plus tard par les Flamands, à leur retour des croisades, y avaient attiré un grand nombre d'artisans, de marchands et d'étrangers.

Placée sur la route de la plus active circulation, la ville de Gand voyait continuellement accroître son industrie manufacturière et son commerce. Les Gantois, devenus riches, appliquèrent une partie de leurs moyens à des travaux d'utilité publique. Depuis lors ils formaient déjà le projet de s'ouvrir une communication directe avec l'océan, attendu que les eaux de l'Escaut, n'arrivant à l'embouchure de ce fleuve, qu'après de grands détours, ne pouvaient rendre à leur commerce que des services incertains et dispendieux.

La communication la plus rapprochée de la mer que la ville de Gand possédât, jusqu'au milieu du 13^e siècle, était le Torrent des Châtelains.

Cette ancienne rivière s'embranché à l'endroit, dit Langcrbrugge, à la ci-devant Pêcherie des Châtelains et s'écoulait autre fois par les communes de Cluysen, Ertvelde et Bouckaute vers la mer en face de Biervliet.

Le torrent des Châtelains, ne pouvant recevoir les navires de commerce de la haute mer, n'offrait point à la ville de Gand l'avantage immense de servir à l'exportation vers l'étranger et ne lui procurait point les moyens de soutenir avec la ville de Bruges, alors sa rivale, la concurrence que réclamaient ses expéditions maritimes. D'un autre côté, dans les guerres fréquentes que se livraient les grands chefs féodaux de la Belgique, unis par intervalle, de part et d'autre aux plus puissants princes de l'Europe, les Flamands furent plus d'une fois exposés à voir intercepter leurs convois au moment où ils traversaient par eau le territoire ennemi. Les Gantois, pour éviter ces inconvénients, supplièrent, en 1251, Marguerite, comtesse de Flandre et de Hainaut, de les autoriser à continuer le creusement du canal, appelé la Lieve, entreprise qu'ils avaient déjà commencée en 1231. Cette permission leur fut accordée par octroi du 24 octobre 1251.

La Lieve s'étendait alors depuis la ville de Gand jusqu'au port de Damme, que l'historiographe Rigordus appelle un port très célèbre et d'une étonnante étendue.

Ce port était capable de contenir toute la flotte de Philippe - Auguste, roi de France, qui se composait, nous dit un historien, de dix-sept cents vaisseaux. Ce calcul paraît exagéré, mais l'importance du port de Damme, à cette époque, est incontestable.

Quoiqu'il en soit, la retraite des eaux de l'océan a produit des changements remarquables sur cette côte de la Flandre. Le port de Damme si fameux autrefois, se trouve maintenant à deux lieues de distance de la mer, au milieu de la terre ferme. Des ensablements ayant

rétréci par la suite, l'embouchure des canaux du Swyn ainsi que le lit de la Lieve, et fermé entièrement l'entrée du port de Damme, les Gantois se trouvèrent dans la nécessité d'abandonner ce canal. Ce fut alors qu'ils demandèrent à Charles-Quint la permission de se creuser, à leurs frais, une autre communication avec la mer (1547).

Cet illustre monarque, sentant renaître dans son cœur cet amour, ce secret penchant pour sa patrie, céda cette fois à ses sentiments généreux ; il s'empressa d'accorder à ses compatriotes de construire cette partie de l'ancien canal du Sas, depuis l'endroit nommé la Maison-Rouge, à l'extrémité de l'ancienne Pêcherie des Châtelains, jusques vers le Brakman, au Sas de Gand.

Charles après son abdication de la souveraineté des Pays-Bas, en faveur de Philippe son fils, de ce même Philippe qui bientôt devait ensanglanter un si bel héritage, voulut avant de se retirer en Espagne, donner une preuve éclatante de la satisfaction qu'il éprouvait, d'avoir procuré à sa ville natale cette nouvelle source de richesse et de prospérité. Il se rendit, en 1556, au Sas de Gand, accompagné de ses deux sœurs Éléonore et Marie, l'une douairière de France et l'autre de Hongrie, pour voir les premiers travaux d'une entreprise qu'il se plaisait à favoriser. Exemption de péage et de droits de douanes fut même accordée aux Gantois, pour les marchandises à introduire par cette voie et destinées à leur ville, en récompense des frais énormes que leur avait causés la construction de ce canal.

Mais bientôt ce privilège éprouva de l'opposition de la part des Anversois, qui objectèrent entre-autres, que cette prérogative allait froisser les intérêts commerciaux de leur ville. Leurs réclamations ne furent point écoutées et les infatigables habitants de Gand furent maintenus dans cette exemption qu'ils avaient si justement méritée.

Les Gantois ne jouirent pas longtemps du prix de tant de sacrifices ; quatre-vingt-six années s'étaient à peine écoulées depuis l'ouverture du canal du Sas, que la navigation leur en fut enlevée.

Par le traité de paix générale, conclu à Munster en Westphalie, le 30 janvier 1648, et qui mit fin aux longues et sanglantes guerres en Belgique, la fermeture de l'Escaut fut prescrite, et en même temps le territoire formant les anciens baillages de Hulst, Axel, Oostbourg, Aardenbourg et le pays de Cadsand fut détaché de la Flandre espagnole et réuni aux Provinces-Unies.

Tout ce peuple de Gand, si actif et si industriel, vit alors fuir son commerce au-delà de ce fleuve, il ne lui restait d'autre communication avec la mer que l'insignifiant canal de Bruges.

Ce canal reçut le commencement de son exécution en 1379, fut repris en 1613, et terminé enfin en 1758.

Nous allons décrire l'origine de ce canal; elle se rapporte à cette catastrophe terrible d'où naquit la longue inimitié qui régnait autrefois entre les habitants des capitales des Deux-Flandres, et qui fut la cause de ces nombreuses et déplorables dissensions qui suscitèrent entr'eux tant de guerres et de troubles.

Le comte Louis de Male, ami des plaisirs et de la magnificence, ayant dissipé les fonds publics par son faste et ses prodigalités, se vit forcé de recourir à de nouveaux subsides pour soutenir ce luxe effréné. Il se rendit donc à Gand en 1379, y fit convoquer au marché aux grains, les notables de cette ville, et là, au milieu de ces représentants du peuple, qui, par leurs lumières et leur patriotisme, s'étaient acquis l'estime de leurs concitoyens, il proposa l'établissement de nouveaux impôts. Mais les Gantois qui avaient déjà trois fois payé ses dettes, et qui, d'après leurs privilèges, ne pouvaient être taxés sans leur consentement, s'y refusèrent unanimement. Un de leurs compatriotes, nommé Gossuin Mulaert, parla ouvertement au comte et lui fit connaître « que ni Gand, ni ses dépendances, n'étaient plus disposées à lui "donner une obole pour subvenir à son faste et à ses désordres". Un pareil refus irrita le comte Louis. Il résolut d'en tirer vengeance. Il permit aux Brugeois, qui avaient toujours consenti aux propositions qu'il leur avait soumises, de creuser un canal depuis leurs murs jusqu'à la petite ville de Deynze, projet qu'ils avaient déjà conçu depuis nombre d'années.

Ils entreprirent donc les travaux de ce canal, qu'ils appelèrent ensuite la Lys méridionale, et déjà même ils les avaient poussés jusqu'à la commune de St-George, quand tout-à-coup les Gantois dont le moindre préjudice qui menaçait leur commerce, éveillait surtout l'attention et provoquait la résistance, voulant prévenir les pertes que le détour de la direction des eaux de la Lys par Deynze vers Bruges, devait inévitablement leur occasionner, réorganisèrent sous le commandement de Jean Hyoens, doyen des bateliers, la célèbre corporation des Chaperons-Blancs, et firent marcher sur St-George, un détachement de ce corps, composé des citoyens les plus braves et les plus déterminés de leur ville, pour s'opposer à l'exécution de ce canal.

Ces vaillants chaperons, ayant à leur tête Arnould de Clercq et Simon Colpaert, leurs capitaines, prirent, bannière déployée, la route de St-George et y tuèrent ou dispersèrent les pionniers de Bruges, qui travaillaient au canal. Cette expédition suspendit à jamais l'exécution du plan de la Lys méridionale.

Environ deux siècles et demi après cette opposition, les archiducs Albert et Isabelle furent envoyés par l'odieux fils de Charles-Quint, pour régner dans les Pays-Bas et pour y apaiser cette cruelle guerre civile que sa rigueur et son despotisme y avaient excitée.

Ces princes voulant ranimer le commerce des belles provinces de la Belgique, si florissant sous le règne de la maison de Bourgogne, et que cette longue suite d'années de désastres avait détruit, autorisèrent entr'autres, en 1613, les États de Flandre à creuser la partie du canal de Bruges qui s'étend depuis la ville de Gand, par la Commune d'Hansbeke, jusqu'à la Lys méridionale à la commune de St-George.

Ce ne fut qu'après la paix d'Utrecht, conclue le 11 avril 1713, que les Pays-Bas espagnols étant passés sous la domination de la branche allemande de la maison d'Autriche, l'impératrice Marie-Thérèse, à la onzième année de son règne en l'an 1751, afin de faire reflourir le commerce maritime de la Flandre, tombé en décadence depuis la malheureuse séparation des provinces du midi de leurs sœurs du nord, ordonna le creusement de cette partie du canal appelée la Coupure, se dirigeant depuis la Lys jusqu'à la porte de Bruges à Gand, et prescrivit en même temps, d'élargir et d'approfondir l'ancien canal de Bruges sur toute sa longueur, afin de procurer à la ville de Gand, par le canal d'Ostende, une ligne de communication directe avec la mer. Mais inutiles efforts ! Cette voie ne répondit point aux espérances des Gantois qui s'en étaient promis, de grands avantages. Elle n'a jamais pu porter que des bâtiments d'un faible tirant d'eau.

Telle est la description succincte du canal de Bruges. Nous allons maintenant entrer dans quelques détails sur la nature des obstacles apportés autrefois au commerce maritime de la Belgique, explications qui vont nous conduire à l'exécution du dernier projet qui vient d'être achevé par les Gantois, pour mettre en communication directe avec la mer, leur antique et opulente cité, par un des plus beaux canaux qui existent dans les Pays-Bas.

L'Autriche étant plutôt une puissance continentale qu'une puissance maritime, dépourvue de flottes, ne pouvait protéger son pavillon et devait ainsi souscrire à toutes les conditions onéreuses pour le commerce de ses sujets flamands, que lui imposèrent les États-Généraux des Provinces-Unies.

Telles étaient les stipulations du malheureux traité des Barrières de 1715 et de celui de Vienne de 1731, qui exclurent ce peuple de la navigation et du libre commerce des Indes, et qui abolirent la compagnie d'Ostende, érigée en 1723, par Charles VI. C'en était fait de nouveau du haut commerce des Provinces Belges. Tout s'anéantit avec cette compagnie.

Cet état de choses dura jusqu'au règne de l'empereur Joseph II. Ce souverain parcourant ses États en Belgique, en 1781, avait vu avec le plus vif chagrin, que la politique avait dépouillé ce beau pays des avantages du commerce maritime auquel il est si propre par sa situation géographique ainsi que par l'activité et le génie spéculatif et industriel de ses habitants. Il réclama contre ces deux honteux traités, et nommément contre cet article du traité de Munster, qui portait que les Bouches de l'Escaut fussent tenues closes du côté des Provinces-Unies.

Ce monarque ne cessa ses vives instances qu'après avoir fait annuler les traités des Barrières et de Vienne, par celui qu'il signa le 8 novembre 1785, à Fontainebleau, avec la

Hollande, sous la médiation de la France. De manière que le commerce de ses sujets belges, n'éprouva plus d'autres entraves que celles qu'y mettait la fermeture des Bouches de l'Escaut. Point sur lequel il trouva inexorable les États - Généraux de la république des Provinces-Unies. Mais l'empereur Joseph s'était déclaré le protecteur du commerce des Flamands, et il voulut le faire sortir de ses ruines et lui faire reprendre son ancienne splendeur. Il déclara donc par décret du 11 juin 1781, le port d'Ostende, Port-franc.

Malgré les grandes vues et les excellentes intentions de ce prince, voyageur et philosophe, la Belgique autrichienne, ayant à cette époque peu d'armateurs, ses relations commerciales lointaines ne furent nullement en rapport avec ses besoins ni avec ses ressources.

En résumé, six ans après l'ouverture de ce port à la libre navigation du commerce, Joseph II, ayant exécuté de grandes réformes dans ses États héréditaires allemands et hongrois, voulut étendre ses projets sur les Pays-Bas. Pressé de jouir du résultat de ses réformes, il ne pouvait se résigner à attendre ; bien qu'il ne fût en avant que de quelques années, il rencontra partout résistance et obstacles ; on se révolta (1787). Il y eut deux ans de troubles, et les troupes autrichiennes ayant évacué la Belgique, en 1789, n'y rentrèrent qu'en 1791. Mais le tenu des crises était venu ; placée en quelque sorte entre deux révolutions, celle de la Hollande et de la France, la Belgique autrichienne ne pouvait demeurer paisible, les esprits y étaient dans la plus grande agitation ; on y criait hautement à la liberté, et elle devint ainsi la conquête facile des Français, qui y furent accueillis comme des libérateurs.

Cette conquête eut lieu en 1792. Les Français évacuèrent la Belgique après la bataille de Nerwinde, en 1793, et y entrèrent de nouveau en 1794. Ce pays fut réuni à la France, en 1795, et cette incorporation confirmée par l'art. 6 du traité de paix de Campo-Formio de 1797, signé entre l'Autriche et la république française.

Les Français poursuivant le cours de leurs conquêtes, s'emparèrent de la Hollande, en 1794, et s'empresser eut de faire ouvrir l'Escaut. Par le traité de paix et d'alliance, signé à la Haye le 11 mai 1795, entre la France et la république des Provinces-Unies, cette dernière puissance dut consentir à l'ouverture de ce beau fleuve. L'Escaut n'étant plus fermé, le commerce de la Belgique pouvait reprendre son antique énergie ; un débouché immense s'offrait à ses productions agricoles et industrielles. De si belles apparences de prospérité ne se réalisèrent que faiblement.

Les deux États, la Hollande et la Belgique, enchaînés au sort de la France, partagèrent toutes les calamités de cette suite de guerres qui ont duré avec peu d'interruption pendant vingt-quatre années.

Tout le temps de ces guerres, dont il n'entre point dans notre plan de nous occuper, la France n'avait pas une marine assez formidable, elle ne pouvait lutter avec l'Angleterre, qui avait l'empire des mers. Pour l'obliger à faire la paix, elle croyait qu'il n'y avait que le blocus continental qui pût y réussir.

Napoléon, empereur des Français, par décret, daté de Berlin, le 21 novembre 1806, déclarait les Iles Britanniques en état de blocus et appliquait la saisie à toute marchandise, à tout Anglais, trouvés sur le territoire de la France, sur celui des pays qu'elle avait conquis et de ceux qui étaient sous la domination de ses alliés.

Le droit de blocus, que de son côté, s'était arrogé l'Angleterre, nuisait autant au commerce des autres nations européennes qu'il nuisait au commerce de l'Empire français.

Le commerce maritime ne se faisait plus que par licences ; des bâtiments, quoique naviguant sous pavillon et nom empruntés, se trouvaient capturés à tout instant, par des corsaires anglais ou français, et grand nombre de négociants y trouvaient leur ruine.

Le commerce a, comme toutes choses, ses périodes et ses révolutions !

La France, soumise par toutes les puissances de l'Europe, qui s'étaient coalisées contre elle, Napoléon se vit obligé, le 10 avril 1814, de descendre de ce premier trône de l'Europe, et après la chute de cet homme extraordinaire, les liens politiques, qui unissaient la Hollande et la Belgique à la France, furent rompus.

L'ancien royaume de France fut rétabli et ses frontières réduites comme elles étaient au premier janvier 1792, sauf quelques modifications du côté de la Belgique.

Les Pays-Bas, par l'art. 6 du traité de Paris, du 30 mai 1814, furent érigés en royaume, et placés sous la souveraineté de la maison d'Orange Nassau.

Ce mémorable traité, après une séparation de deux siècles, constitua ainsi en corps de nation, ces deux «branches de la grande famille, les Hollandais et les Belges, déjà unis par les liens d'estime et de fraternité. L'Europe étant fatiguée de guerres, de victoires et de calamités, on songea aux moyens d'assurer aux peuples un avenir heureux. Un congrès général fut convoqué à Vienne, en 1814—1815.

Par l'art. 1er du traité de ce congrès, du 31 mai 1815, Guillaume-Frédéric-d'Orange-Nassau, fut revêtu de la dignité royale des Pays-Bas.

Gouvernés par un prince qui encourage tout ce qui est grand et utile, les Gantois, pénétrés comme par instinct, de cet amour du commerce qui toujours les distingua, se rappelèrent les efforts constants qu'avaient faits leurs ancêtres pour se créer cette voie directe à la mer. Ils appelèrent l'attention de leur auguste souverain sur cet objet important.

Guillaume Ier entendit la voix des habitants de son industrieuse ville de Gand ; le creusement du grand canal de Gand à Neuzen fut décrété (1823).

Les travaux furent exécutés sous la surveillance et la direction supérieures de S. Exc. M. Van Doorn, conseiller-d'état, gouverneur de la Flandre orientale ; et ce fut le 18 novembre 1827, jour anniversaire de notre Reine bien-aimée, que cet habile administrateur, nommé par S. M. pour être son représentant dans cette solennité, fit l'ouverture de la nouvelle communication.

Son Exc. prononça à cette occasion, en présence des états-députés et des autorités civiles et militaires des deux provinces de la Flandre et de la Zélande et de plusieurs milliers de personnes , accourues de toutes parts pour assister à cette cérémonie , un discours dans lequel en retraçant les immenses bienfaits que les deux provinces devaient attendre des travaux considérables qui venaient d'être terminés , et en rappelant que cette nouvelle et précieuse source de prospérité ouverte à l'agriculture et au commerce , était due à la constante et paternelle sollicitude de notre monarque, il a payé un juste tribut d'éloges à MM. les Ingénieurs en chef et ordinaire , ainsi qu'à son commissaire , pour le zèle, l'activité et le talent avec lesquels chacun d'eux , dans le cercle de ses attributions , avait concouru à l'accomplissement des vues bienfaisantes de S. M.

Ce discours, entendu avec recueillement, fut suivi des cris mille fois répétés de vive le Roi ! Le passage ouvert, S. Exc. le commissaire du Roi, ainsi que les autorités civiles et militaires, s'embarquèrent à bord des bâtiments qui étaient préparés pour les recevoir, couverts de pavillons aux couleurs nationales, aux armoiries du royaume, à celles des deux provinces de la Flandre et de Zélande et d'une multitude innombrable de drapeaux de toutes couleurs et de toutes formes.

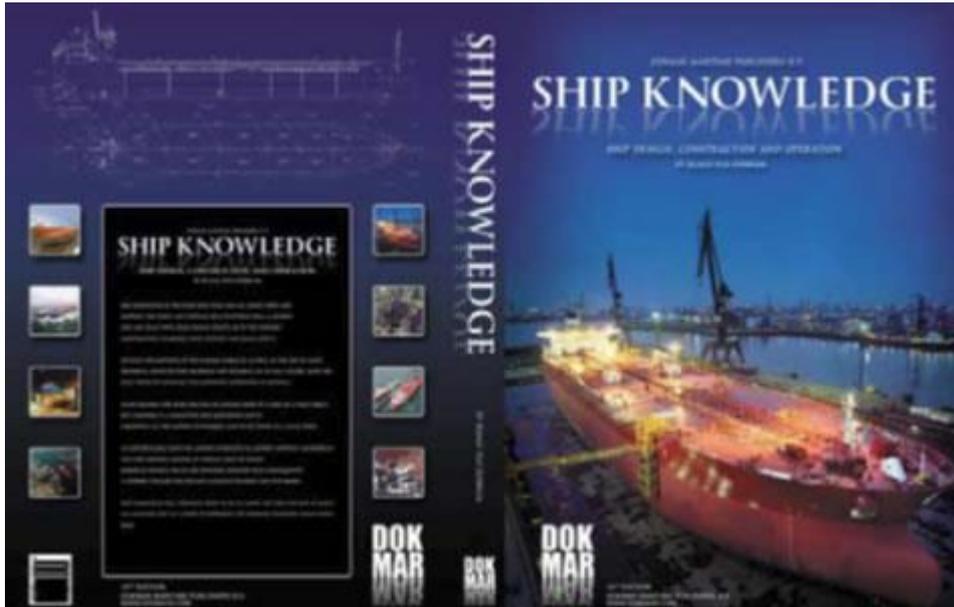
Inséré 09/06/21 BOEKEN LIVRES BOOKS Enlevé 09/07/21

Ship Knowledge – Updated edition

BOEKBESPREKING Auteur : Frank NEYTS “ ”

Dokmar Maritime Publishers BV in Holland recently issued the 10th edition of its most popular title “**Ship Knowledge**” written by **Klaas Van Dokkum**. The contents of the book has been completely updated

'**Ship Knowledge**' is the book that tells you all about ships and shipping. The parts and systems which together form a modern ship are dealt with, from design drafts up to finished construction, including paint systems and legal aspects.



Detailed description of the various subjects as well as the use of many drawings, cross-sections drawings and pictures, all in full colour, make the book perfect readable for everybody interested in shipping. After reading the book you will no longer think of a ship as

a dead object, but consider it a completely self-supporting entity embodying all the modern techniques also to be found in a small town. An indispensable book for anyone interested in modern shipping! Considering the ever growing number of foreign crew on board European vessels and in the offshore industry with consequently a growing demand for English language readers and text-books.

'**Ship Knowledge**' will certainly prove to be an asset, not only for use at nautical colleges, but as a work of reference for everyone employed afloat nowadays. "**Ship Knowlegde**" (ISBN 978 90 71500 40 4), a 432 page hardback publication costs 70.00 euro, incl. P&P. It can be bought in the specialized bookshop or direct with the publisher, Dokmar Maritime Publishers BV, PO Box 5052, 4380KB Vlissingen, The Netherlands. Phone +31(0)612.3506150, e-mail: info@dokmar.com, website www.dokmar.com

Inséré 09/06/21 DOSSIER Enlevé 09/07/21

The aft peak tank –ballast water challenges

Tanker operators are struggling to treat ballast water from the aft peak tank, as the water cannot be mixed with the main ballast cargo, so it needs a separate system and there is not much space

By Kevin J. Reynolds, managing director, oneTank



Handling ballast water in aft peak ballast tanks on tankers is a challenge. By regulation, the water can't be mixed with the cargo body ballast water, due to the risk it gets contaminated by oil from an adjacent leaking cargo tank. This would be an explosion risk. So it needs a separate ballast water treatment system.

Aft peak ballast tanks typically hold just 5 per cent

of the total ballast water volume on tankers and have a volume flow rates of around 200 cubic meters per hour.

This tank is very different than the cargo body ballast tanks that are filled and emptied in coordination with cargo operations.

The aft peak tank water is used for purposes such as cooling the stern tube bearing, dampening propeller vibration in the stern, ensuring propeller immersion. More recently it has been used as salty feedwater for electrolytic based ballast water treatment systems, where the salt is used to generate sodium hypochlorite as the ballast water disinfection chemical.

To comply with ballast water regulations, tanker operators face a choice of decommissioning this ballast water tank and losing these important functions, or installing a ballast water treatment system dedicated to the aft peak tank.

There is not usually much space available for a system near the aft peak tank. Companies will often select a smaller version of the same ballast treatment technology selected for the cargo body ballast tanks. This is not often the optimal decision in terms of arrangement, operations, or cost.

Such systems have features that are not needed when treating only the aft peak tank, for example filters for pre-treatment, which then require backflushing pumps, flow monitoring, and flow regulation.



oneTank ready for installation on a fishing vessel, the same size unit as used in tanker and bulker aft peak tanks

If the disinfection uses UV bulbs, the system additionally needs protective sleeves, careful cooling considerations, and a means of wiping or acid cleaning the sleeves.

If it uses electrolytic systems, the cells require cleaning, and the generated hydrogen gas requires dilution and venting to a safe place.

Both approaches also require a final step, either a second UV disinfection stage on discharge or a neutralization stage for the electrolytic systems.

A smaller system

My company, oneTank, has developed a low-cost, compact, easy-to-install system that is IMO BWMS certified and US Coast Guard type approved. It is designed specifically for the aft peak ballast water tank, treating tank volumes of up to 4,000m³. oneTank is intended as an add-on, complementary to the cargo body ballast water treatment system, but a smaller, simpler, and lower-cost solution.

oneTank was designed to keep the aft peak tank installation simple. There is just one assembly to install which minimizes the number of foundations and components to handle. The unit itself has a small 559 x 604 mm footprint which is very helpful in a busy and crowded engine room, particularly the lower aft engine room space near the aft peak tank. The onboard computer performs all operations automatically, including regulatory required records.

The unit requires a single 120 VAC feed at 15 amps, or 220 VAC feed at 7.5 amps, to power the onboard computer and dosing pumps.

The circulation pump creates a circulation loop from the aft peak tank through the oneTank unit and back to the aft peak tank. oneTank automatically calculates the amount of bleach needed, applies it, and measures the result.

A twenty-four hour hold period is required between the disinfection and discharge to the sea. A neutralisation process is also required before discharge to the sea, with a one hour cycle of adding sodium thiosulfate into the ballast tank. Afterwards, the system verifies that the water is ready to discharge.

The typical tanker aft peak installation requires a 120 m³/hr circulation pump. Usually, an existing general service or fire pump can perform this. Alternatively, oneTank can supply a new dedicated circulation pump.

The system is offered in a standard, off-the-shelf package for USD 65,000, which can be shipped anywhere in the world.

With some variation depending on labour rates, the installed cost of a oneTank system is estimated at USD 95,800 if using an existing pump and USD 118,000 if installing a new, dedicated pump. These estimates are as much as USD 100,000 less than some recent installations we have seen for tankers with a filter and disinfection solution.

One barrel of bleach typically costs USD200 and can treat more than 1,000m³ of ballast water, adequate for most aftpeak tanks. A 20-litre pail of neutralizer chemical typically costs USD25 and will neutralize more than 1,000m³ of ballast water.

oneTank announced in December 2020 that it had won a contract with Overseas Shipholding Group (OSG) to provide an aft peak ballast water treatment system for a tanker.

oneTank was founded by marine engineers. It builds its treatment system in its main facility in Seattle, and offers applications engineering, installation and commissioning support, and a robust spare parts and service program. The company is a wholly-owned subsidiary of marine consulting firm, Glostén.

Inséré 10/06/21 DOSSIER Enlevé 10/07/21

What MEPC75 means for tanker operators

IMO's "MEPC75" meeting in November formally agreed requirements on shipping companies to report emissions, requirements to make an assessment scheme, where a rating of 'C', if achieved by all ships, will keep the whole industry on a trajectory to meet IMO's targets. Tanker operators will be keen to know exactly what they need to do to comply with MEPC 75 – if they will be able to keep a certain vessel in compliant operation until 2030 just through slow steaming, and when they need to consider switching to LNG fuel.

But the difficulty with answering these questions is that every case is a bit different, said Tore Longva, principal consultant, regulatory affairs with DNV GL.

He was speaking at a webinar organised by DNV GL about MEPC 75 on November 26, 2020.

"You need to consult with your trusted classification society and see how they can help you with specific vessels. It depends on age, trade profile, investment willingness. There are a lot of factors playing into what is the most appropriate solution for each individual ship."

Although Mr Longva notes, "we think you can achieve 40 per cent improvement in efficiency with the toolkit we have available today. It won't always be cheap, but it can be done." In other words, we can manage until 2030 without new fuels.

"Getting to the absolute reduction levels of 2050 is a different ballgame - there we need other options."

MEPC discussions

The MEPC 75 meeting was held online over November 16-20. Because people were attending from their home countries, rather than travel to the IMO building in London, and all working in different time zones, the decision was made to restrict discussions to 3 hours a day, so 15 hours in total for the meeting.

The online format also did not allow as much interaction as usual, Mr Longva said. Many items were postponed to the next meeting (MEPC 76). Since the MEPC 75 meeting was originally planned for April 2020, it means some items are being postponed for a year. MEPC 76, planned for 2021, is also likely to be virtual, and so have a constrained agenda, and some issues may slide into MEPC 77.

A planned revision of guidelines for Exhaust Gas Cleaning Systems was pushed to MEPC 76. Correspondence groups have been established to look at licensing fuel oil suppliers, a shaft power limitation concept, and interim minimum power guidelines.

The work to agree a definition of Phase 4 of EEDI was "deprioritised". Phase 4 will apply to newbuilds of a number of ship types from 2022, and anticipated to come into force after 2025, so not considered urgent to discuss now.

Agreements at MEPC 75

At the November 2020 meeting, approval was given to the 4th IMO greenhouse gas study, by a consortium led by CE Delft, which counted emissions from shipping in 2018 of 1056 MT CO₂ equivalent, up 9.6 per cent from 2012. Methane and nitrous oxide emissions were included (and converted to a CO₂ 'equivalent' amount).

This study says that shipping's share of global emissions was calculated to be 2.89 per cent in 2018, up from 2.76 per cent in 2012.

The study says that the overall "carbon intensity" of shipping decreased by either 21 per cent or 32 per cent over the period 2008 to 2018, depending on how it is calculated – 21 per cent if calculated by "capacity mile" or based on voyages, and 32 per cent if calculated by "tonne mile" (cargo carried). Carbon intensity is a measure of how much carbon is emitted per "transport work".

If no additional policies are adopted to decarbonise, emissions are projected to end up growing by between 90 and 130 per cent by 2050, relative to 2008.

The focus of the MEPC work is to get emissions to a peak as soon as possible, and then reduce "carbon intensity" by 40 per cent by 2030, compared to 2008. (Note, 21 to 32 per cent reduction has already been achieved).

On the technical side, MEPC75 approved plans for an EEDI (Energy Efficiency Design Index) rule on existing ships, known as the "EEXI" (Energy Efficiency Existing Ship Index). This is described in more detail below.

On the operational side, it approved plans to ask shipping companies to write a "SEEMP" (Ship Energy Efficiency Management Plan), showing how they will reduce their operational emissions. It is based around a Carbon Intensity Indicator – CII. This is also described in more detail below.

"You might as well learn these acronyms, it is hard to spell them out each time," Mr Longva said.

Each member state is encouraged to develop its own national action plan, an example being Norway's Green Shipping Program.

MEPC75 considered a proposal from a number of shipping industry associations, including the International Chamber of Shipping, World Shipping Council, Intertanko and the International Parcel Tankers Association, to raise money for research and development of fuels, levied on fuel purchases.

The meeting also did not discuss plans to set GHG / carbon intensity guidelines for other fuels, also including emissions made in producing the fuels and delivering them to vessels ("well to tank"), methane slip, nitrous oxides, and emissions from VOCs.

So for now, the regulations only relate to the amount of CO2 you emit per the amount of cargo tonne miles you make.

EEXI

EEXI is what will concern tanker operators the most.

It follows EEDI, the "Energy Efficiency Design Index", which says that new ships being built over 2025 to 2030 must have a 30 per cent improvement in energy efficiency compared to a baseline, calculated as the average efficiency for ships being built between 2000 and 2010.

Under EEXI, existing tankers need to achieve a "delta", or improvement, of 15 to 20 per cent, compared to the baseline, with the same time periods as for EEDI for achieving the improvement and the base line. The delta is different for different ship types. Cruise ships and LNG carriers must get 30 per cent, gas carriers must get 20 to 30 per cent.

So this should get existing ships "on par" with what is required for new ships, under EEDI phase 2 or 3.

Ships need to comply with EEXI by early 2024. Specifically, the deadline is the "first annual, intermediate or renewal IAPP (International Air Pollution Prevention) survey after 1 Jan 2023."

So by early 2024 - all ships which are in scope need to comply with EEXI.

The index is calculated by a complex formula which takes ship's emissions, capacity and speed into account, with the speed based on that calculated in the sea trial, after the vessel was launched, or by other methods.

The way to reduce the score involving the least financial investment is probably to reduce the speed. The engine can be "de-rated", so it operates at a slower speed, or you can set a "virtual" limit on engine power, basically an agreement that you will only operate the vessel with a certain power level. You are only allowed to exceed it in an emergency.

Shipping companies need to put all of this in a technical file, which is verified and approved in the first IAPP survey after Jan 2023.

SEEMP

All ships above 400 GT need to develop a "Ship energy efficiency management plan (SEEMP), by Jan 1, 2023.

A rating system will be designed by IMO so that if all ships are C or better, by 2030 shipping will reach its 40 per cent target of improving carbon intensity.

It will probably be calculated in emissions per deadweight mile. The threshold for reaching "C" will get more stringent in time.

Cargo and cruise ships above 5000 GT need to achieve rating "C" in their Carbon Intensity Indicator, every year from 2023, their SEEMP should show their plan to achieve this.

The plan should also have a continuous improvement focus.

Any ship scoring "D" for 3 consecutive years, or an E, will need to implement corrective actions, which will be included in their SEEMP, and need to be approved, for a vessel to receive its annual statement of compliance.

Offshore vessels, passenger vessels (not cruise ships or ROPAX) will not have any index. The reason is that these vessels are very diverse, so it is very hard to calculate how one vessel compares to others in its 'class'. Although they are still required to collect and report data.

The policy will be reviewed by Jan 2026, looking at strengthening the enforcement mechanism and corrective actions.

IMO's 2050 target is that CO2 emissions should be reduced by 70 per cent compared to 2008, counted as CO2 emissions per transport work, and total GHG emissions from the industry should be reduced by 50 per cent, compared to 2008.

The company's CII may become public, since it is included on the vessel's "statement of compliance", which is a public document in many jurisdictions. This means the data may be included in the various online vessel rating schemes.

The verification and audit will be done by the organisations accredited as "recognised" by flag states – mainly the classification societies.

IMRDB

There is a proposal from industry bodies, including ICS, World Shipping Council, BIMCO and Intertanko, to set up a research fund to develop zero carbon technologies, paid for with a levy per tonne of fuel purchased, proposed at \$2 per tonne for all ships above 5,000 GT, building a purse of \$5bn over the lifetime of the program.

A full day of the MEPC 75 meeting (3 hours) was taken up by discussing this.

IMO members were talking about it as a "market based measure", although the industry had been careful not to present it as a "market based measure", saying that the money would be for research only, not to make certain fuels more viable.

There were inconclusive discussions about whether IMO could take on the responsibility of making this a legal mandate, Mr Longva said.

"IMO agreed to invite further comment, so discussion will come back in MEPC 76."

Other amendments

Other amendments made by IMO are changes to MARPOL Annex VI stating that you need to have a sampling point in your fuel system, either fitted or "designated", for inspectors to sample and verify sulphur content. This needs to be approved by the first IAPP survey after April 2023. "There's either technical or bureaucratic work to take care of," Mr Nyhus said.

There are new verification procedures for how samples are to be analysed and what kind of bandwidth is acceptable on sampling results.

Also at MEPC 75 the International Convention on the Control of Harmful Anti-fouling Systems on Ships was amended to ban the biocide cybutryne.

There was a ban on use and carriage of heavy fuel oil in the Arctic from July 1, 2024, with exemptions for tanks with a double hull, or for Arctic coastline states which want to exempt their own ships in their own waters until 2029. This was a compromise agreed with certain Arctic states to get the ban passed.

Audience

poll

Audience members were polled to find out what they anticipated their main measure would be to comply with EEXI.

21 per cent chose engine power limitation, 16 per cent retrofit energy efficiency devices, 17 per cent operational improvements, 25 per cent alternative fuels, 19 per cent said "I have not started looking into this."

DNV GL's Mr Longva noted that limiting engine power "is the simplest way of reducing EEXI to comply." He said he was surprised so many companies were considering alternative fuels – although they will be necessary to get beyond the 2030 ambitions.

"For those that haven't started looking into this - we are strongly recommending you are looking at this for your vessel. Within 3 years all vessels need to comply. That means 20-30,000 vessels need to have done calculations and possible upgrades."

Eirik Nyhus, director environment with DNV GL, added that he was expecting more votes to go to engine power limitation. "It is the easiest way to go with it."

"The fact that people are going for alternative fuels tells me that people are thinking about this in an alternative context. I think that's good."

Older vessels

Shipowners will consider whether they can get the required 30 per cent efficiency improvement by 2030 on older vessels just by reducing the speed. But this is the only way they can do it, if they are unable to use different fuels or adjust the engine to make it more efficient.

For example, companies agree to reduce the power of the engine to 70 to 80 per cent of its "maximum continuous rating" (MCR).

"At some point the speed is so slow the ship is commercially unattractive," Mr Nyhus said. "Then it becomes a commercial decision [whether to scrap]. It has some impact on older tonnage."

Other fuels

In terms of fuels other than oil, currently only LNG, LPG and methanol are included in the regulations, with a stated lower "carbon factor".

If you want to state that the vessel runs on LNG, you must have at least 50 per cent of your fuel tank capacity being LNG tanks. For methanol, it is not yet defined.

Operational improvements

Possible operational improvements shipowners can make include methods to improve efficiency of operations, including adjustments to the propeller, air lubrication under the hull, even wind power.

However this appears to only include hardware investments, not changes in how the ship is operated, such as optimising routing, speed and onboard power generation, apart from making an agreement to reduce the maximum power of the engine.

EU

Shipping companies also need to be aware of what is happening at the European Union. The 27 EU members comprise a big voting block at IMO. Also EU's own policy initiatives and regulations will impact IMO, in particular around the "European Green Deal" which aims to make Europe climate neutral by 2050, including shipping.

The EU is also considering tightening its 2030 targets for land based emissions, currently 40 per cent reduction in emission compared to 1990, to be increased to 55-60 per cent.

"It would be disingenuous to think shipping will avoid being discussed in this context," Mr Longva said.

There is a push from both the European Parliament (EP) and European Commission (EC) to include shipping in the Emission Trading Scheme (ETS), with EP saying 2022, EC saying 2024 may be more realistic. This would require shipping companies to buy carbon credits for the CO2 the vessels emit. There are disagreements on how the funds raised will be spent.

But the discussion is about "when" not "if" shipping will be included, he said.

Decisions are still ongoing about whether the ETS would apply only to the part of a voyage which is within European waters, or the whole voyage if it includes going to, or leaving, European waters.

We have seen that there are political implications of trying to levy carbon charges on transportation outside European waters, when such a scheme was introduced in aviation. "We don't know how that will play out, we expect to see more next year," Mr Nyhus said. The European Climate Law, likely to be adopted in June 2021, will be a "key vehicle" for future actions.

There will be revision of the MRV regulation, covering "monitoring, reporting and verification of carbon dioxide emissions from maritime transport." This was originally based on IMO's Fuel Oil Data Collection System (DCS) requirements, but the regulations have now diverged.

Charterers

In terms of the involvement of charterers, Mr Nyhus said that he did not anticipate they would get very involved in IMO itself. "Charterers don't have a seat at IMO other than as NonGovernmental Organisations (NGOs)".

However, there are other mechanisms where charterers are engaged, such as the Sea Cargo Charter.

"Charterers seem to be moving quite proactively these days, I don't think they will wait, to be honest," he said.

TankerOperators

Inséré 11/06/21 NIEUWS NOUVELLES Enlevé 11/07/21

Norway's Stad Ship Tunnel project

Norway's Stad Ship Tunnel project, also known as the world's first full-scale ship



tunnel, has received a green light to kick off the preparations for the construction.

Illustration: Norwegian Coastal Administration / Snøhetta

Namely, the approval came in the allocation letter from the country's Ministry of Transport and Communications to the Norwegian Coastal Administration, defining the tasks that are to be initiated.

"Based on the allocation letter, we will now start the processes of acquisition of properties in the area where the ship tunnel will be located, as well as put in place a project organization, prepare a tender basis and initiate a tender," **Terje Andreassen**, the temporary project manager for the Stad Ship Tunnel at the Norwegian Coastal Administration, said.

The allocation letter requests that the property acquisition be completed, if possible, during 2021.

The Ministry of Transport and Communications is now preparing a proposition to the Norwegian Parliament about the project, which will be presented during the spring.

As informed, NOK 75 million (\$ 8.8 million) in start-up funds has been set-aside in the state budget for 2021. The project is estimated to cost NOK 2.8 billion (excluding VAT), with a construction period of three to four years.

The goal is to sign a contractor during 2021, which will allow construction to start in 2022.

"If everything goes according to plan, the world's first full-scale ship tunnel will be completed in 2025/2026," said Andreassen.

The project will be the first ship tunnel of this size in the world. As disclosed earlier, the construction of the tunnel is to make one of the most challenging and hazardous shipping lanes in Norwegian waters safer for sea transport.

Specifically, a combination of sea currents and subsea topography creates particularly complex and unpredictable navigational conditions in the area.

Very high waves coming from different directions at the same time can create critical situations, and challenging conditions mean reduced speed and predictability for shipping through the very exposed Stadhavet Sea.

Inséré 12/06/21 NIEUWS NOUVELLES Enlevé 12/07/21

X-Press Pearl loss will add to insurers' container ship headaches

The possible total constructive loss of the **X-PRESS PEARL** stands to be the latest in a line of container ship losses for the insurance industry. There have been two explosions on board the 2,700 twenty-foot equivalent unit-capacity container ship since it initially caught fire on May 21 at anchor near the Sri Lankan port of Colombo. The fire, which had appeared to have taken hold on most of the vessel as of May 26, continued to burn on May 28, according to an update from the Sri Lanka Ports Authority, although it said the blaze "has been contained considerably. «Speaking to S&P Global Market Intelligence May 27, Martin Hall, head of marine casualty at law firm Clyde & Co., said all signs from the event point to a "total constructive loss" even if the fire is eventually extinguished and the vessel stays afloat. Rob Hawes, head of marine at loss adjuster Crawford & Co. agreed. "I can't see a situation where the vessel and its cargo [aren't] going to be a total loss," he said in an interview. Insurers will face hull and machinery, cargo and liability claims, although there is still much uncertainty about the size of the loss. The vessel itself was only three months old; it is unclear how much the hull was insured for and which company insured it.

Hawes estimated that the cargo loss could be between \$30 million and \$50 million, based on the X-Press Pearl's 2,700 container capacity and an assumption that a container houses an average of \$15,000 to \$20,000 of goods. He said he thought the loss would be spread

among a “large group” of insurers in London, Europe and Asia, and that fire and explosion losses would be covered under “pretty much every cargo insurance policy that’s out there.”

Uncertain claims picture

Marine mutual insurer The London P&I Club, confirmed in a May 26 statement that it provides specialist marine liability cover, known as protection and indemnity, or P&I, to the **X-PRESS PEARL**. As the liability insurer, it would cover crew injuries and any environmental impact. The insurer said three crew members have suffered injuries “that are not thought to be life changing.” The London P&I Club is the trading name for London Steam Ship Owners Mutual Insurance Association Ltd. and its subsidiary The London P&I Insurance Company (Europe) Ltd.

The environmental impact of the blaze could have significant bearing on the size of the P&I claim. A “serious pollution incident” could lead to the claim swelling to “potential hundreds of millions” of dollars, according to Hawes, but that this would only happen if the vessel sinks. The vessel sinking in deep water, well away from land, could be a better outcome for the P&I insurer than saving it and bringing it back into port because of the heavy clean-up costs, said Hall. “They could be in for a huge loss, or alternatively they could be in for quite a small loss,” he said. The P&I insurer could end up picking the tab for the cargo and the salvage cost. In a total loss situation, Hawes expects cargo insurers to try to recover their losses from the shipowners. The salvage team is probably working under the SCOPIC clause, which would mean they would be paid by the P&I insurer, said Hall. Salvors are usually paid from the value of what is recovered, and the SCOPIC clause ensures they are paid adequately for recovering vessels to limit environmental impacts where vessels are so damaged that they have little commercial value. A spokesman for The London P&I Club said in an email that the insurer would not speculate about the potential size of the claim.

A growing problem

The **X-PRESS PEARL**’s claim is likely to keep the persistent threat of container ship losses at the front of marine insurers’ minds. The market has already been hit this year by the grounding of the Ever Given in the Suez Canal in March. The final claims bill for that event remains under dispute. Hawes said there were concerns about the size of the vessels, stowage plans’ impact on vessel stability, dangerous goods not being declared and crew fatigue amid pandemic-fueled staff shortages. He noted that a November 2020 article by Norwegian marine mutual Gard said there had been a container ship fire every two weeks at that point in 2020. “It is a problem that is not going away,” said Hawes

Source: Platts

Inséré 13/06/21 DOSSIER Enlevé 13/07/21

BAR and Cargill - yacht technologies for wind powered tankers

BAR Technologies has a project together with Cargill to bring wind propulsion technology to tankers, building on work done for yacht racing

BAR Technologies of Portsmouth, UK, has partnered with global food corporation and tanker operator Cargill, and naval architecture firm Deltamarin of Helsinki, Finland, to bring “cutting edge wind propulsion technology” to tankers.

Cargill plans to install a bespoke wind propulsion technology, named "WindWings" by BAR Technologies, on a run of medium range (MR) product tankers by the end of 2022, followed by installations on dry bulk vessels the following year.

Wind power on merchant vessels has been increasingly discussed in recent years as the shipping sector looks to decarbonise, but so far, there has been no breakthrough solution. But before you turn to the next article, consider that the BAR in BAR Technologies stands for Ben Ainslie Racing.

Sir Ben Ainslie, a shareholder and director of BAR Technologies, can claim to be the most successful sailor in Olympic history, with golds at Sydney, Athens, Beijing & London (2000 to 2012) and silver in 1996 Atlanta.

BAR Technologies was founded to commercialise the maritime design technologies and technical skills developed by Ben Ainslie Racing, a team formed to compete in the America's Cup of 2017.

The team competed in the AC45 class of the 2011-2013 Americas Cup World Series, and the 2014 Extreme Sailing Series, where it set a multi-hull record for the Round the Island Race. They then went on to win the 2015-2016 America's Cup World Series and reached the 2017 America's Cup semi-finals.

Simon Schofield, now CTO of BAR Technologies, was chief engineer for that team.

BAR Technologies' team includes naval architects and engineers, fluid and aero dynamicists, composite and structure specialists, control and simulation engineers, with experience working in a highly competitive environment.

It leverages this skillset to deliver innovative solutions for high performance / super yachts, leisure marine, heavy marine, and renewables.

On yachts, BAR Technologies has worked with sails as big as 45m high, the approximate size it has designed for tankers. One of the key differences is that the sails for tankers will be multi-element, using solid composite materials rather than fabric and are built for longevity and robustness rather than pure performance.

BAR Technologies has also developed sophisticated weather routing applications which take wind patterns into account when planning the best route for its vessels. Its bespoke toolset ShipSEAT will also control the flying shape of the WindWings through the voyage. It has used trained neural networks to design the accompanying hull form to take most advantage of the thrust from the WindWings.

"We've spent the last 8 years predicting the performance of wings in design and on the water," Mr Schofield says of his previous career in the America's Cup). "When we talk about simulating the performance of a wing, we're comfortable with the predictions we're making."

John Cooper, CEO of BAR Technologies, is a former commercial and finance director of McLaren Racing, where he worked for 14 years on its Formula 1 racing programme. He joined BAR Technologies in October 2019. Martin Whitmarsh, chairman of BAR Technologies, is a former Team Principal at McLaren.

30 per cent CO2 reduction

On tankers, a 30 per cent reduction in carbon emissions from a tanker voyage on Cargill's normal routes is a realistic expectation, the company says. This is based on simulation of real tanker voyages in standard weather conditions with no cherry picking, and covering both the laden and ballasted legs of the voyage. This average also takes into account the negative effects of head winds, and where the WindWings are de-powered in wind conditions that are too strong to fully control leeway.

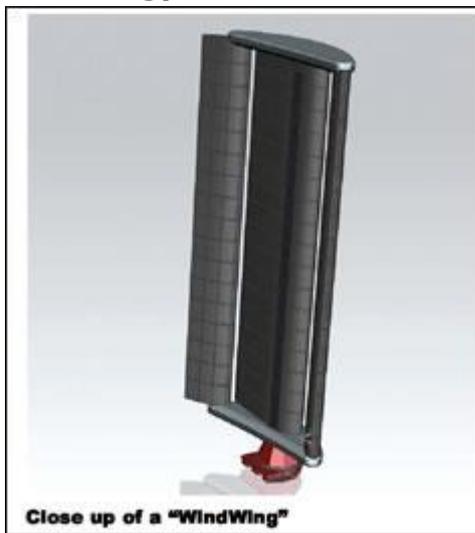
"The 30 per cent is based on solid statistical analysis," says John Cooper, CEO, BAR Technologies. "We'll simulate 450 or 500 years' worth of virtual ship voyages with differing start times and average those results."

“Even though a key motivator for owners and charterers is reducing CO2 emissions, set to be mandated in future via the IMO rules, WindWings still presents a compelling business case.”

Although he wouldn't be drawn on the exact payback time while WindWings are still in the final stages of the cost tender exercise, Mr Cooper says that the payback time of investing in the technology for tanker operators will surprise owners even when compared to relatively low heavy fuel prices, and a carbon price". "The payback period is very low, and looking to the future, will become lower when the industry switches to the more expensive zero carbon fuels, which could be \$1000 a tonne", he says.

"There are occasions with these wings, where you can theoretically turn the engine off at sea and do 13-14 knots under wind power, but of course in reality the engines will either charge or run hotel loads instead of using auxiliary gensets," says Simon Schofield, CTO of BAR Technologies.

Technology



The sail proposed for tankers, which the company calls a "WindWing", is rectangular.

The first configuration being tested involves wings 40m high, with three separate elements, a large one 10m across, and two which are 5m across, all rectangular. These three elements together act as one sail. Then there are three such sails on the ship, making for nine elements in total.

One of the biggest challenges of the project is ensuring navigator's sight lines, which the tall sails obstruct. The modern solution is to use cameras and radar. The project team is also building extending the vessel's bridge to the port and starboard, so it is possible to have a forward view which is not obstructed by sails.

The sails are designed so they are strong enough to withstand any weather conditions while upright. The sails can "feather" – spin around vertically 360 degrees. In a storm, they will align with the wind flow, and at this angle they produce very little drag.

"Part of the work we did with class was ensuring that we had considered all the [possible] environmental conditions," Mr Cooper says.

The WindWings are also designed so they can be folded down flat on deck, which would be done pre-storm. They would be folded for going under bridges, and to avoid the sails causing complexities during manoeuvres in port operations, with pilots onboard or when tugboats are used.

The folding gives the sails a structural and cost advantage over a inwardly collapsing design, which other companies had considered for wind propulsion of vessels.

"We've done computer simulation on the effect the wing has on the turning circles and minimum [engine] power requirements," Mr Schofield says.

The second challenge is ensuring structural integrity. While ships have a long history of using masts and sails, these vessels will have wings made of solid composite materials, and masts made from steel.

Fixing sails on bulk carriers has additional complications compared to tankers, because the sail assembly cannot get in the way of opening bulk carrier hatches and loading and unloading operations.

Seafarers will need a small degree of training to use the system. But all WindWings' settings will be entirely automated, so it just needs to be turned on and off.

Seafarers will also need to set the best rudder angle, but the system will also advise on the optimal action. As with any sailboat, the power of wind propulsion will depend on the angle the vessel and therefore this automation is key.

The company is looking at improved hull designs together with naval architect firm Deltamarin, because with wind power, the vessel slides sideways as well as goes forward, "With minor manipulations to the hull you can provide better efficiency," Mr Schofield says. BAR Technologies designs the wind propulsion system and controlling software in house.

Cargill project



The project with Cargill and Deltamarin was announced in October 2020 although the parties had been working together for a period prior to the announcement.

"Through this partnership, we will bring bespoke wind solutions to customers who are actively

seeking to reduce CO2 emissions from their supply chain," said Jan Dieleman, president of Cargill's Ocean Transportation business in a press release quote.

"With the WindWings technology, Cargill will be able to offer customers a solution that improves vessel efficiency, independent of the fuel or type of engine used." As of January 2020, the project is being assessed for a class Approval In Principle (AIP) process. Mr Cooper is unable to reveal the name of the class society involved due to confidentiality agreements, but says they are "well known for wind propulsion systems".

One oil and gas company and another big tanker company have participated in the workshops, but Mr Cooper is unable to reveal their names at this point, as they wish to make a separate announcement regarding them becoming a full participant in the project.

Inséré 15/06/21 NIEUWS NOUVELLES Enlevé 15/07/21

Reders halen slag thuis: wijziging scheepvaartwetboek goedgekeurd

De Kamer keurde het voorstel goed tot wijziging van het Belgisch Scheepvaartwetboek. Diverse stakeholders zijn misnoegd over die wijziging en voorspellen het einde van verschillende goederenstromen.

Enkele weken geleden werd een ontwerp ingediend tot wijziging van het Belgisch Scheepvaartwetboek, dat amper een half jaar van kracht was. Donderdagavond laat keurde de plenaire zitting van de Kamer het voorstel goed, ondanks de diverse protesten tegen het voorstel. Er waren opvallend veel onthoudingen bij de stemming (52), maar met

85 stemmen voor en amper 1 stem tegen werd de wijziging zonder opmerking aangenomen.

Misnoegd

Hoewel een groot deel van de wijzigingen nuttige correcties zijn met als doel enkele fouten in het wetboek recht te zetten, werden er ook een aantal artikels fundamenteel inhoudelijk gewijzigd. Om die reden keerden een aantal belangengroepen, zoals de Vereniging van Transportverzekeraars (BVT) en FORWARD, zich radicaal tegen het voorstel. Enkele dagen geleden sloten ook UNIZO en VBO zich aan bij dat standpunt. Het kwam zelfs tot een aantal persoonlijke brieven aan minister Vincent Van Quickenborne om de stemming uit te stellen en het ontwerp te heroverwegen. Last minute werd zelfs nog een nieuw aangepast voorstel uitgewerkt op vraag van een aantal belangengroepen maar uiteindelijk werd de tekst van het ontwerp ongewijzigd goedgekeurd door de Kamer.

Ook prof. Van Hooydonk, die als voorzitter van COMAR (Commissie Maritiem Recht) het Belgisch Scheepvaartwetboek heeft voorbereid, sprak zich deze week openlijk uit tegen het wijzigingsontwerp.

Naast de inhoudelijke bezwaren hekelen de belangengroepen ook de manier waarop de wijziging tot stand is gekomen. BVT betreurde dat blijkbaar alleen de Koninklijke Redersvereniging geraadpleegd werd over de wijzigingen, die nochtans grote nadelige gevolgen kunnen hebben voor de hele sector.

Onevenwicht

Hoewel de discussie draait om enkele artikels, is de impact van deze inhoudelijke wijzigingen mogelijk erg groot. De diverse belangengroepen wezen op het feit dat het bestaande delicate evenwicht uit het Belgisch Scheepvaartwetboek tussen de reders enerzijds en de lading anderzijds, ernstig wordt verstoord in het voordeel van de zeevervoerders.

Zo zal het voor eindontvangers van lading die in België aankomt in veel gevallen niet meer mogelijk zijn om hun vordering in te dienen voor een Belgische rechtbank. Ze zullen hun vordering moeten indienen bij de rechtbank of arbitrage-instelling volgens de bepalingen uit de vervoersovereenkomst (Singapore en Londen zijn daarbij geen uitzonderingen). Zeker voor kleinere spelers en KMO's is dat een moeilijke uitdaging.

Ook is het de ladingbelangen niet meer toegestaan zijn om voor hun beschadigde lading een uitvoerend beslag te leggen op het schip. Dat is onder de huidige versie van het Belgisch Scheepvaartwetboek wel mogelijk. Bewarend beslag voor ladingschade blijft wel nog mogelijk.

Effect op goederenstromen

Het valt af te wachten wat de economische effecten zullen zijn voor de goederenstromen die via de Belgische havens lopen. Volgens een aantal stakeholders betekent dit het einde van de Belgische havens omdat ontvangers van lading hierdoor sterk benadeeld worden. Ook bestaat er altijd de mogelijkheid dat de rechters die de wet zullen moeten toepassen, de wijzigingen op een creatieve manier zullen interpreteren met het oog op de huidige polemiek.

De Belgische reders zijn ongetwijfeld opgetogen met de stemming. Volgens de reders wordt België juist aantrekkelijker voor rederijen om ons land aan te lopen omdat mogelijke ladingclaims zullen worden beslecht door de rechtbank (of arbitrage-instelling) van de keuze van de rederij en omdat ze voor ladingschade nu geen uitvoerend beslag meer riskeren in België op hun schepen.

Inmiddels hebben een aantal belangengroepen ook aangekondigd dat zij verder ten strijde trekken tegen de wijziging en zullen proberen om de wijziging ongedaan te maken.

Pleziervaart en autonome vaart

Naast de bewuste inhoudelijke wijzigingen – die in totaal maar een tiental artikels betreffen – werden ook een aantal correcties uitgevoerd en nieuwe bepalingen opgenomen over pleziervaart (Boek 5). Het deel over de pleziervaart is een loutere integratie van de bestaande wetgeving in een nieuw Boek 5 van het Belgisch Scheepvaartwetboek. Over die bepalingen waren er geen fundamentele bezwaren uit de sector.

Philippe Van Dijck / FLOWS

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Inséré 17/06/21 HISTORIEK HISTORIQUE Enlevé 17/07/21

Horacio Nelson (I)

Chatham, England, 1771. A raw March wind blew white-caps across the harbor and splashed the piers with spray. Sails flogged and tavern signs creaked. An officer of the Royal Navy was walking along the waterfront when a youngster approached him. The boy was neat despite his plain clothes, and he projected an air of quiet self-assurance. He did not ask for money, as the officer had expected him to. He had a sea bag over his shoulder, and he wanted directions. Where could he find the *Raisonnable*? And how could he get out to her?

His Majesty's ship of the line *Raisonnable* lay in the Medway River estuary, along with other warships that had recently been recommissioned. The youngster confided that he not only knew the name of the *Raisonnable*'s commander, Captain Maurice Suckling, but he was, in fact, Suckling's nephew. He was reporting for duty as a midshipman.

The Naval officer was acquainted with Captain Suckling. He escorted the lad to his own lodgings, gave him some food and hot tea, and then arranged for a boat to take him out to the *Raisonnable*. No doubt he forgot the incident, as well as the boy's name. He would remember it later, though, when this slender child became the most famous fighting admiral in the Royal Navy—or the entire world, for that matter.

Horatio Nelson was 12 years old when he became a midshipman. He was the son of a genteel but impecunious upcountry pastor who had been left a widower with eight children to care for. What had stimulated the enlistment of young Horace, as the family called him, was an account in the local newspaper to the effect that the ship of the line *Raisonnable* was being readied for combat in view of a likely war with Spain. Her captain would be Maurice Suckling. The youth had persuaded his father to write to Uncle Maurice, who had replied: "What has poor Horace done, who is so weak, that he above all the rest should be sent to rough it out at sea? But let him come; and the first time we go into action, a cannon-ball may knock off his head, and provide for him at once."

The *Raisonnable* had been captured from the French after a fierce battle 12 years earlier, during the Seven Years' War. The Royal Navy had followed the usual proud custom of retaining the ship's French name; it was good for morale to keep everyone mindful of ships captured from the enemy, and unlucky to change the name in any case. The Seven Years' War had ended in 1763, and the Admiralty had decommissioned the *Raisonnable*, along with many other vessels. Officers were placed on half pay and the crew dispersed. Now in 1770 came a new threat of war and from a most unlikely corner of the globe: the barren Falkland Islands, some 200 miles out in the Atlantic off the tip of South America.

Spain claimed the Islands. So did Great Britain, which for a number of years had maintained a marine detachment and a settlers' outpost in the Falklands to secure its claim. Suddenly in June of 1770 a large Spanish force sent from Buenos Aires descended

on the handful of British colonists at Port Egmont, the British Falklands settlement, and attacked and occupied the place. It was four months before anyone in England learned about this little flurry in the South Atlantic; then the news triggered a wave of national indignation. England had been the world's dominant power ever since the Treaty of Paris in 1763 had ended the Seven Years' War. For the first time it could be said that the sun never set on the British Empire, an empire that owed its existence largely to Britain's mastery of the seas. The very thought of a Spanish landing party humbling His Majesty's subjects was more than Britons could bear.

To make matters infinitely worse, after the news reached Britain, the Spaniards behaved in an astonishing manner. Confronted by demands for restitution, Spain's King Charles III equivocated, meanwhile turning to Britain's old enemy, France, for an alliance. Charles' behavior triggered an outburst of war fever in England. Ships of the line were recommissioned; officers were recalled to duty; crews were rounded up.

As it happened, the Falkland Islands dispute evaporated after a few months. France's King Louis XV had no appetite for another war with England so soon, and Spain, left on its own, quickly capitulated, yielding the Falklands to Britain in 1771. England's war fever cooled as swiftly as it had risen. Young Midshipman Nelson had spent barely five months aboard the *Raisonnable* before she was decommissioned.

Nelson's uncle managed to find him a job as apprentice to the captain of a merchantman sailing to the West Indies. That experience almost cost England its admiral-to-be.

Merchant seamen detested the Royal Navy—for its forced recruiting, for its brutal discipline, for its miserable food and quarters, above all for its risks of danger, disfigurement and death. Young and impressionable, Horatio listened with mounting anger and apprehension to his shipmates' horror stories about the Navy and its callous officers. After a year aboard the merchantman, Nelson related afterward, he returned home with a hatred for the Royal Navy.

It took many long talks and all of Uncle Maurice' persuasive powers to restore the 14-year-old Nelson's faith in Naval service. But at last he agreed to resume his midshipman's training, and in July 1772, Suckling arranged for a berth aboard the 74-gun *Triumph*, stationed as a guard ship at the Nore, the sandbank at the mouth of the Thames.

It was fortuitous that Uncle Maurice salvaged his nephew for the Navy. Although few Englishmen realized it at the time, the Falkland Islands incident signaled a crucial turning point for England, and particularly for the Royal Navy. It was the beginning of the greatest challenge to Britain's command of the seas since the Spanish Armada almost two centuries before. The challenge would continue and grow in intensity for the better part of four decades. Within a few years, an infuriating, but relatively minor, threat would come during the American Revolutionary War; but the major crisis would occur in European waters as France and Spain joined forces during the Napoleonic Wars in an attempt to destroy the Royal Navy. At the height of the challenge, England would be threatened with invasion, defeat and occupation by the looming power of Napoleon Bonaparte.

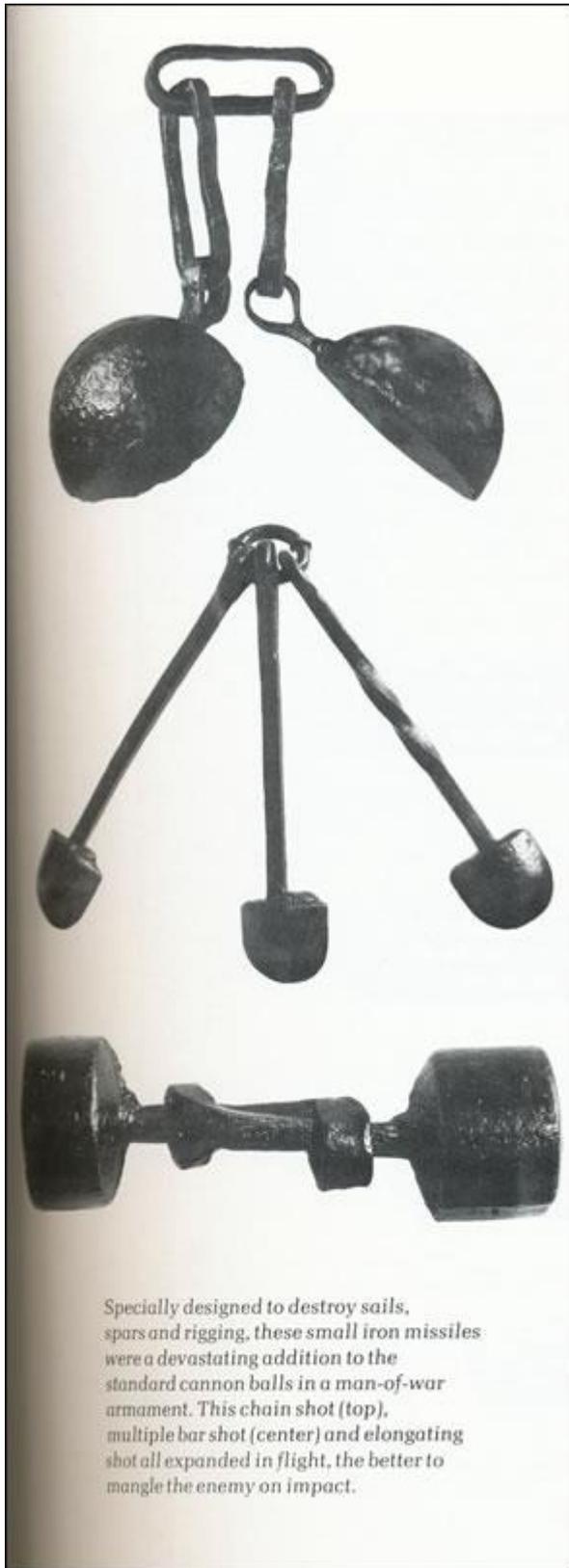
And who, in this time of terrible ordeal, would turn out to be Britain's chief protector, indeed, its savior? The Little midshipman of 1771, the sensitive youth who at first had quailed at the harshness of Navy life, the reluctant boy now learning the ropes aboard a patrol ship rocking back and forth along a coastal sandbank.

In those desperate days, England's ultimate defense was the Royal Navy—"the wooden-walls of England," as it was so proudly called. And it was the confrontation between the Royal Navy and the burgeoning fleets of France and Spain that precipitated the greatest and most awesome Age of Fighting Sail. Though scarcely 35 years in duration, from the first impudent challenge in the Falkland Islands to the climactic Battle of Trafalgar in 1805, it was a period of titanic clashes, of death and destruction at sea, of boundlessly brave sailors and brilliant, though sometimes foolhardy, tacticians and strategists. If Horatio Nelson's name was to become the most conspicuous in the international pantheon of naval heroes, there were others almost as lustrous: Rodney, Jervis, Troubridge and Collingwood, Broussin, Villeneuve, Gravina and John Paul Jones—not to mention a landbound genius

named John Clerk, who devised, as an exercise on paper, the revolutionary naval maneuvers that ultimately secured victory for England.

Those few years of fierce struggle saw as well the perfection of the sailing warship, bristling with scores of cannon and billowing with acres of canvas. From the time of Alfred the Great every English monarch could muster a fleet of ships. Yet not until the reign of King Henry VIII could these collections of vessels be called a permanent fighting navy. In earlier days, ships were used mainly to ferry armies, and when battles were fought at sea, the soldiers boarded the enemy and fought on his decks. It was Henry VIII's 1,000-ton Great Harry, with her massive bronze guns, that first symbolized England's sea power. The vessel was the greatest of the Tudor monarch's "great shippes" and had the distinction of being the prototype of the modern, as opposed to the medieval, man-of-war. But only during the 18th Century were sailing ships truly perfected as weapons in themselves. The ship's wheel, which activated pulleys to move the rudder, replaced the clumsy deck-wide sweep of the old-fashioned tiller, and provided greater maneuverability in battle. Copper-sheathed hulls were developed to retard the marine growth that had fouled and slowed the older wooden vessels. The first use of copper sheathing on the hull was nearly disastrous because of the corroding action that caused the iron hull fastenings to fall out. In short order, copper bolts were substituted for the iron ones.

As the state of the art progressed, the high fore-and-aft castles of yesteryear were eliminated; with a lower center of gravity, vessels could raise more sail for greater speed. Moreover, the sails themselves were vastly improved; triangular fore-and-aft jibs at the bow and staysails between the masts helped warships sail closer to the wind than had been possible with nothing but square sails. Even the motive power of the square sails was enhanced by the addition of studding sails (pronounced and often spelled "stuns'les"), which could be extended from the yardarm of the traditional sail. Under full sail a large warship might mount as many as 36 sails and surge through the water at a speed of 10 knots.



Specially designed to destroy sails, spars and rigging, these small iron missiles were a devastating addition to the standard cannon balls in a man-of-war armament. This chain shot (top), multiple bar shot (center) and elongating shot all expanded in flight, the better to mangle the enemy on impact.

The most telling refinement in the 18th Century warship could be found belowdecks: row upon row of deadly cannon. A 200-foot-long ship of the line, mounting over 100 guns in three tiers of its massive hull, could fire half a ton of devastation, each cannon ball as big as a man's head, in a single broadside. It could also let loose clouds of grapeshot the size of musket balls, screaming tangles of chain, rockets, red-hot cannon balls and bowling storms of nails and assorted razor-edged funk. Nothing then known to man could match the murderous firepower of a fully armed, well-fought ship of the line.

These engines of destruction were made even more formidable by their method of fighting, as signified by their name: "ships of the line." They were warships powerful enough to fight in the great line of battle in major fleet actions. The ultimate weapon at sea, at least from the Royal Navy's viewpoint, was the battle formation of these ships of the line, perhaps a dozen of them sailing single file, bowsprit to sternpost, all bearing down past the enemy, firing as they came and concentrating all their withering impact on their targets. On the Royal Navy's six-stage rating scale for warships only first-, second- and third-rated vessels mounting between 120 and 64 guns in their main armament qualified as ships of the line.

In their dramatic and unprecedented battles, these mighty war machines were employed as part of an elaborate orchestration to outwit, outmaneuver and overcome the enemy fleet. In the early days of naval warfare, individual captains tended to command their ships in battle more or less as they saw fit. As fleets grew larger, this method resulted in great thundering melees that no commander could begin to control. In 1653 the British Admiralty issued a set of Fighting Instructions, designed to bring order out of this confusion and thereby to greatly increase the fleet's efficiency. These Fighting Instructions

decreed a "line of battle" in which each vessel followed a cable's length (200 yards) behind the other, all acting on the commanding admiral's signaled orders. Under no circumstances could a captain strike off to fight on his own. These stringently enforced tactics had won the Royal Navy some notable victories against Spain and France during the incessant wars of the early and mid-18th Century.

But now times were changing and the Royal Navy found itself forced to adopt radical new methods in order to meet the challenge of the enemy's improved ships and firepower. And providentially, a new system of communication—a signaling method using a reformed set of flags—was developed during the height of the challenge. The result was a series of sea

battles, fought in the West Indies and off the North American coast, in the Mediterranean and off England's own shores, of an intensity and dévastation never seen before.

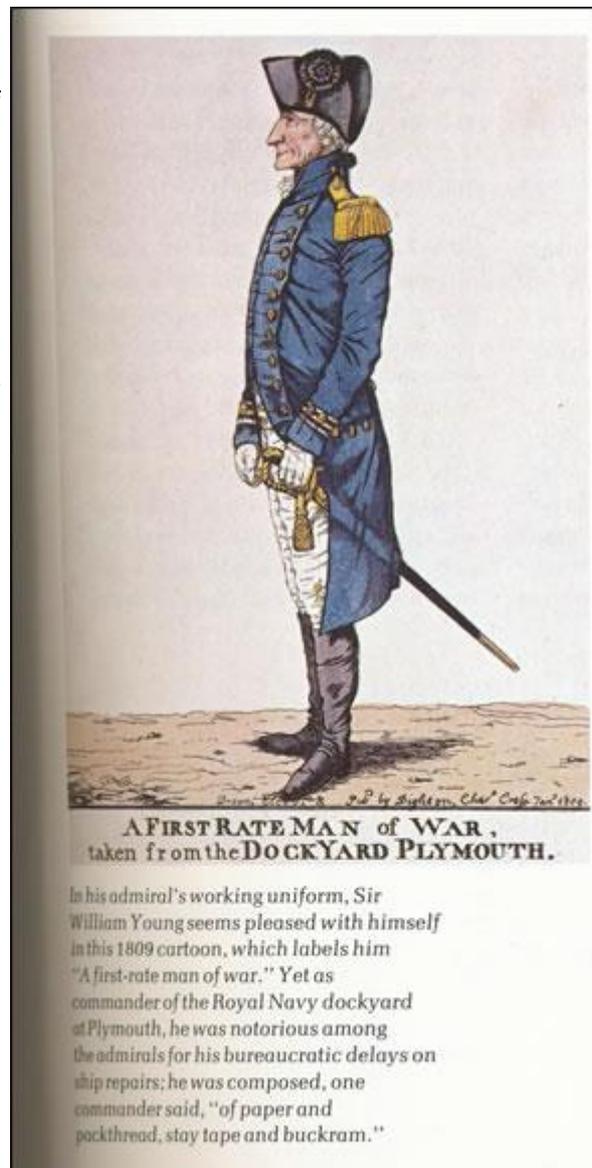
The 18th Century ship of the line, ponderous and powerful yet seemingly light and graceful as it moved, all sails set to the lift of the wind and sea, was among man's most splendid creations. The classic example of the ship of the line was the Victory (pages 17-19), fifth in a succession of ships named Victory starting in the 16th Century with Sir John Hawkins' flagship in the battle against the Spanish Armada. The fifth Victory was laid down in 1759 and launched in 1765, but peacetime economies delayed her commissioning for another 13 years. She was lying idle at her mooring at Chatham on the March day in 1771 when young Horatio Nelson reported for duty aboard the Raisonnable nearby, and from her deck he could study the ship that would one day wear his flag.

English shipbuilders followed more or less traditional construction procedures, and the Victory resembled most of the other first-rate ships of the line. The major difference was that she was somewhat bigger than her sisters, and her superior sailing qualities were the result of better design and the fact that she could sail closer to the wind than most other three-deckers. These attributes made her a favorite with admirals entitled to have flagships.

To anyone approaching by boat, the Victory loomed out of the water like a huge wooden building, and indeed her ornate stem with its three rows of gilt-edged windows gave her the appearance of a floating palace.

The quarter-deck occupied nearly half the uppermost deck of the vessel, from the mainmast aft. This deck was the province of the ship's 49 officers—as was the Victory's entire stem. In the sharply stratified society of an 18th Century warship, no ordinary seaman was permitted on the quarter-deck—or anywhere else aft—unless summoned there or required to perform some specific duty. The province of the ordinary crewman was the top gun deck, the forecastle (or fo'c's'le, as it was called) and the gun decks below. As crowded as a London Blum and often as evil-smelling, this area offered none of the amenities enjoyed by the officers. The men endured it because they had to—and because life aboard a man-of-war was in some ways better than the brutal existence to which the poor were universally condemned during the 18th Century.

The men slept, ate and, if they were gunners, spent virtually every waking moment beside the monster 24- and 32-pounder cannon on the two lower gun decks. At night the men not standing watch unrolled their hammocks, hung them from hooks attached to the overhead beams and slept swinging over the guns. By day they ate from wooden boards slung from the beams, leaning their backs against the cannon. The decks were cramped and confined, the overhead beams less than six feet from the decking, and the only windows through which natural light and fresh air could enter were the gunports.



The manger at the forward end of the lower gun deck served both as a bulwark against the seas that leaked in through the anchor hawseholes at the bow and as a cage for the live animals shipped aboard to provide fresh meat for the admiral and his officers. The larger animals—cows, goats and sheep—were securely penned. But chickens, ducks and an occasional pig often managed to escape from the manger and roam through the deck, fouling it like a barnyard. Being but a few feet above the water line, the lower gun deck was a noisome place on a stormy day at sea, with the gunports closed, water sloshing through the manger forward, livestock littering the deck and nearly 600 wet and dirty men crowded together in the stinking dark.

A crewman's life was just as harsh and hazardous as his quarters were cramped, airless and uncomfortable. The man-of-war's day at sea commenced at dawn. With the shriek of the boatswain's pipe and the cry "Ail hands!" the boatswain's mates went through the lower gun deck, flicking knotted ropes at the hard outlines in the hammocks. Those seamen who did not tumble out at once were dumped onto the deck. In short order, spurred on by more stings of the knotted ropes—this encouragement was called "starting"—the men dressed, then lashed their hammocks and headed topside. There was a way of lashing the hammocks and looping the ropes seven times around the heavy canvas, and the boatswain's mates made sure each man did it correctly. The hammocks were then stowed in special nettings along the upper deck's bulwarks, where, in battle, they provided extra protection against small shot and could also be used as life preservers if anyone fell overboard; a welllashed hammock could float for several hours.

Once on deck, the men were immediately put to work washing down the decks and scraping them smooth of splinters with holystones, so named because the smaller of these sandstone scrapers were the size of a prayer book. The deck was sprinkled with sand: the sand helped scour the surface, but it also cut into the bare knees of the men, who had rolled up their trousers to conserve the precious clothing.

At 6 a.m. the boatswain's pipe shrilled again and the men took their first meal of the day, usually "burgoo," a gruel of water and oatmeal, washed down with Scotch coffee, a bitter concoction made of burned biscuit dissolved in hot water.

Food on an 18th Century man-of-war was usually adequate in quantity, but miserably short on quality. The main meal of the day came at noon and often consisted of salt pork or beef, biscuits, a pease pudding, beer and occasionally, butter and cheese. Hearty and not wholly unappetizing—until the later stages of a patrol when the salt beef became so hard that it could be carved into mahogany-colored trinkets and the cheese was filled with long red worms. As for the biscuits, they were not so bad when infested with maggots; this was only the first stage of decay. The maggots did not deter a hungry man. In fact, they were regarded with a certain relish. As one midshipman described them, they were "very cold when you eat them, like calf's foot jelly." But later, when the weevils took over, the biscuits crumbled into powder and lost all their nourishment. At this point, the men would eat the ship's rats—if they could catch them. The rats were wryly known as "millers" because of the white coats the animals got from spending much of their time in the flour; a large, neatly skinned rat was a much-appreciated item to a hungry tar.

It was this noon meal that, perhaps more than anything else, pointed up the double standard of the Royal Navy. While the men at their swing-ing tables on the lower gun deck were eating—and sometimes gagging over—their humble fare, the officers in their wardroom, and the captain and admiral in their dining cabins, were served, as available, roast beef or lamb freshly butchered and fine wines.

The men, however, would not have preferred the officers' wine to the beverage that followed dinner and made their day: grog. The fifer struck up a jolly tune and a selected man from each mess took a tub up on deck that a mate filled with a ration of rum and water; some men gave it an extra little zip by mixing in the lemon juice they were issued for its scurvy-preventing Vitamin C. Each sailor's grog portion was strong enough, and copious enough, to bring the drinker to the edge at least of happy inebriation.

After grog the men not on watch were permitted to nap and loaf around the gun decks and the forecastle. The men on watch had to stick to their posts and keep their wits about them; any slight sign of drunkenness could result in a severe flogging for dereliction of duty.

The night watches were the hardest, especially when the ship was in cold, stormy seas. These watches ran four hours—8 p.m. to midnight, midnight to 4 a.m., and so on—and they could be torture for men dressed as inadequately as the average seaman was. Their clothes were usually of canvas and cotton, and there were no snug peacoats or greatcoats: the Royal Navy did not issue uniforms until the mid-19th Century.

The most brutal part of an 18th Century seaman's life was the punishment that was inflicted for even the smallest breach of the Navy's many regulations. For a minor crime such as excessive swearing a man was put in the leg irons on the exposed top gun deck. He was kept in a sitting position, with his hands secured behind him, and remained so until the captain released him.

The floggings were far worse. Punishment hour was traditionally 11 a.m. The shriek of the boatswain's pipe and a roll of drums summoned all hands to the top gun deck to see the edifying spectacle. On the quarter-deck stood the officers, in formal dress and wearing their swords. Before them stood the master-at-arms, several sturdy boatswain's mates and, guarded by a pair of quartermasters, the manacled sailor who was to be punished. The captain asked the malefactor if he had anything to say for himself. He usually did not. "Strip," the captain ordered. The man removed his shirt. "Seize him up," the captain commanded. The quartermasters tied the man's hands to a pair of gratings. "Seized up, sir," they reported. The captain then read the appropriate passage in the Articles of War, as all those present respectfully removed their bats. He then turned to the boatswain's mate: "Do your duty."

At that, the mate pulled out the knotted cord cat-o'-nine-tails, drew back and laid on the first stroke with all his strength, grunting from the effort. The first lash left a pattern of livid red welts along the man's back. The next few lashes cut more deeply, and a dozen lashes turned the flesh into a pulpy, dripping mass. Now, between each stroke, the mate ran the cat's tails between his fingers to clear away the blood, flicking it onto the deck. A powerful boatswain's mate liked to brag that he could lay on the second dozen lashes as heavily as the first, but often a second mate was substituted just to make sure. A veteran seaman also boasted about how many lashes he could endure without screaming. Some sadistic captains ordered 100 lashes or more. No man could remain stoic in the face of that torture; not many men even survived the ordeal.



The uniforms and even a bit of the spirit of the Royal Navy's officers and seamen are captured in this 1799 series of aquatints by the famed illustrator and caricaturist Thomas Rowlandson. White Rowlandson put a flattering face on most of the crewmen, he could not resist mocking "Old Nipcheese," the parsimonious purser.

To be followed

Inséré 17/06/21 BOEKEN LIVRES BOOKS Enlevé 17/07/21

The NI launches new edition of Stowaways by Sea

Stowaways are an age-old problem for shipping, but the threats they pose and the potential consequences and costs of stowaways getting on board have increased greatly in recent years.

This popular, practical guide in The Nautical Institute's Maritime Security Suite has been comprehensively updated to take account of changes in legislation and official guidance.

In clear, straightforward language, Steven Jones MNI takes us through the security basics of preventing illegal boarding and describes safe ways of apprehending, searching, recording, reporting and accommodating stowaways. The reader is shown how to fingerprint and photograph individuals while respecting their human rights. Quick reference guides set out the responsibilities of the various parties involved in a stowaway incident.

The new edition includes additional case studies, which can be used as the basis for toolbox talks. They explain migrant smugglers' tactics and highlight lessons to be learned from recent incidents.

Since *Stowaways by Sea* was first published, the maritime security environment has changed significantly. In particular, the rescue of migrants has become a major challenge for shipping, especially in the Mediterranean. This new edition includes an extended and updated section on safely managing migrants rescued at sea.

Mindful of evolving health risks posed to crews by unauthorised persons on board, guidance has also been included on the precautions to take against infectious disease.

Capt Yves Vandeborn FNI, Director of Loss Prevention at The Standard Club, notes in the Foreword:

Despite better ship security and pre-departure searches over the past decade, the number of stowaways shows no sign of abating. The growing and sometimes tragic use of ro-ro containers by people smugglers, and continuing migrant and refugee flows worldwide, means the problem is here to stay.

Capt Vandeborn emphasises the importance of ships contacting their P&I club when stowaways are discovered. He concludes: "All masters and shore staff should have a copy of this book."

Inséré 19/06/21 DOSSIER Enlevé 19/07/21

Bunker disputes and shipboard fuel treatment



The NORDTIGER receiving bunkers at Singapore Eastern anchorage as spotted last Wednesday whilst hull cleaning is in progress at the stern.

Shipboard fuel treatment and documenting the treatment procedures on board is of ultimate importance in dealing with bunker issues and disputes. Skuld has experienced that bunker disputes can be very costly and time consuming for both the member and the club. The best way to prevent bunker issues and disputes is by way of proper fuel treatment on board and good documentation practice.

It may not come as a surprise, but there has been a general increase in bunker quality disputes in relation to VLSFOs in the wake of the 2020 Sulphur Cap. This is due to the characteristics of the VLSFO fuel oils and incorrect/poor handling of the fuel on board. We are much grateful to Walter Dekkers, Bunker (technical) consultant at Van Ameyde Marine, for sharing his experience and providing his loss prevention advice on this topic.

Looking at it from the bunker disputes' perspective, it is vital that the owners, managers or operators concerned take the necessary steps to secure their legal position. Ideally, if all precautions have been taken, damage and subsequent disputes may be avoided, or at least they cannot be attributed to lack of or mismanagement in fuel treatment onboard.

Let's consider the actions which may prevent operational issues and time-consuming disputes in relation to fuel treatment on board. Different stages and types of fuel treatment can be distinguished:

Storage

Cleaning (settling, purifying and filtering)

Storage

Proper fuel storage arrangements on board the vessel can make all the difference. Even on-spec fuels may cause problems if tanks and fuel lines aren't clean, if fuels aren't properly segregated, and if fuel temperatures are too high or too low.

In case of a dispute, it is paramount that the storage conditions can be proven; accurate documentation of all the measures in place is key.

Vessels may carry different types of fuels: distillates only, or e.g. a combination of HSFO, VLSFO, ULSFO, diesel or gasoil. Each fuel grade must be strictly separated by suitable tank arrangements and piping.

But even different bunker deliveries of the same grade must be stored in separate tanks; especially today as VLSFO consists of different blend components. The widely differing

VLSFO properties, such as density and viscosity, as well as others, may well result in compatibility issues when these basic rules are not followed.

Another concern is the much shorter 'shelf-life' of VLSFOs during which the fuel remains homogenous and stable, compared to the traditional residual HFOs. This is not only due to the (complex) nature of blends but is also closely related to the storage temperature, which may cause thermal stress.

Marine residual fuels need heating to lower the viscosity. The temperatures needed depend on the fuel's characteristics, but also its location in the vessel's fuel system. Recommended temperatures in the storage tank, settling or service tank, separator or at the engine all differ. Apart from training and knowledge, it is important that the engineers, in order to know the fuel characteristics, have the analysis results readily available.

However, when using VLSFOs two other properties are important as well: cold flow properties and stability. All these properties can come in conflict:

Many VLSFOs have a relatively low viscosity and don't need much heating.

However, the cold flow properties may require higher temperatures, and this may in turn harm the VLSFOs' stability when stored for a longer period of time.

There are a variety of tests in relation to cold flow properties, but only one is part of ISO8217 standard: the pour point. The pour point is the temperature at which the fuel no longer flows. To avoid this, heating is required, but prolonged storage at high temperatures will destabilise the fuel, one of the results of which is the formation of sludge (= asphaltene precipitation).

To avoid thermal stress a fuel in the storage tank should not be heated excessively: it only needs to be transferred to the settling tank. We are still in a learning curve as far as VLSFOs are concerned, but it seems that 'the rule of thumb' of +10°C above the pour point, generally used for residual HFOs, is no longer enough in some cases. A waxy fuel is better kept at a temperature of +15°/+20°C above pour point. Special attention should be paid to double bottom storage tanks and low sea temperatures (in wintertime). We have seen VLSFOs with a very high WAT – 'wax appearance temperature' – the temperature at which wax crystals are formed. These fuels should preferably be avoided (we would advise a maximum of 50°C). Experience shows that the WAT can be substantially higher than the pour point, compared to what we usually see with distillates (cloud point versus pour point).

The same goes for VLSFOs close to the Total Sediment Potential (TSP) limit upon delivery, so between 0.07% m/m and 0.1% m/m in case the fuel has a high WAT as well. Unfortunately, the WAT test is not part of the ISO8217 standard; table 2 specifications.

As far as storage is concerned, best practice comes down to:

1. up-to-date fuel management procedures
2. dedicated tanks and systems per fuel grade
3. no mixing of different bunker deliveries
4. receive bunkers in empty tanks
5. maintain a temperature of minimum 15°C/20°C above pour point in case of 'waxy fuel'
6. avoid VLSFOs with high wax appearance temperatures (stay below 50°C)
7. avoid VLSFOs close to or on the TSP limit
8. minimise storage time of VLSFOs, in view of the shorter 'shelf life'
9. avoid heating the fuel more than absolutely necessary to avoid disruption of stability reserve (minimize thermal ageing)
10. Cleaning fuel (settling, purifying and filtering)

There's no avoiding the reception of dirty fuel. This is why fuel tanks must be opened up, inspected and cleaned to remove any sludge on a regular basis (incl. cat-fines).

Settling and service tanks must also be checked frequently for water, sediments and solids at the bottom drains, preferably on every watch. Experience shows that the ship's

engineers focus mainly on the settling tank, which, at the correct temperature, is indeed a first stage to remove any unwanted water and solids, but the service tank should not be forgotten. In both tanks the fuel viscosity must be low enough to facilitate the solids and water to settle down to the bottom of the tank, hence proper heating is important.

Removal of water is of great importance to avoid microbiological infection causing sludge formation, but to date not many VLSFOs have suffered from this despite the lower viscosity of VLSFOs consisting largely of distillates. A vital component for ensuring that the fuel that is pumped into the engines is clean, is the separator. A separator acts as a centrifuge, removing sludge, such as water, asphaltenes, metals, tar, rust, sand, etc. We distinguish the conventional purifier and clarifier, and the more modern automatic separator. The various settings are of utmost importance. The purifier needs the correct gravity disc depending on density. The separator bowl is discharged at a set interval or automatically at regular intervals, removing water and solids (purifier). The sludge outlet should be regularly checked and adjustments on settings made when required.

Suffice to say that separators too must be maintained and cleaned at intervals laid down in the manufacturer's manual, or more often depending on the fuel's properties. To check the separator's cleaning efficiency, 'before' and 'after' samples may be taken for analysis.

Research has shown that the best practice rules for separators are a low viscosity fuel in the cleaning process – i.e. higher temperatures – in combination with low flow rates: the more time the fuel spends in the separator, the cleaner it will be.

In order to meet the engine's fuel consumption it is, therefore, recommended to run two separators in parallel. In general, the separation temperatures should be 60°C (20-40cSt), 70°C (40-50cSt), 80-85°C (50-80cSt) and 98°C (>80cSt). Yet the correct temperature ultimately depends on the VLSFO's properties, including WAT.

It will come as no surprise that filters too are indispensable. Separators do the heavy lifting, but they cannot remove all unwanted particles: a cleaning efficiency of 80% is considered good. Filters also need cleaning and replacing due to normal wear as well as caused by cleaning activities and detergents. When in doubt, replace! Most vessels use self-cleaning filter systems. The automatic cleaning system is based on back flushing: the fuel flow is reversed to remove contaminants from the filter surface. These systems are generally fitted with a counter to keep score of the flush cycles, and this is a good indicator to recognize 'dirty' fuel. To keep larger cat-fines away from the engine it is recommended to use a 10-micron filter immediately before the inlet of the fuel injection pumps. This is the final safety catch!

Summary

The main actions to be taken can be summarised as follows:

1. thoroughly document fuel treatment and storage management
2. clean and maintain tanks, separators and filters at regular intervals
3. watch out for potentially instable VSLFO with poor cold flow properties
4. adjust temperatures to match fuel characteristics at the different locations in the system
5. operate separators in pairs; in series or parallel depending on the circumstances
6. Proper shipboard fuel treatment means avoiding damage and, in its wake, expensive disputes. And, documenting - shipboard fuel treatment secures the legal position should a dispute arise. When in doubt, contact an independent bunker consultant or your P&I Club, Skuld.

Source: Skuld

Inséré 20/06/21 DOSSIER Enlevé 20/07/21

Piracy Alert Gulf of Guinea update February 2021 circular

Our circular published in May 2020 promoted the awareness about the dangers and risks associated with piracy in the Gulf of Guinea. Since our last circular, we have seen a significant increase in the number of violent attacks, some of which resulted in the loss of lives of seafarers. With this updated circular, MS Amlin wishes to alert shipowners and charterers about the dangers of piracy in the Gulf of Guinea by providing information and practical recommendations.

Gulf of Guinea

According to the recent annual report of the International Maritime Bureau's Piracy Reporting Centre (IMB), the Gulf of Guinea hit a record with 130 crew kidnappings in 22 separate incidents in 2020 (source: ICC Commercial Crime Services). About 95% of all reported maritime kidnapping cases worldwide have taken place in the Gulf of Guinea. Unfortunately, the first months of 2021 do not show any signs of improvement. Already in January several notable attacks and violent kidnappings were reported.

The IMB report notes that incidents in the Gulf of Guinea are particularly dangerous as the majority of the perpetrators were equipped with guns. Until a couple of years ago cargo theft seemed to be the main driver for piracy, but nowadays we are seeing a shift towards violent kidnapping of crew members with the objective to demand a ransom. The kidnapped crewmembers are consequently taken deep into the jungle where they are held hostage for months until ransom is paid. The conditions in the camps are severe, resulting in sickness or sometimes even death. The issue of piracy in the Gulf of Guinea used to be significantly different from, for example, the Horn of Africa, where most attacks take place in international waters where vessels can be protected by the international community. Within the Gulf of Guinea, however, many attacks occur near the coast and the responsibility to deal with an act of piracy within territorial waters rests with the coastal state. Previous years have shown that the pirates are now able to operate further from shore, as incidents have been reported to take place at 200 nautical miles from the coastline. As a result, the international community has been alerted and initiatives to protect vessels have been initiated such as, for example, the pilot case of the EU's Coordinated Maritime Presences (CMP) concept (source: European Council).

Precautionary measures

MS Amlin advises ship operators, masters and mariners to remain vigilant and stay cautious when operating in the Gulf of Guinea. As the subject matter is far too extensive to be covered in full within this circular, we recommend following and implementing the Best Management Practices for West Africa (BMP-WA), which aim to help ships plan their voyage and to detect, avoid and report attacks.

In summary, the following precautionary measures should be taken.

Voyage planning and risk assessment

It is essential that a detailed security assessment is completed before each voyage to or within the region. A security assessment should include at least:

- The IMB advises ship operators to stay at least 250 nm offshore in West Africa and wait until a safe anchorage or dock is available to load and unload cargo.
- The ship's characteristics/vulnerabilities/inherent capabilities to withstand the threat.
- The ship's and company's procedures (drills, watch rosters, chain of command, decision making processes etc.).
- Availability of Secure Anchorage Areas (SAA), Security Escort Vessels (SEV) and co-operation with military.

Crew training

Crew members should be made aware of the threats, risks and consequences of the voyage in any risk area. Before departure, the crew should be briefed on how to implement and use the vessel protection measures. In addition, regular drills should be conducted as training in a safe environment gives crew members valuable hands on experience and the confidence needed in a real emergency.

Information security

In order to prevent information about the vessel, her location, cargo and crew from falling into the wrong hands, communication with external parties should be kept to a minimum. The crew should be reminded of the dangers of posting voyage related information on social media.

Vessel protection measures

The BMP-WA contains very detailed guidance on vessel protection measures against attacks. It is recommended that the following measures are implemented or installed on board the vessel:

- A proper lookout can help to identify any threats at an early stage, allowing the crew to deploy other defences in good time.
- Physical barriers, such as razor wire, which prevents persons from boarding the vessel.
- Water or foam spray, which delays people in their attempt to board the vessel.
- Enhanced bridge protection, such as bars, steel plates and blast resistant film on windows, which reduces the risk of injury to the crew due to fragmentation.
- Citadel and safe muster points for the crew.

Privately armed security personnel

The last decade demonstrated that the use of Privately Contracted Armed Security Personnel (PCASP) on board vessels has proven to be an effective measure in protecting the safety of seafarers and deferring attacks from pirates in high-risk areas. Nevertheless, the decision to deploy PCASP's should not be treated lightly and will be guided by certain requirements.

Unlike the Somalian pirate attacks in the Indian Ocean, the attacks in the Gulf of Guinea often take place on vessels entering or leaving ports, or at anchor within the territorial waters. National laws of these coastal states do not permit foreign security guards to carry firearms on board merchant vessels. Therefore, shipowners must rely on local security force, for example the local navy forces.

If a shipowner wishes to have armed guards on board his vessel in an area which does not allow PCASP, all non-local armed guards must disembark the vessel and be replaced with local security personnel when the vessel is entering territorial waters. To make use of such local security guards, a ship owner can either rely on a local agent with direct links to the military or police within that country, or engage the services of an intermediary.

The carriage of firearms is a complex legal issue and is still prohibited by some flag states, although a number of flag states are in the process of amending their laws in order to allow the practice of PCASP on board vessels. MS Amlin neither dismisses nor promotes the use of services of PCASP, but would rather emphasise that the decision whether to resort to the services of such companies lies solely with the shipowner.

Accordingly, we recommend shipowners to consult their flag states when considering the services of PCASP, as well as contacting the coastal states of the territorial waters to be entered before embarking on the voyage.

Quote

"The Gulf of Guinea accounts for over 95% of global crew kidnappings"

Unquote

Contracts and clauses

In order to protect the contractual position of shipowners with regards to voyages going through or to a high risk area, we advise incorporating specific "piracy clauses" in charter parties.

BIMCO has created specialist Piracy Clauses for time charter parties, consecutive voyage charters/COAs, and single voyage charters. These clauses allow shipowners to deviate from the contractual voyage, as they are not obliged to continue to or through any port, place, area or zone which, in the reasonable judgment of the master/owner, is dangerous due to any actual, threatened or reported piracy or violent robbery. In the event that the vessel is at a location that meanwhile becomes dangerous, the vessel shall be at liberty to leave it.

Where Privately Contracted Armed Security Personnel are employed on board a vessel, we recommend the use of contracts recognised by the industry, such as the GUARDCON, which can be found on the website of BIMCO via this link or requested from our Client Services Desk.

Conclusion and recommendations

In principle, all states have universal jurisdiction on the high seas and are thus allowed to seize pirate ships and arrest pirates on board. However, the same does not apply to piracy within territorial waters where the coastal state has exclusive jurisdiction. This region of West Africa remains a high risk area and there is still a long way to go before a satisfactory state of security can be established. Protection by local law enforcement, such as naval forces, remains limited and assistance is not always available. Therefore, it is of utmost importance that shipowners take precautionary measures to protect their vessels and their crew when transiting through the Gulf of Guinea. Consequently, we advise shipowners to closely follow the Best Management Practices for West Africa. Furthermore, the use of PCASP has been effective but not always allowed under both flag state and coastal state law. Therefore, approval from the authorities has to be obtained before entering the area.

Quote

"It is of utmost importance that shipowners take precautionary measures to protect their vessels and their crew when transiting through the Gulf of Guinea."

Unquote

Inséré 21/06/21 NIEUWS NOUVELLES Enlevé 21/07/21

Baggergroep DEME vervolgd voor corruptie in Rusland

DEME zou meer dan 8 miljoen euro smeergeld hebben betaald om van 2014 tot en met 2017 baggerwerken te mogen uitvoeren rond de haven van Sabetta in de Siberische Noordpoolregio.

By : LARS BOVÉ

Het parket van Oost-Vlaanderen wil de baggergroep DEME voor de correctionele rechtbank brengen voor een miljoenen corruptie rond een contract in Rusland. Dat vernam De Tijd en bevestigt DEME. Het gerechtelijk onderzoek gaat over een groot Russisch contract dat DEME afsnoopte van zijn Belgische concurrent Jan De Nul. DEME mocht tussen 2014 en

2017 baggerwerken uitvoeren voor de aanleg van een toegangskanaal naar de haven van Sabetta in de Siberische Noordpoolregio. Die haven is de uitvalsbasis van de Yamal-terminal, een van de grootste voor vloeibaar aardgas (Ing) ter wereld.

De essentie

Het parket van Oost-Vlaanderen wil DEME voor de strafrechter brengen na een onderzoek dat in 2016 is opgestart met info van concurrent Jan De Nul. De zaak draait rond een groot Russisch contract dat DEME afsnoopte van Jan De Nul.

Het onderzoek bracht aan het licht dat DEME meer dan 8 miljoen euro smeergeld betaalde aan twee mensen die betrokken waren bij de toekenning van het contract. DEME en Dredging International hebben nog bijkomend onderzoek gevraagd Het Russisch staatsbedrijf dat verantwoordelijk voor het project was, had de toekenning van de contracten aan onderaannemers uitbesteed aan het Russische USK Most. Dat bedrijf kondigde in november 2013 een openbare aanbesteding aan. Zowel Jan De Nul als DEME dong mee naar het contract. USK Most moest alle biedingen vertrouwelijk houden om de openbare aanbesteding correct te laten verlopen. Maar dat draaide anders uit. Het bedrijf sloot al in december 2012 een contract met een Belgische consultant van Bulgaarse origine om het baggercontract te helpen begeleiden. De vrouw was tot kort daarvoor lang in loondienst bij DEME geweest. Ze spreekt vlot Russisch en was voor Dredging International bevoegd voor de regio Rusland en Oost-Europa. Hoewel ze sinds september 2012 als zelfstandige werkte, bleef de vrouw DEME bijstaan om contracten binnen te halen in Rusland en Oost-Europa. Haar in 2011 opgerichte Belgische consultancyvennootschap sloot daarover zelfs een samenwerkingscontract met DEME in juni 2012. Voor de baggergroep moest ze dus proberen het contract in Sabetta in de wacht te slepen, tegelijk mocht ze van de Russen mee oordelen wie het contract zou krijgen.

Mister X

In maart 2014 kwam het belangenconflict aan het licht. Toen bezocht de Russische voorzitter van de raad die het contract zou toekennen Jan De Nul en DEME in ons land. Bij Jan De Nul kwam de voorzitter te weten dat de vrouw een dubbel petje droeg. Een maand later, op 11 april 2014, kreeg Jan De Nul te horen dat DEME de werken mocht uitvoeren. Concurrent Jan De Nul trok zelf uit op onderzoek. Het kon de hand leggen op e-mailverkeer tussen toplui van DEME en een consultant die de Russische aanbesteding hielp begeleiden. Daarop trok Jan De Nul uit op onderzoek. Het kon de hand leggen op e-mailverkeer tussen de consultant en toplui van DEME. De mails waren verstuurd tussen oktober 2013 en november 2014. In sommige mails polste de vrouw via welke persoonlijke mailadressen ze officieus kon communiceren over het baggercontract met de toenmalige topman van DEME, Alain Bernard, en met de verantwoordelijke voor Oost-Europa, Dirk Poppe. In andere mails stond ook vertrouwelijke info over de concurrerende bieding.

Jan De Nul kon zelf ook achterhalen dat de Belgische vennootschap van de consultant van eind 2012 tot eind 2013 ruim 175.000 euro had gekregen van DEME. Terwijl de vennootschap ook geld had gekregen van USK Most. Met die info trok Jan De Nul in september 2016 naar het gerecht van Oost-Vlaanderen. Via huiszoekingen, bankgegevens en nog veel meer onderschepte e-mails ontdekte het gerecht dat de consultant én een verantwoordelijke bij USK Most elk nog liefst 4,188 miljoen euro smeergeld hadden gekregen van DEME. De meer dan 8 miljoen euro zou zijn uitbetaald in verschillende schijven zodra het contract was toegekend aan DEME. Dat gebeurde onder andere vanuit een vennootschap in Cyprus naar twee Bulgaarse bedrijven, tussen juni 2014 en februari 2018. Er zou ook geld zijn witgewassen via een schermvennootschap in Panama en via een Zwitserse bankrekening. De transacties stonden beschreven in de mails die het gerecht onderschepte, soms met schuilnamen zoals 'Mister X'.

Verder onderzoek

De woordvoester van DEME, Vicky Cosemans, bevestigt aan De Tijd dat het parket van Oost-Vlaanderen DEME en zijn belangrijkste bedrijf Dredging International wil laten doorverwijzen naar de correctionele rechtbank. 'Het parket heeft eind december 2020 enkele vennootschappen en personeelsleden van de DEME-groep opgeroepen om voor de raadkamer te verschijnen', zegt Cosemans. 'Maar zowel DEME, Dredging International als één personeelslid heeft uitvoerige bijkomende onderzoeksmaatregelen gevorderd bij de bevoegde onderzoeksrechter. Ze zijn van oordeel dat belangrijke elementen à décharge verder onderzocht moeten worden. Daarom werd de zitting van de raadkamer voor onbepaalde tijd uitgesteld.'

'Ik wil benadrukken dat de raadkamer geen uitspraak doet over de grond van de zaak. Ze oordeelt alleen over de vraag of er voldoende bezwaren zijn om een zaak ten gronde te laten beoordelen door de bevoegde rechter. DEME behoudt het volste vertrouwen in het verdere verloop van de procedure.' Het parket van Oost-Vlaanderen wil nog geen commentaar geven.

bron : De Tijd

Inséré 22/06/21 NIEUWS NOUVELLES Enlevé 22/07/21

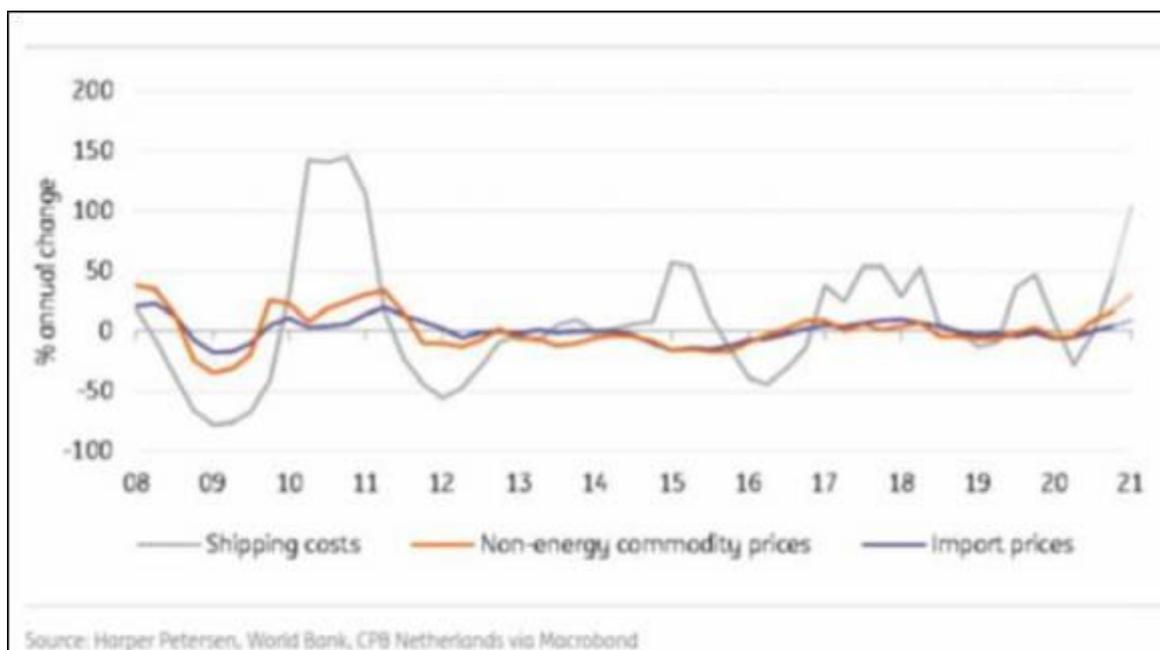
Container and shipping shortage piles pressure on prices

The rapid recovery of the global economy that started at the end of the first wave has come with a much faster rebound in global trade than initially expected. This has come with significant supply chain disruptions causing many different types of shortages that have plagued the manufacturing sector over the winter months. Longer supply lead times have been the result and input prices have jumped. So how long will the different disruptions last and what impact will they have on consumer prices?

Impact of shipping disruption on inflation will be sizeable this year

The rapid comeback of world trade has caused demand for shipping and containers to unexpectedly surge after the first wave of the coronavirus ended. With blank sailings – the cancelled sailings of freight ships – still elevated and with containers in high demand, input supply lead times have increased, inventories have fallen dramatically and freight rates soared towards the end of 2020. The Harpex shipping costs index suggests an increase of 200% since the start of the pandemic, around a quarter of which has taken place this year. While we don't expect the complete increase in freight rates to be passed through to the consumer, the supply chain disruptions are expected to have an upward effect on consumer prices, which will of course mainly be concentrated on the cost of imported goods. The impact thus far has been modest, as producer prices globally have only risen slightly and remain very weak by historical standards.

Trade cost measures have been trending up over the course of the pandemic



Looking at the import intensity of consumption and the pass-through of previous rises in transport costs to inflation in the US, UK and eurozone, we estimate that the impact of the shipping disruption and container shortages on inflation will be sizeable in these advanced economies, at roughly 0.3 to 0.4 percentage points.

Semiconductor shortages start to have more consumer effects

One of the key disruptions impacting consumer electronics and car manufacturing at the moment is the shortage of computer chips. In part due to the same issue that causes container demand to spike – the rapid recovery of demand for (semi-)durable goods – semiconductor demand increased rapidly over recent months. But demand is being supported by other longer-term factors, such as the rollout of 5G which is boosting demand for new mobile phones, and the electrification of vehicles increasing demand for computer chips.

Chip shortages have started to cause production disruptions, most notably in the auto industry. Due to just-in-time production, the auto industry had cancelled orders for chips during the first wave, resulting in chip production capacity shifting away from auto. The resulting production hiccups led to a decline in automotive output in January in the euro area. It is not just the car industry that has started to notice the impact though. Big console and mobile phone makers have experienced production cuts due to the shortages as well. Given that there is a more structural component to the strong demand behind the semiconductor shortage, and that it takes time for new production capacity to be added, this supply problem is unlikely to be resolved anytime soon. We don't expect significant relief before the second half of the year and even then it is unlikely to be the end of demand outpacing supply in this industry. The impact on inflation is hard to predict at the moment as semiconductor prices themselves have not spiked. Still, delayed supply could start to impact prices while demand continues to be high for consumer electronics and automobiles. It's not just semiconductors that are problematic in terms of availability. The surge in demand for goods during the pandemic, coupled with supply disruptions, has also caused shortages of other inputs. Think of raw materials like copper which have seen prices surge on the back of Covid-19 related supply disruptions over 2020 along with robust demand from China. Similarly, prices of agricultural commodities have been boosted by strong Chinese buying over much of the last year.

This is visible in non-energy commodity prices that have surged over the course of the pandemic towards annual increases that are the highest seen since 2011. This is starting

to cause input prices to increase further for goods producers, and the prices of imported goods in the CPI will eventually reflect the steep rises on international markets.

Pass-through from import prices to consumer prices is typically gradual, as importers, wholesalers and retailers are insulated to an extent by contracts and hedging. There will also be an effort to absorb the rises within margins to retain competitiveness, though the scope to do so may be limited by other rising costs.

While the effects may show up gradually, the rise in raw materials prices which we've seen up to now imply sustained pressure on consumer prices. Given the different shares of imports within household consumption in the different countries, we expect the impact on inflation to be particularly strong in the eurozone and UK, with a slightly smaller impact in the US. However, we think that further upside in non-energy commodity prices will likely be limited given that Covid-19 supply disruptions are easing, along with the expectation that the impressive post-Covid-19 commodities' demand growth seen from China will likely slow. The Suez Canal blockage has ended sooner than expected and traffic can now slowly restart again. This will have ripple effects on world trade as it will increase delays in an already stretched global supply chain and perhaps cause new bottlenecks at ports that do not have the capacity to host all incoming ships at once. Nevertheless, the impact should not be overdrawn and the impact on inflation will likely be negligible.

The pandemic shortages will push up inflation temporarily

The inflation impact of the supply chain ripples is definitely sizeable. In the US we're estimating an impact of around 1 percentage point and in the eurozone and UK, it will be higher at around 1.5%. Most shortages and supply chain problems are still directly relatable to a halt in production during the first wave of the virus and the quick return of demand for goods. The impact is therefore likely temporary but for a sustained period, partially lasting into 2022. Once supply and demand are more in sync again, elevated price pressures are set to fade. Still, the longer that upward pressure on imported goods prices persists, the greater the risk of second-round effects which could lead central banks to take action. For now, our base case remains that trade disruptions will not be acted upon by central banks.

Source: ING

Inséré 23/06/21 DOSSIER Enlevé 23/07/21

FUELSAVE – dynamic hydrogen + methanol injection to improve engine efficiency

FUELSAVE GmbH of Germany has developed a technology which injects hydrogen, oxygen, water & methanol into the engine in a specific way. The company claims to reduce OPEX costs by 10% – and has done a successful trial on a heavy lift vessel.

FUELSAVE GmbH of Walldorf, Germany, has developed FS MARINE+ to improve the thermal & volumetric efficiency of an engine by dynamically injecting hydrogen, oxygen, water & methanol into it.

To understand one part of how it works, consider how you can make a campfire burn more strongly by blowing on it.

The fire already has access to air but by being able to condition the combustion by optimizing the air/fuel ratio for an optimized stoichiometric mix makes a big difference to how it burns, and the temperature of the combustion flame, i.e. with more oxygen available.

Similarly, on a ship engine, it is possible to make the engine fuel burn cleaner and more efficiently, by changing the conditions.

By adding hydrogen, the gases entering the engine have a higher energetic state and will ignite earlier without the risk of knocking. The hydrogen & oxygen acts as a catalyst for the combustion of the main fuel, not a fuel source itself.

By adding oxygen, you make the gases burn better, but also hotter, which increases certain emissions, such as NO_x emissions.

If you also add liquid methanol, it will extract heat from the engine as it evaporates, cooling the combustion, countering the increased temperature from adding oxygen & hydrogen. This will counteract the formation of NO_x emissions while you still get the benefit of the cleaner, more efficient combustion. The cooler air will also be denser, so it increases the efficiency of the turbocharger and increases the thermal and volumetric efficiency of the engine.

The cleaner combustion with less soot & deposits, as reported by the engine service company and the customer, in turn, means that the wear on the engine is reduced for the same amount of 'work' as well as a longer lube-oil lifetime.

The fuel-saving effect is something similar as it happens with "premium fuels" available for your car, which achieve the required combustion pressure in the cylinder for ignition, with less fuel being used than with less good quality fuels. Therefore, you can achieve the same power output with less primary fuel.

By using the optimum amounts of hydrogen, oxygen, water, and methanol injected in different locations of the ship engine, FUELSAVE has shown on the MV Annette 25% in gross savings in primary fuel and over 16% in NET cost savings from the achieved fuel economies, while the company claims an average Co₂ reduction to be around 8-15%.

It has also reduced particulate emissions by 40 per cent, reduced NO_x by 30 to 80 per cent, reduced engine wear by 50 percent, and reduced lube oil costs by 33 percent.

It means that the investment in the system on a tanker can make a payback in 2-3 years, the company says.

Also, having the system means it may be possible to replace some of your primary fuel with an alcohol distillate / methanol, which may be less expensive and is currently available in 90% of the top 100 major ports.

The system may have additional benefits if the vessel is running on biofuel, which can emit 60 per cent more NO_x than conventional fuels, the company says.

But there does need to be careful modelling of the combustion process to work out how much hydrogen, oxygen, and liquid methanol to inject.

The injection process is called "dynamic load-based injection" and the overall process is called "combustion conditioning".

The hydrogen is generated on-site by electrolysing water.

The inventor of the technology, Dirk Hoffmann, who currently serves as CTO, originally conceived the idea as a way to make truck engines more efficient with hydrogen and ethanol injections and has been working on the technology for the last 15 years.

Commercial arrangement

The biggest areas of capital expenditure are the methanol tank, the electrolyzers, control cabinets, and a water treatment system.

FUELSAVE prices its technology and service based on the aim to ensure companies get a return on their investment within three years. It is so confident in the financial benefits that it is willing to sign contracts with tanker operators that guarantee a certain level of return on investment.

Due to the capital costs of the equipment, this ROI is easier to achieve the more hours per year the engine is running, and the more fuel is being consumed by an engine. Another possible business model is to lease the equipment to a customer, with capital costs paid for by companies & funds seeking to make an environmentally friendly investment. It

means the shipping company has no CAPEX. "This is something we hope we see more in the future," says Marc Sima, CEO, and co-founder of FUELSAVE.

FUELSAVE started to commercialize the technology for 4 stroke engines and will validate the technology as well on a testbench in 2021 with the latest generation dual fuel slow speed 2 stroke engine.

Implementation

The system is packaged as a retrofit solution, which can be installed by a team of 3 people over 3 weeks, including while the vessel is sailing.

It needs about 24 hours when the engine is not operating to connect the system to the engine, which can be done in a port or on anchorage, Mr. Sima says.

The liquid methanol is stored in a separate tank, which might be easier to install in a dry dock but is possible to install as well under voyage.

FUELSAVE would work together with the engine manufacturer on the project implementation, to help do a risk assessment for that particular engine, as well as to provide engine manufacturer approval and result validation.

SAL Heavy Lift project

So far, the technology has not been tested in tankers, but it has been used for 2.5 years on a heavy lift vessel with a 4-stroke engine. The vessel, MV Annette, is operated by German shipping company SAL Heavy Lift, part of the Harren and Partner group SAL had temporary approval from DNV GL for the project, as the solution featured a non-permanent storage tank for the pilot phase. After its successful completion, FUELSAVE was awarded a Eur 5M contract to install the system on 6 ships with 93 MW combined engine power.

The performance of MV Annette's engine and the findings was thoroughly analysed by class (DNV GL inspectors) as well as the engine service company (Carl Baguhn Hamburg), Castrol, and the customer SAL Heavy Lift

FUELSAVE has secured EU funding to test out the system on a 2-stroke engine and has a test bench slot with one of the world's largest engine manufacturers. Additionally, the company has an LOI from "one of the world's largest independent container ship operators," to deploy the FS MARINE+ solution on a 70MW slow speed 2 stroke main engine, Mr. Sima says.

Letter of appreciation

A "letter of appreciation" from a SAL engineer to FUELSAVE is published on its website, stating that the system ran for around 4,000 hours on MV Annette between May 2016 and March 2018, and achieved 25 per cent gross fuel savings.

Chief engineer Janusz Rut states: "From the vessel side, the handling and attendance of the plant was easy and not bothersome. The service needful was limited to the minimum. The big screen gave an excellent view on all parameters.

"The engine condition: The engine examination carried out by the Carl Baguhn Company revealed that the engine components (piston, piston rings and charge air cooler) are much cleaner than usually. That was confirmed at the end of the test by the endoscope inspection.

"Lube oil running hours: As a result of the engine examination, it was decided to extend running hours of the lubricating oil. The samples were sent regularly every 250 hours for analysis and proved the oil running hours may be extended till almost 2000 hours.

"Air pollution: it is well known that not 100 per cent of the injected fuel is burned inside engine's cylinder. The hydrogen plant increases this value significantly giving cleaner exhaust gas and less primary fuel consumption.

"Summarise the hydrogen & methanol injection solution which was installed on MV Annette is worth consideration as future solution for an air pollution reduction giving the profit for the owner at the same time."

Inséré 25/06/21 BOEKEN LIVRES BOOKS Enlevé 25/07/21

LES COMPAGNIES DES INDES

Éditeur : Gallimard

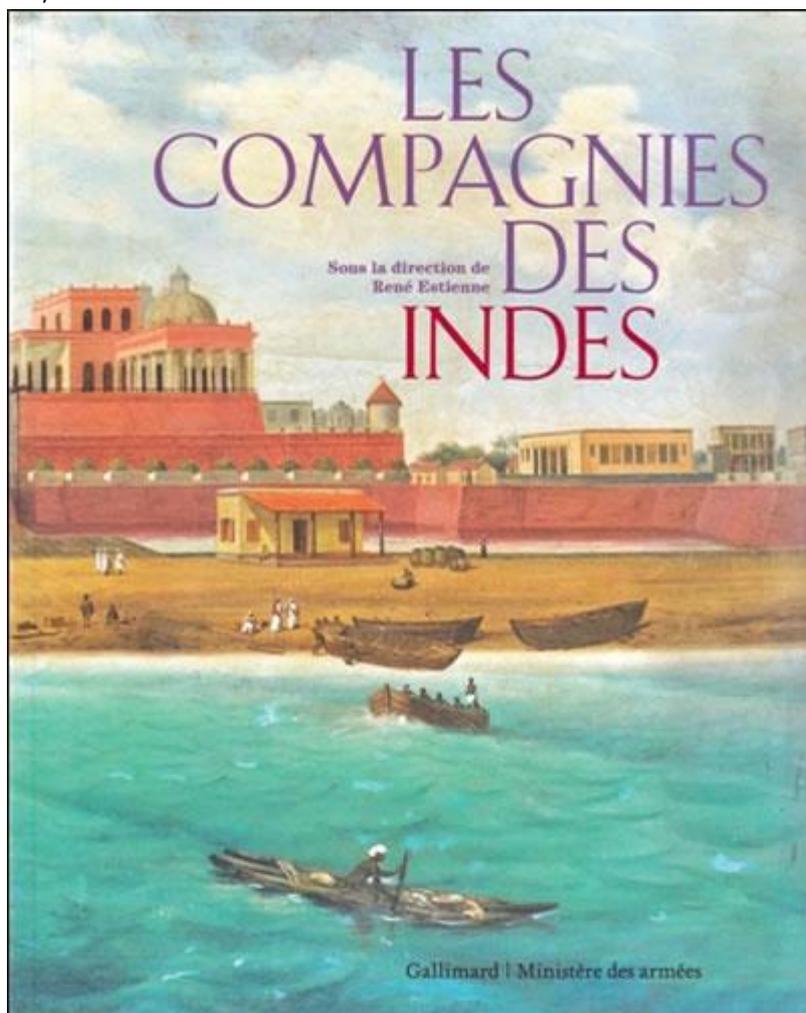
Publié le : 28 septembre 2017

ISBN : 978-2-07-274025-1

Reliure : Broché

Description : 279 pages; (26 x 20 cm)

35,00 €



Une entreprise stratégique et commerciale sous l'ancien régime, ou comment la France se lança dans la mondialisation.

En 1664, Louis XIV et Colbert créent sous monopole d'État la Compagnie des Indes orientales pour procurer au royaume de France des marchandises que l'Europe est bien en peine de produire. Son histoire mouvementée se perpétue jusqu'à la Révolution sous diverses formes, statuts et appellations. C'est ainsi que pour plus d'un milliard de livres tournois, poivre, épices, café, thé, porcelaines, cotonnades et soieries sont rapportés d'Afrique et d'Amérique, de l'île Bourbon et de l'île de France, des comptoirs des Indes - avec Pondichéry pour capitale - et même de Chine. Ces cargaisons débarquent

au port de Lorient où, vendues aux enchères, elles viennent satisfaire le goût du luxe des élites puis diffuser dans toutes les couches de la société un nouvel art de vivre

Inséré 25/06/21 NIEUWS NOUVELLES Enlevé 25/07/21

Owner and Insurers of Ever Given Face Millions in Claims

By Carolyn Cohn and Jonathan Saul

The owner and insurers of one of the world's largest container ships stuck in the Suez Canal face claims totalling millions of dollars even if the ship is refloated quickly, industry sources said on Wednesday. The 400-meter, 224,000-tonne **EVER GIVEN** ran aground on Tuesday morning after losing the ability to steer amid high winds and a dust storm, the Suez Canal Authority (SCA) said in a statement, threatening to disrupt global shipments for days.

GAC, a Dubai-based marine services company, said authorities were still working to free the ship mid-afternoon on Wednesday. The ship's owner, Japanese firm Shoei Kisen KK, and its insurers could face claims from the SCA for loss of revenue and from other ships whose passage has been disrupted, insurers and brokers said. "All roads lead back to the vessel," said David Smith, head of marine at insurance broker McGill and Partners. Shoei Kisen could not be reached for comment. Container ships of this size are likely insured for hull and machinery damage of \$100-140 million, insurance sources say. The ship was insured in the Japanese market, two of the sources said. The cost of the salvage operation is also borne by the hull and machinery insurer. "It is potentially the world's biggest ever container ship disaster without a ship going bang," one shipping lawyer, who declined to be named, said. Martijn Schuttevaer, spokesman for Dutch marine services company Boskalis, told Reuters its subsidiary Smit Salvage had been hired to help with the operation. A team of around 10 people is heading to Egypt.

SUPPLY CHAIN ISSUES

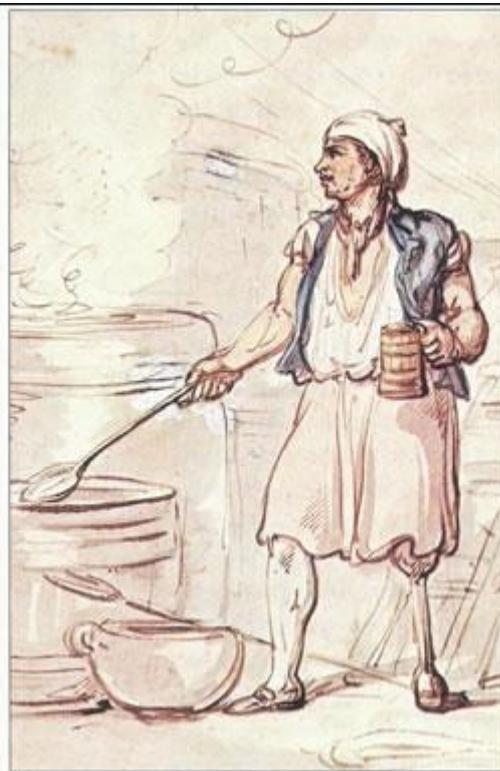
In addition, owners of the cargo on board the ship and on other ships stuck in the Canal will likely claim from the ship's liability insurer for losses to perishable goods or missed delivery deadlines, the sources said. "If you have a constant build-up of ships, there are massive supply chain issues," said Marcus Baker, global head, marine and cargo at insurance broker Marsh. UK P&I Club said in an emailed statement to Reuters that it was the protection and indemnity insurer for the **EVER GIVEN**, but declined to comment further. This segment of insurance covers ships against pollution and injury claims. The bulk of those insurance claims will then likely be reinsured through a program run by the wider International Group of P&I Clubs, Smith at McGill said. At least 30 ships were blocked to the north of the **EVER GIVEN**, and three to the south, local sources said. Several dozen ships could also be seen grouped around the northern and southern entrances to the canal. Analytics firm Kpler said more than 20 oil tankers carrying crude and refined products were affected by the disruptions.

Rahul Khanna, global head of marine risk consulting at Allianz Global Corporate & Specialty (AGCS), said there could also be claims for damage to the canal. Photos shared by the SCA showed a digger removing earth and rock from the bank of the canal around the ship's bow. Groundings are the most common cause of shipping incidents in the canal, with 25 in the past 10 years, according to AGCS. However, insurers look unlikely to face claims for spillage into the canal. Bernhard Schulte Shipmanagement, the vessel's technical management company, said there were no reports of pollution.

Source : Reuters (Additional reporting by Kirstin Ridley in London and Anthony Deutsch in Amsterdam; g by Emelia Sithole-Matarise)

Inséré 27/06/21 HISTORIEK HISTORIQUE Enlevé 27/07/21
Horacio Nelson (II)

Understandably, life aboard a Royal Navy man-of-war did not attract very many volunteers. A few boys were lured to sea by dreams of glory, and some veteran seamen were attracted by recruiting posters that appealed to "True-Blue Hearts of Oak" to serve king and country amid "Old Shipmates and their Jolly Friends." And bounties were paid to sailors who had special skills.



COOK



SAILOR

The most effective recruiting, however, was done by force. Press gangs of half a dozen tough sailors commanded by a junior officer went through port towns dragging off almost any nautical-looking man they saw and "pressing" him into involuntary service. It was an early, and rough-and-ready, form of conscription into a harsh and dangerous world that few would enter willingly.

Once aboard their new ship, the pressed men were washed, deloused and divided into four groups. First were the able seamen, experienced sailors who could work aloft on the yards. They were paid a handsome sum for the era: 33 shillings a month. Second came the ordinary seamen, paid 23 shillings, sixpence, who knew enough to haul a line on deck. Next were the landsmen, who, at 17 shillings, sixpence a month, could do other jobs on the ship such as maintain the lower rigging or serve as the officers' servants. A special group was known as "idlers"—so called because they did not have to stand watch—who had the skill to do carpentry, make sails or serve as surgeon's mates; these men were paid about the same as able seamen.

Once at sea, the officers began molding this haphazard collection of men into an effective crew. The able seamen tuned the rigging, tightening and slackening it until the ship was properly trimmed. The carpenter and his mates made everything shipshape, plugging leaks and making the wooden patches they would use to repair shot holes during battle. The head gunner and his mates ladled powder into the bags called cartridges. The seaman who was euphemistically named the "captain of the head" made sure the officers' toilets in their stern quarters were maintained in a proper and sanitary condition.

On the three gun decks the gunners took particular care with the lashings to make sure that no gun would break loose. Except for actual combat, nothing could be more dangerous than a three-ton mass of iron on wheels breaking loose and careering wildly to and fro with each roll of the ship. Loose cannon had been known to smash clear through the side of a ship and to maim horribly gun crews that got in the way.

When ships were headed for war, the captains drilled their crews ruthlessly in the routine of preparing the vessel for battle. The speed at which its gunners could fire was a matter of great pride in the Royal Navy. One captain, Cuthbert Collingwood, who would be among Nelson's devoted "Band of Brothers" at the Battle of the Nile, drilled his gunners until the best of them could fire their cannon at the astonishing rate of three rounds every two minutes.

All True-Blue
BRITISH HEARTS OF OAK
 Who are able, and no doubt willing, to serve their Good
KING and COUNTRY
 ON BOARD OF
 His Majesty's **SHIPS,**
 Are hereby invited to repair to the Roundabout
 Tavern, near New Crane, Wapping, where they will find
 Lieut. **JAMES AYSCOUGH**
 Of the **BELLONA,**
 Who still keeps open his right real Senior, General and Royal
Portsmouth Rendezvous,
 For the Entertainment and Reception of such
Gallant SEAMEN
 Who are proud to serve on board of the Ships now lying at
 Portsmouth, Plymouth, Chatham and Sheerness,
 Under the **COMMAND** of
 Vice-Admiral Geary, Rear-Admiral George Lord
 Edgumbe, and Commodore Hill; viz. The

Censor	74	Princess of Wales	74	Bellisle	70	Portland	52
St. Albans	74	Defence	74	Buckingham	64	Minerva	52
Bedona	74	Termination	74	Archibute	ditto	Renouart	46
Ajax	74	Fortitude	74	Yarmouth	—	Carthage	42
Arrogant	74	Prudent	74	Rippon	—	Mercury	38
Hero	74	Ramilles	ditto	Fern	64	Garland	34
Cornwall	ditto	Alban	—	Augusta	—	King's Father,	14

With a Number of Frigates and Sloops in the above Ports.
 Line. Although will be desired happy to take Hands with any of the said Ships as particular, a
 free July Friends in general—keep to the very best—Twenty may play as well as one.
 All Hands will receive Three Pounds Bonus, and Officers Sixteen Ten Pounds, with Goodwill Money
 and their Cloths, Bedding, &c. like George King.
 N. B. For the Convenience of Dissolute Seamen, who may not be capable, a **REWARD** of Ten Pounds will
 given for any such, and Twenty Shillings for others.
 Done by the **MAGISTRATE**, Sir Thomas Ligonier July 1780. (JAMES AYSCOUGH)
GOD SAVE THE KING
 Printed by R. HILTON, in WELL-CLOSE-SQUARE

A 1780 Royal Navy recruiting poster promises enlistees jolly comradeship and cash bounties. In Nelson's era, bonuses for enlistment varied from 30 shillings to more than 25 guineas. Other rewards were available, as the fine print at the bottom explains, for "Discovering Seamen, that they may be impressed"—that is, for reporting to the authorities men who could be forced into service.

In June 1778, the great ship Victory, 19 years in preparation, was finally ready to proceed to sea. It was fortunate for England that this powerful vessel was at last complete, for by 1778 the challenge to the Navy and to Great Britain was mounting. The danger came not so much from the American rebels, whose navy was correctly perceived as more of a nuisance than a threat. The true menace came from Britain's neighbors across the Channel. The Admiralty well knew that France could be expected to aid the Americans—not because of any great affinity for the colonial revolutionaries but in order to strike at England. In fact, a treaty between France and the Americans was signed in February 1778.

The French had made good use of the time since the Seven Years' War. Their navy, which had been virtually annihilated during that conflict, now included 74 major ships of the line. England at this stage had 69 ships of the line, but it was in for greater jeopardy than the numbers indicated. Eleven ships were in American waters, and of the rest only 35 were ready for sea. Most of the French warships were better designed and more heavily armed. Smarting from France's defeats in earlier naval wars, Louis XVI had lavished huge funds on the Navy, which was designated, for a time at least, "the first service of the realm." New academies of naval architecture were opened, a network of new dockyards was built, reserves of the finest timber were set aside. The sailing qualities of new French ships showed the result; they were generally faster and more maneuverable than their British counterparts, and more carefully constructed. Some of the French shipwright manuals and writings on design were translated into English, but complacent British shipwrights paid them little heed. They continued to build ships by what they called the "rule of King's thumb," which meant in the traditional way without constant refinement.

The scent of war was in the air when on March 12, 1778, the Victory's first captain was rowed out to where she was moored off Gillingham, near Chatham. He was Sir John Lindsay, a hero of the Seven Years' War who was to hold this command only briefly: his assignment was to take the Victory down to Portsmouth, where she was to become the flagship of Vice Admiral Augustus Keppel. But now Lindsay was piped aboard the Victory. He read his commission to the assembled officers. His pennant was hoisted. And the Victory was finally commissioned.

There followed two months of hectic préparation. Ballast was sent ashore, to be replaced with supplies: 45 tons of biscuit, 25 tons of pork, 10 tons of flour, 50 tons of beer—and the 35 tons of powder and 120 tons of shot that were the reason for the Victory's existence. The master, who was in charge of sailing and navigation, the boatswain and the carpenter

scurried about fitting out the ship for sea. The purser supervised the loading of stores, and the gunner, the stowage of ammunition and the positioning of the guns.

The Victory's marines—a captain, a sergeant, a corporal and 55 privates—came smartly aboard on April 11. The vessel was nearly ready for sea now, and spruced up for a special royal visit. On April 25, as the warship's cannon fired their first 21-gun salute, King George III came alongside in the yacht Royal Charlotte. On Monday, April 27, His Majesty spent three hours aboard, inspecting the ship and her crew. Then, nearly 20 years from the day her keel was laid down, the Victory dropped her mooring to proceed down harbor to the sea.

His face alight with anticipation, a lad signs on with the Royal Navy in this 1794 engraving after Henry Singleton. Such boys, aged 12 to 17, were taken aboard as servants and apprentices. Despite their abysmally humble station, they were in a way the Royal Navy's secret weapon as they matured into highly skilled seamen.

En route around the southeastern tip of England the crew shook down. The able seamen became used to the vessel's rigging, her gun crews were formed, and some semblance of order was brought to the ship.

On May 14, the day after her arrival, Admiral Keppel was piped aboard for inspection. One of Britain's most illustrious admirals, Keppel was 53, a Young age for the Royal Navy. As a 15-year-old midshipman in 1740, he had sailed under Commodore George Anson on a historic circumnavigation of the globe, and had won promotion to lieutenant for his excellent service. His progress through the ranks was swift. At 34 he had commanded the 74-gun ship of the line Torbay at the victorious Battle of Quiberon Bay during the Seven Years' War; later in that war, he led a brilliant assault to capture the heavily fortified Belle-Île-en-Mer in the Bay of Biscay. He had won his rear admiral's flag in 1762, after playing a leading role in the capture of Havana from France's Spanish ally.

Keppel had been a vice admiral for eight years and now had been placed in command of a fleet forming up as England's line of defense in the Channel. Not only was France joining in the American war, but there were reports that she was also planning an invasion of England. To forestall such an attack, Keppel was given 21 ships of the line and four frigates. According to the fourth Earl of Sandwich, First Lord of the Admiralty, it was "a noble fleet." Regarding his command more objectively, Keppel noted that some of the ships were not in a satisfactory state when "looked at with a seaman's eye." He had chosen the best of them, the Victory, as his flagship. Next day, he transferred his flag from the Prince George, a 90-gun first-rater, on which he had been waiting. By custom, commanding admirals also brought their own favored captains aboard their flagships. Keppel's choice was Captain Jonathan Faulknor of the Prince George. Aboard the Victory, Captain Lindsay signed the ship's log over to Faulknor and then went to replace him as commander of the Prince George.

Responding to his admiral's wishes, one of Faulknor's first actions was to order the name Victory removed from the flagship's stem. Keppel believed that in battle a ship's name was of no use to anyone save the enemy; the gilt letters were removed as well from the other ships in the fleet. Nearly a month passed before Keppel's force was ready. At last, on June 13, 1778, the Victory led the flotilla out past Spithead and into the Atlantic. Keppel sent his smaller, faster frigates on ahead; the frigates were known as the eyes of the fleet, and their vital task was to scout for enemy ships. For the next four days the Victory's crewmen, along



with those of the rest of the fleet, were ordered into intensive practice for the battles that would come.



On the fifth day Keppel's reconnoitering frigates came racing back to report. The signal flags snapping from the yardarms spelled action: the enemy was coming out of the harbor of Brest. France had committed herself to another naval war with England.

The first skirmish gave precious little foretaste of what was to become a titanic clash of sea power. The enemy so eagerly announced by Keppel's frigates turned out to be nothing more than a light French scouting squadron consisting of two frigates, a corvette and a small lugger. The French frigate *Belle Poule* opened the war by slamming a 20-gun broadside into the British frigate *Arethusa*, and after four hours of fighting, the *Belle Poule* fled into a rocky bay on the Brittany coast. The corvette and *Fugger* likewise beat a rapid retreat. But the second French frigate, the *Licorne*, tarried a trifle too long and was soon captured. She was brought as a prize under the looming stern of the *Victory*. And it was then that Admiral Keppel received the first of a number of nasty surprises. From papers aboard the *Licorne*, he learned that the French had no fewer than 32 great ships of the line in the harbor at Brest. And this mighty fleet, mounting close to 3,000 guns, would soon come out to challenge the British. Keppel was among the most courageous of Royal Navy admirals. But he was no fool. He knew that his 21 ships, only a few of them 100-gun first-raters, were no match for the French at this stage. He dared not jeopardize Britain's only defense, its ramparts of wood. Ordering a defensive maneuver, he cracked on sail for a dash to Portsmouth, anchored at Spithead on June 27, reported his news and pleaded with the Lords of the Admiralty for reinforcements.

There followed 12 days of frantic activity in the Portsmouth dock-yards. Three more ships of the line were made ready for sea. Another six were promised from the escort of an incoming West Indies convoy, which was expected momentarily. On July 9, Keppel in the *Victory* made sail and led the Grand Fleet out to sea once again. Two days later, in mid-

Channel, the promised reinforcements arrived. The admiral now had 30 powerful ships of the line, only two fewer than the French; the odds had narrowed more to his liking.

Keppel set course to cruise south of Brest. The Admiralty had given him two assignments. One was to interpose himself in a blocking position between the French fleet and the fleet of France's Spanish ally at Cadiz. It was a measure of rising English confidence—or conceit—that no one regarded this as positioning Keppel squarely between the jaws of a trap. Keppel's second mission was to watch for two more richly laden British convoys due to arrive shortly—from the East Indies this time, carrying Chinese tea, porcelain and silk. Spies on the Continent had reported that the French were also aware that these convoys were soon expected; their loss would be a devastating psychological Blow to England at the very start of the war. What Keppel did not know was that on July 8, a day before he had hauled up his anchors at Spithead, all 32 French ships of the line, under the Comte d'Orvilliers, one of France's premier admirals, had sailed out of Brest to intercept the East Indian convoys. It seems incredible that this armada could slip from its base and reach the open Atlantic without being spotted by one of the British frigates patrolling off the coast of France. But the nature of naval warfare in the 18th Century—with huge expanses of water, relatively slow, small ships and every imaginable weather condition—was such that hundreds of vessels could sail around for weeks groping for one another.

For a fortnight the two fleets patrolled back and forth in the open Atlantic south of England and west of France, two vast armadas stretching as much as a mile or more across the sea, each unaware of the other's position. On the afternoon of July 23, 1778, they found each other.

The British fleet was 100 miles off the French coast, due west of Ushant, when the first lookouts high in the swaying tops called down that they had sighted sails on the horizon. Then there were more sails, and more and more until the entire French fleet was arrayed before the British. If Keppel was surprised at encountering his enemy on the open ocean, he was also pleased; he had the weather gauge in the southwesterly wind—that is, the British fleet had the wind behind it, which gave it many more options and much greater maneuverability than the French. As dusk fell, Keppel held to his course to be ready for battle in the morning. Meanwhile, in case the French should attempt a surprise attack during the night, he ordered all ships cleared for action.

The first light of July 24 brought another surprise for Keppel. The French fleet was not where he expected it to be. D'Orvilliers had outsmarted him. Under cover of darkness the French admiral, in a brilliant feat of seamanship, and making the most of his faster, superior ships, had worked almost his entire fleet upwind of the British. Now he, not Keppel, had the weather gauge and the choice to force or refuse battle.

There was one consolation: the new position placed the British fleet between d'Orvilliers and the coast of France. D'Orvilliers could no longer make a run for home without affording the British a crack at him. Nevertheless, d'Orvilliers enjoyed a decided tactical advantage—so long as he could hold his upwind position.



Studying the enemy's disposition, Keppel spotted what he thought might be a small flaw, something that might give him a chance to engage the French after all. Two of the French vessels, it appeared, had not quite achieved the weather gauge, and were still struggling into the wind. Some of the British ships at the rear of the formation remained upwind of them. Keppel ordered a signal to the Victory's masthead, and two British men-of-war peeled off to engage the French stragglers.

Keppel now focused on d'Orvilliers's flagship, the 110-gun Bretagne, hoping that the French admiral would come about and hurry to the rescue of his endangered vessels. But d'Orvilliers did not take the lure; instead of swooping down to protect his two ships, he left them to their own devices. The swift French vessels promptly turned tail and fled for home, soon leaving their British pursuers astern. Keppel signaled his ships to return. At least he had evened the odds: now there were 30 French ships of the line to oppose his 30.



Happily "out of discipline" while anchored in home port, the crew of a British man-of-war relaxes below decks in this 1782 drawing by satirist Thomas Rowlandson. Most captains forbade shore leave to forestall desertion, and instead ferried the entertainment out to the sailors. Wrote one ship's chaplain: "Nothing can possibly be more awkwardly situated than a clergyman in a ship of war."

But d'Orvilliers refused to bring his fleet downwind to meet the British. For three days he carefully maintained his weather gauge while Keppel, with mounting anger and frustration, followed in dogged pursuit. Westward into the Atlantic the two fleets sailed, every ship stripped and ready for action.

Suddenly, at 10 a.m. on the third day, a black squall came racing across the water from the west. It burst on the British fleet almost before sails could be furled, gunports closed and the big guns lashed down. Sheets of rain sluiced across the decks. Lines slatted and sails boomed. On the Victory's louver gun decks the men held fast to the restraining gear as the massive cannon surged against the storm. In the bowling wind and smashing seas, Keppel lost sight of the other ships. For more than an hour, as the gale buffeted the big flagship, visibility was virtually nil. Then, as quickly as it had come, the rain raced off to the east.

Keppel and the men aboard the Victory watched the edge of the squall swirling away across the ocean, revealing ship after ship as it departed. And with the return of visibility, Keppel had yet another surprise: the entire French fleet was sailing straight for him!



French Admiral Louis Guillouet Comte d'Orvilliers had explicit orders to avoid a fight with the British fleet. Nevertheless, he wrote prophetically as he left the port of Brest, "if the enemy really seeks to force it, it will be very hard to shun."

The wily French admiral had seen the squall coming and, knowing that he could take advantage of the change in the weather, had turned his fleet around and headed in the opposite direction, eastward toward France. But d'Orvilliers was not maneuvering for a face-to-face fight to the death: that had proved catastrophic to the French in the Seven Years' War. Instead, he was about to employ a new naval tactic of hit-and-run, of raking the enemy, particularly in the vulnerable sails and rigging, and then racing away, either to maneuver for another swift strike or to flee for home if that seemed the better alternative.

Being on opposite tacks perfectly suited d'Orvilliers's purpose. At a closing speed of perhaps 12 knots, the engagement promised to be a short one, as such things went. But now the winds took a role in events. The lingering gusts of the squall died to light breezes, and the two fleets began to move past each other at a much slower pace.

The delighted Keppel did not even have time to raise the preparatory signal. He immediately ordered the standard flags for battle: "Line

Ahead" and "Engage." His ships had spread out during the three-day chase, and the squall had driven some of them out of the line of battle. But there was no time to reform.

Below decks aboard the *Victory* and all the other ships of the Grand Fleet, gun crews snatched away the heavy restraining gear that had been secured during the storm. With the swiftness and sureness that came from constant drill, the gunports were opened, the wooden plugs pulled from the cannon muzzles, powder and shot rammed home, and the long iron snouts run out the ports. Unlike the French gunners, who preferred to fire high, the British went for the enemy's hull, on the principle that the way to win a battle was to hole ships and kill men. The *Victory's* gunners, taking a length of burning fuse and blowing on the end until it glowed, waited for the beginning of the downward roll. Then the gun captain yelled "Fire!"—and each gunner touched off his cannon, sending a ball roaring across the water at 1,200 feet per second.

There was no time to see what damage the ball had caused. The moment the cannon reached the end of its violent recoil, the gun crew leaped forward to clean it and load it for the next shot. By now even the slowest of the *Victory's* gun crews could clean, load, aim and fire a cannon in less than two minutes. And on this particular morning in the cold Atlantic it was well that they could.

Despite the light airs, the two fleets were passing each other at a combined speed of six knots. Keppel shortened sail to slow down, but no ship was opposite another for more than two or three minutes. Still, that meant that in running along the line each French ship and each English ship was fired on, and that the two fleets would take about an hour in all to pass each other.

The heavy cannon balls from the British ships were not doing as much damage to the French hulls as they would have if Keppel had closed the range between the two lines. Meanwhile, the French gunners were cutting up the British rigging with their high-flying chain and bar shot. The *Victory*, in the center of the British line, had already suffered considerable damage when d'Orvilliers's flagship, the *Bretagne*, came down opposite her. As the two flagships rolled past each other, the *Victory's* gunners scored their best shot of the day; in one thundering broadside they blew open three of the *Bretagne's* gun ports, making a wide gap in her side and killing many of her crewmen. But the French gunners

responded by chopping up so much of the Victory's rigging that her masts began to sway perilously.

By 2 p.m. the two fleets were out of range and the firing had died. The Victory's masts were threatening to topple. Smoke swirled through her gun decks, and wounded men lay on the improvised litters in the cockpit waiting for the surgeon to remove splinters of wood or cut away smashed limbs. Gunners mopped sweat from their bare chests and stuffed wads into their ears, which were bleeding from the concussion of the cannon.

On the quarter-deck Keppel began to assess the damage to his fleet. Those in the rear seemed to be hurt worst. And as Keppel watched, d'Orvilliers appeared to be rounding up as if ready for another engagement. Keppel decided to oblige him and signaled to the fleet to form line ahead on the other tack.

At the head of the British line Vice Admiral Sir Robert Harland, commander of the "van," or front squadron, was already coming about. But the Victory, sorely damaged, had to be brought about gently before the wind, nursing her tattered rigging. By 3 p.m. Keppel had his van and center ready; but the ships of his rear had not joined the line. The commander of the rear was Vice Admiral Sir Hugh Palliser. His ship, the Formidable, had been damaged more heavily than Keppel realized from a distance. Her foremast had been shot away and she was scarcely under way; since Admiralty regulations required all the vessels in a squadron to remain with the leader, the 90-gun Ocean and the 74-gun Elizabeth could not abandon the Formidable and hurry to join Keppel.

Keppel might have done without the rear and ordered Harland up to the front for an immediate attack. However, he doggedly refused to risk further action until he had his entire fleet in a straight line-ahead formation. He waited impatiently for Palliser in the crippled Formidable to bring up the ships of the rear. Three hours passed, and Keppel sent a frigate racing back, ordering them to join the line. Still Palliser delayed while he made emergency repairs. It was dusk before the three vessels of the rear formation joined the rest of the fleet.

Keppel could see that the French had retained—and tightened—their line of battle. Though they had suffered many casualties and considerable damage, their sails and rigging were in better shape than those of the British. Consequently, they could maneuver more effectively. Keppel judged that they were ready to renew the battle. But he decided, with darkness approaching, that it was too late for another engagement. He ordered the fleet to keep in formation until dawn, to stay alert for a possible French attack. Through the night he led his fleet upwind, in hopes of regaining the weather gauge. And through the night the Victory's crew stood to general quarters, trying to keep awake after the exhausting day. Across the water they could see three lanterns, which they took to be the lights of the French fleet still waiting for them.

With the dawn Keppel ruefully discovered that the crafty d'Orvilliers had outsmarted him yet again. Only three French ships, the ones that had shown the lights, were anywhere near him. While they had served as decoys, d'Orvilliers had coolly sailed off with the bulk of his fleet, and the three remaining ships were now crowding on sail to rejoin the main body of its escape eastward toward France.

With widespread damage to their rigging, the British ships had no hope of overhauling the enemy. On July 28 Keppel decided that his fleet was in such disorder aloft that it was unwise even to remain off a hostile coast. He made for home.

Aboard the British fleet 506 men had been killed or wounded, 35 of them on the Victory. No ships had been lost, but on July 31 when the Grand Fleet reached Spithead, it sailed into a storm of criticism and recrimination. Keppel blamed Palliser for disobeying orders. Both demanded a formal court-martial, and both were exonerated.

The controversy exposed an unpleasant—and exceedingly dangerous—situation within the Royal Navy: it had become politicized. Palliser was an outspoken conservative Tory and Keppel an ardent liberal Whig. Emotions ran high at the trials. Jubilant Whigs wore light-blue ribbons in their hats with KEPPEL in gold letters; Whig ladies of fashion had made and distributed the hats. As Keppel departed from the court, a band marched before him

playing He Comes, He Comes, The Hero Comes. So controversial did the issue become that Keppel refused to serve under the ruling Tory Government. He bitterly hauled down his flag, left the Victory and retired to await the downfall of the Tories.

As for Admiral d'Orvilliers, in late July he made it safely back to Brest, and a hero's welcome. He had been at sea challenging British rule for the better part of a month, and though he had lost 674 men through death or wounds, not a French ship had been sunk. In the sense that he had outmanoeuvred the British and then fought them to a standoff, the Battle of Ushant was the first French success in more than a decade—since the Seven Years' War.

Ushant proved a vastly important point about the changing nature of naval warfare. By refusing to attack the enemy in anything but the traditional, sacrosanct line-ahead formation, Keppel had assured d'Orvilliers's escape. The lesson, however, was utterly lost on the hidebound British Admiralty; in fact, one of the criticisms of Keppel's tactics was that he had come into battle in the first instance without reassembling his disordered line. But how he could have accomplished this with the French line already plowing past him the Admiralty did not say.

The merest boy of a captain I ever beheld" is how one amazed midshipman described 24-year-old Horatio Nelson, captain of the frigate Albemarle, in 1782. This portrait by John Rigaud was begun when Nelson was 18 and a second lieutenant; it was set aside unfinished when the young officer shipped out to the West Indies in 1777. Upon his return to London four years later, the portrait was completed—now with a captain's proud insignia on the uniform sleeve.

The clear message of the Battle of Ushant was that the old textbook tactics were no longer good enough. French ships were much improved. And the French hit-and-run tactics—crippling the enemy rigging and running away—could not be countered by the powerful but inflexible line of battle that had served the Royal Navy so well up to now. But the Admiralty had not recognized the message. And now England was plunged into a naval war in which only a major change of tactics could save her from disaster.

Fortunately for England, the Royal Navy, seemingly so tradition minded, would come up with the new tactics needed to meet and defeat the French in the long series of great engagements that would stretch almost 30 years into the future, from Ushant in 1778 to Trafalgar in 1805.

A chief designer of the new tactics would be the same Horatio Nelson who had arrived, age 12, at the docks of Chatham in 1771. At the time of the Battle of Ushant, Nelson was serving with the West Indies station, the small fleet in the Caribbean that was trying to deal with the privateers of France and of the rebellious American colonies, which were preying on British shipping. Now 20 and a lieutenant, Nelson was rising fast in the service. His boldness and initiative had been recognized by Captain William Locker, master of the *Lowestoffe*, on which Nelson was serving. Locker soon recommended the young Nelson to Sir Peter Parker, newly assigned to command the West Indies station. Parker, equally impressed with the young officer, gave Nelson his first command in the winter of 1778, the brig *Badger*. But it was the advice given to him by



Captain Locker that Nelson would never forget: "Always lay a Frenchman close and you will beat him." Bold, aggressive, close-in fighting would become Nelson's trademark—and the essence of the new tactics that would make the Royal Navy once again supreme. But it would still be a while before the Royal Navy was prepared to break with its traditional ways, and in the meantime it was fated to suffer further embarrassment.

Inséré 28/06/21 DOSSIER Enlevé 28/07/21

Coronavirus and its impact on your contract can you rely on 'Force Majeure'?

On 30 January 2020, the World Health Organization (WHO) declared that the outbreak of the Novel Coronavirus (officially the "COVID-19") was a Public Health Emergency of International Concern. The virus has been spreading rapidly both within China and globally in recent months.

Both the Chinese government and other countries have adopted various measures aimed at containing the spread of COVID-19. These measures are causing disruption to international trade and transport, with the consequence that many companies have found themselves either unable to perform their contractual obligations or at risk of not being able to do so in the future.

Where affected or potentially affected contracts contain force majeure ("FM") provisions, the parties should consider if and when these provisions might be successfully invoked as a result of the COVID-19 outbreak.

What is FM?

Although the concept of FM is globally recognised in commercial transactions, there are key differences in the treatment and recognition of FM across different jurisdictions. Under common law systems (such as English law), parties who wish to rely on FM must come within the express wording of the FM clause. The courts will not imply FM in the absence of an express contractual provision.

A FM clause expressly excuses non-performance upon the occurrence of certain specified events beyond a party's control.

A FM provision may also allow a party to postpone its contractual obligations for a certain period of time. Where the FM event is continuing, the contract may be terminated. However, as will be seen below, a party must bring itself clearly within the wording of the FM clause before it can claim FM.

By contrast, civil law systems have a more developed concept of FM and may, in appropriate circumstances, excuse non-performance of a party based on FM, even in the absence of an express FM clause. The concept of FM is also a creature of statute in some jurisdictions, such as the People's Republic of China. It is, therefore, important to consider the potential applicability of FM in the context of the governing law of the contract.

FM vs Frustration

As discussed above, FM is a creature of contract under common law. FM clauses are strictly interpreted by the English courts. Parties wishing to invoke a FM clause must satisfy the conditions required under that clause, interpreted in accordance with the applicable caselaw. Furthermore, careful consideration should be given to matters such as, for example, the events that are specified as constituting a FM event, as well as considering their nature and effect. FM clauses often refer to performance being "prevented", "hindered" or "delayed", all of which can be construed differently in the context of the rest of the relevant clause and the contract as a whole.

Where the contract does not contain a FM clause, the doctrine of frustration may apply.

Frustration is difficult to prove. It requires impossibility of performance caused by an unforeseen event significantly altering the contractual obligations of a party outside of what could reasonably have been contemplated at the time the contract was executed. Delays, such as those caused by measures taken due to the COVID-19 outbreak, will not in principle, and without more, amount to frustration. Similarly, a frustrating event that may be "self-induced", i.e. performance made impossible by one's own choice, will not qualify as a frustrating event.

The COVID-19 outbreak and FM CCPIT

Certificates

On 30 January 2020, the China Council for the Promotion of International Trade ("CCPIT") announced that it would offer "force majeure certificates" to help affected enterprises minimise losses arising from COVID-19. CCPIT issued its first FM certificate for COVID-19 on 2 February 2020. The application for a FM certificate is relatively straightforward – an affected party can apply for such certificates online with supporting documents evidencing the delays caused by the outbreak. However, the question remains whether obtaining a CCPIT FM certificate will, in and of itself, be sufficient to prove that a FM event has occurred and/or to allow the party seeking to rely on the relevant FM clause to do so successfully? Where the contract is subject to Chinese law, the answer is probably yes. Under Chinese law, a party is exempted from liability where it can prove the requisite elements of FM. Furthermore, a contract may be terminated where the purpose of that contract has been frustrated by FM. Under Chinese law, FM is defined as being unforeseeable, unavoidable and insurmountable objective conditions. A CCPIT FM certificate could be key evidence towards satisfying a Chinese court that COVID-19 is a FM event. Under common law, however, a CCPIT FM certificate might arguably only be useful for its evidentiary value and may only be one factor in establishing the existence of a FM event. Even then, it may only be relevant insofar as COVID-19 could potentially be brought under the FM clause in question in the first place.

Requirements for proving FM

Even where a party is able to show that the current situation is a FM event within the FM provision in the relevant contract, the party seeking to rely on FM to excuse its nonperformance must still prove the following:

1. That it was prevented, hindered or delayed from performing its obligations due to the relevant event;
2. That its non-performance was due to circumstances beyond its control; and
3. That there were no reasonable steps that it could have taken to avoid or mitigate the event or its consequences. The party seeking to rely on FM has the burden of proof and will need to gather the necessary evidence if it wishes to declare FM. The required evidence will be fact-specific and will depend on the contract and the prevailing circumstances.

Standard form contracts

We consider a few examples of standard form contracts below, and whether the FM provisions in these standard form contracts are potentially wide enough to cover COVID19. The general requirements for proving FM, as outlined above, will apply to these standard form contracts in addition to the specific requirements dictated by the standard forms.

Shipbuilding

NEWBUILDCON, a standard form shipbuilding contract published by BIMCO, allows a new build's delivery date to be extended in the event of actual delay caused by a FM event. If that delay exceeds 180 days, the Buyer has the right to terminate the contract with notice.

NEWBUILDCON lists various FM events which include: (a) epidemics; (b) any government requisition, control, intervention, requirement or interference; and (c) lockouts or other industrial actions. COVID-19 is arguably an "epidemic", however this may be subject to interpretation by the relevant courts or tribunal as the WHO has not yet declared the outbreak to be an epidemic. Various travel and quarantine restrictions by governments may also fall within the "government requirement" wording and it could be said that "industrial actions" would encompass action taken by companies placing restrictions on staff returning to work due to the outbreak. However, the NEWBUILDCON only permits the Builder to rely on one of the FM events listed provided that:

- (i) Such events were not caused by the error, neglect, act or omission of the Builder or its Sub-Contractors; and
- (ii) The events were not, or could not reasonably have been, foreseen by the Builder at the date of the Contract; and
- (iii) The Builder has complied with the notice provision in relation to the FM event as provided for in the contract; and
- (iv) The Builder has made all reasonable efforts to avoid and minimise the effects such events have on the delivery of the vessel. Accordingly, whilst the Builder might be able to establish that the COVID-19 is an epidemic as provided for in the wording of the NEWBUILDCON FM clause, it will also need to establish and comply with all the requirements above to benefit from the protection offered by the FM clause. Whether this is possible will depend on the particular factual situation and whether actual delay was caused by the COVID-19 outbreak.

Oil & gas

Both BP and Shell set out a non-exhaustive list of FM events under their general terms and conditions for the sale and purchase of crude oil. These terms provide that COVID-19 may constitute FM where the supply of crude oil is affected. The effect of quarantine restrictions on the supply and delivery of crude oil may also be a FM event if it is the result of a regulation or order by relevant authorities. Where a FM event exists, a party may either immediately terminate "the affected delivery obligation(s) without liability" if performance is impossible, or postpone those delivery obligations without liability "for a period until midnight local time on the last date of the Laydays, or until such time as the impediment is removed, whichever is earlier". The outbreak may also constitute a FM event under the BP Standard Form FOB LNG MSA Agreement (2019 edition) where the outbreak affects the ability to load cargo onto a LNG vessel either at the loadport or at the seller's premises; or where it causes industrial disturbances; or where it causes delay due to the compliance with quarantine restrictions or other control measures put in place by authorities.

However, as with the NEWBUILDCON above, it is important to assess the precise wording of the contract and the specific delay caused in each case before relying on the contractual FM provision.

Soft commodities

The imposition of quarantine requirements may be a FM event under GAFTA standard for contracts (e.g. GAFTA 38, 39 and 100) where it is shown to be an "unforeseeable and unavoidable impediment to transportation or navigation". COVID-19 may constitute FM where the situation escalates and delay or impossibility occurs as a result of a government or authority prohibiting or restricting exports out of a port named under the contract. Concluding Remarks If COVID-19 is uncontained, it is likely to have significant impact on international trade.

The Chinese government and other governments around the world have already taken action to control its spread. Nonetheless, we have already started to see declarations of FM from companies, and issuances of FM certificate by CCPIT.

As the situation continues to unfold, there will no doubt be an increased reliance on FM or other exclusion clauses. We strongly recommend that existing contracts and situations be reviewed carefully to determine whether the factual situation allows a party to declare FM. When in doubt, please take legal advice. The above does not constitute legal advice on pre-existing or drafting of force majeure clauses, nor does it consider a complete list of issues to be aware of arising from COVID-19. Should you have any queries, please do not hesitate to contact the authors of this article or your usual contact at Ince.

Source: Ince (Authors: Wai Yue Loh, Head of China Practice in Singapore, Chief Representative of Beijing Office Kimarie Cheang, Of Counsel, Cindy Wang, Associate, Alexandra Hirst, Associate)

Inséré 29/06/21 DOSSIER Enlevé 29/07/21

EU starts to chart shipping's new green course

The shipping industry will soon have to pay for its environmental impact in the EU, as both the European Commission and Parliament are moving forward with plans to include vessels in the bloc's flagship carbon market. But there are choppy waters ahead. International shipping is responsible for roughly 3% of global greenhouse gas emissions. Its contributions are increasing, as global trade continues largely unabated, but its supposed free-ride has not gone unnoticed. It is why bringing the maritime sector to heel was one of the most tangible ideas proposed by the Commission's Green Deal in December, under which shipping is set to be included in the EU Emissions Trading System (ETS). Most forms of transport, with the notable exception of intra-EU flights, are exempted from the carbon market. Heavy industrial facilities and power plants are issued a certain number of free permits and then have to buy more or clean up their act if emissions continue. According to EU officials, the Commission is now working on preparing the ground for an ETS-extension proposal and it could be published at the earliest in mid-2021. For some though, that delay is unacceptable. German Greens MEP Jutta Paulus is tasked with leading the Parliament's negotiations on an update to EU rules on monitoring shipping emissions and is using the opportunity to try and speed up the ETS process. "I don't see any sense in keeping on counting emissions but doing nothing to reduce them. Some environment committee colleagues agree on that point, even if the Commission is not too enthusiastic," Paulus told EURACTIV in an interview. The German lawmaker's draft report on the so-called MRV regulation is explicit in calling on the EU executive to include shipping in the carbon market and to start calculating pollution permit allocations.

Climate policies have so far failed to shanghai the sector because of the influence of the International Maritime Organisation (IMO), the UN agency tasked with overseeing everything related to shipping. Large flag states like Panama, Liberia and even Malta have blocked or slowed down green efforts over the years, while an aspirational strategy on cutting emissions by 50% by 2050 has received criticism for lacking teeth. "The IMO has been promising to do something for 25 years or so. Even just counting emissions, they only started moving after the MRV regulation first came into force. That's why this proposal is on the table in the first place," Paulus explained.

"The Commission's roadmap shows they want to take some more years in order to do more impact assessments, talk to stakeholders and so on. But the assessment was already done in 2013," she added. But due diligence might be a stumbling block when it comes to negotiations between the Parliament, Commission and member states. Despite the MEPs'

insistence that little has changed since the 2013 number-crunching, national capitals might cry foul. The Netherlands, home to the bloc's largest port, is one nation that wants the Commission to do its homework in full. A Dutch non-paper insists ETS-extension would "require a thorough impact assessment" and full coordination with the IMO. If another assessment is deemed necessary by policymakers, the timeline could be moved back even further. EURACTIV understands that human resources at the Commission's climate department, DG CLIMA, are stretched thin already. Plans suggested under the Green Deal, including ratcheting up the EU's overall 2030 target and tweaking car CO2 targets, all require climate modelling that only DG CLIMA staff have the expertise to carry out. A delay could prove to be ironic as when the von der Leyen Commission first took office, oversight of maritime and ETS was first given to the transport department, DG MOVE, before climate boss Frans Timmermans asked for it to be reallocated.

Water way to go

Jutta Paulus' report also calls for improved engine efficiency standards. Under her amended proposal, around 12,000 large ships that use EU ports would have to cut their emissions by 40% by the end of the decade, compared to 2018 levels. That marks a big break with the IMO's roadmap, which although suggesting 40% too, uses 2008 as a baseline. That year was a particularly slow year for emissions, due in part to that decade's economic crisis. A study by the International Council on Clean Transport (ICCT) this week revealed that the IMO's 2030 goal was actually already three-quarters met when it was approved in 2018, which has prompted accusations of greenwashing and calls for a rethink of the target. But one idea over which the EU, IMO and shippers themselves are likely to find common ground is that any levies generated by taxing the sector should be reinvested into projects that will make ships cleaner and ports more eco-friendly. To that end, the Paulus report suggests the creation of a Maritime Decarbonisation Fund, where revenues from ETS permit sales will be collected. The MEP suggests that 30% of the Fund should then be used to increase ship efficiency. Dockside charging points for battery-powered vessels and research into new fuel types, like hydrogen and ammonia, are also possible initiatives that the money could be spent on, although the Fund itself could be a non-starter if national capitals feel belligerent. ETS revenues are normally fed back into the coffers of EU27 governments and any suggestions of changing that status quo have been batted away. It most recently cropped up when the previous Commission was trying to fill the financial budget hole left by Brexit. However, Paulus told EURACTIV that because international waters make divvying up responsibility such an arduous task, a common pot would be an elegant and, ultimately, fair solution. An agreement over whether ship owners or ship operators should be on the hook for payments will also have to be brokered. Practices vary across the EU: Danish giant Maersk, for example, owns and operates its vessels, while Greek companies tend to lease. Shippers could yet prove to be an ally as some of the biggest players have already come round to the idea of an innovation fund. Although taxation is still seen as the way forward, if the ETS becomes an unavoidable reality, the industry could go into damage control mode.

Tax doubts

The finer details of how shipping emissions should be priced are still to be hammered out but climate experts are adamant that taxing fuel would be a problematic course of action for the EU to pursue. Under the Green Deal, the Commission has pledged to explore whether the venerable Energy Taxation Directive should be reviewed in order to explicitly scrap any exemptions for the aviation and maritime sectors. Tax analysts are split over whether this would be treated as a fiscal matter, where decisions require unanimity that might be hard to reach, or whether qualified majority could apply, given that it is also an environmental issue. But regardless of that point, a fuel tax alone would not hack it, according to clean mobility NGO Transport & Environment, because of the international nature of shipping. "Unlike the ETS, imposing a European fuel tax is not expected to have the same benefits, as ships would fill up their tanks at non-European ports and continue

polluting European waters for months, avoiding the tax altogether,” T&E’s Jo Dardenne told EURACTIV. That point is truer still given the United Kingdom’s decision to leave the EU and its close proximity to the European mainland. The Port of Dover is only 33km from Calais, for example. The IMO will meet later this month to discuss pollution issues, including new research that shows low-sulphur fuels could be worse for the climate than first thought. Another meeting in April will broach the subject of an innovation fund, which delegates suggest could top €5 billion. Meanwhile, MEPs will vote on the draft report in committee in May, then hold a final vote at the June plenary. Jutta Paulus will then be deployed to trilateral talks in the second half of the year and a final agreement could be reached before the end of 2020.

Source: EURACTIV

Inséré 01/07/21 NIEUWS NOUVELLES Enlevé 01/08/21

The end of cavitation damage on running gear

In the last few months a large number of vessels belonging to seven different owners received **Ecoshield** protection for their rudders, bow thruster (tunnels) and nozzles. The applications were carried out on a wide range of ships including several container vessels, ferries, oil tankers and a navy vessel. The running gear of these ships will be protected against cavitation and corrosion damage for the rest of their service lives. Rudders, thrusters, nozzles and other underwater running gear are exceptionally prone to corrosion and cavitation damage. Cavitation is caused by the spinning of propeller blades. If running gear is not given the proper protection against this the damage can be severe.



Application of the first of two Ecoshield layers on a rudder.

This leads to expensive and time-consuming repairs in drydock at the least or malfunctioning of the running gear at worst. A rudder has been found missing in its entirety on more than a few occasions, unfortunately. This will have substantial financial consequences for a shipowner.

Ecoshield was designed to protect all running gear for the lifetime of the vessel. This coating system is applied only once. No repaint will be needed during future drydocking. Only small touch-ups to repair mechanical damage will be required.



Applying Ecoshield is a fast and easy to learn process. As a result an application is very flexible and can easily be scheduled around the planning of the yard. Only two layers are required. The minimum overcoating time between these layers is only three hours. This means that most running gear can be coated in a single day.

Newbuild ships benefit the most from Ecoshield. Applying the coating during building means a vessel's running gear will be protected from the moment the ship leaves the shipyard until the end of its service life. A shipowner will not have to worry about repainting during any of the scheduled dockings.

An existing ship can also be protected with Ecoshield. If for instance a rudder has already suffered corrosion damage, the coating can prevent any further damage from occurring. In such case Ecoshield can be used in combination

with another product in the Subsea Industries family: Ecofix. Ecofix is a superior, tested and proven filler that restores the steel to its original shape with a smooth surface prior to recoating. Because it Uses the same basic resin, Ecoshield can be applied just one hour after the filler.

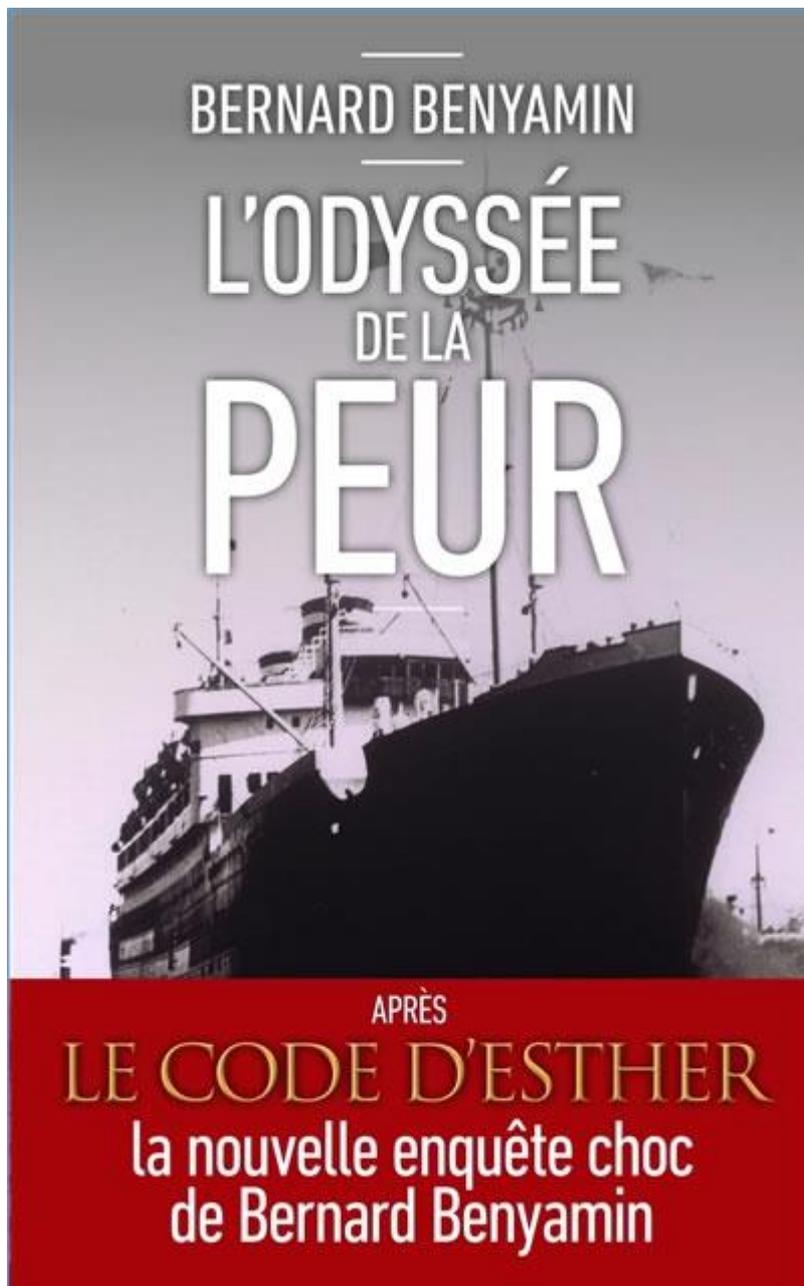
From one rudder to an entire fleet's running gear

Since the original application, over 500 rudders have been coated on a wide variety of ships: cruise ships, cargo vessels, container carriers, ro-ro cargo ships, cable layers, dredgers, crude oil tankers, research vessels, ice-going ships and icebreakers, tugboats, reefers, passenger ferries, bulkers, navy vessels and others. These applications were performed in shipyards across the globe. Shipowners that started with a single rudder as a test have since then ordered the same protection for the running gear of their entire fleet. Several have included the coating in the newbuild specs to make sure cavitation and corrosion cannot touch the steel of their ship's running gear. Even after years of service these owners are experiencing zero cavitation damage and failure.

Inséré 03/07/21 BOEKEN LIVRES BOOKS Enlevé 03/08/21

L'ODYSSÉE DE LA PEUR

Bernard							Benjamin
Éditeur		:		First			Editions
Publié	le	:		19	mai		2016
ISBN		:				978-2-7540-8227-3	
Reliure			:				Broché
Description	:	304	pages;	(23	x	14	cm)
17,95							€



Allemagne, 1939. Les Juifs allemands cherchent à quitter le pays pour échapper à la déportation. Lorsque le consulat de Cuba à Hambourg met en vente des permis de débarquer assortis d'un billet sur un bateau allemand, le Saint-Louis, c'est la ruée. Le 13 mai 1939, le Saint-Louis largue les amarres, destination La Havane. Ils sont 937 à bord, persuadés d'avoir sauvé leurs vies. Le 27 mai, le bateau jette l'ancre à La Havane mais personne n'est autorisé à y débarquer. Les règles ont changé...

Pendant six jours, les négociations vont bon train. En vain. Le 2 juin, le bateau quitte La Havane et fait des ronds dans l'eau au large de la Floride. Pendant ce temps, tout sera fait pour tenter de trouver asile aux États-Unis, au Canada, en Amérique centrale en Amérique latine...

La réponse sera toujours la même : «Non !» Hitler peut exulter les nazis ne sont pas les seuls à rejeter les Juifs ! Le 6 juin, le bateau est contraint de retourner en Europe. Il arrive

à Anvers le 17, où ses passagers sont finalement accueillis par quatre pays européens : l'Angleterre, la Belgique, la France et les Pays-Bas.

Trois mois plus tard, la guerre éclate, les Juifs du Saint-Louis seront déportés parmi les premiers, un tiers d'entre eux périra dans les camps de la mort...

Pour raconter cette histoire, Bernard Benyamin a retrouvé une dizaine de survivants aux États-Unis. Il a eu accès à de nouvelles archives allemandes et américaines jusqu'alors peu exploitées. C'est un Exodus avant l'heure, le symbole de l'égoïsme des nations occidentales face à la tragédie qui se jouait alors en Europe... Un drame qui nous renvoie directement à celui des réfugiés de Méditerranée aujourd'hui.

Inséré 03/07/21 DOSSIER Enlevé 03/08/21

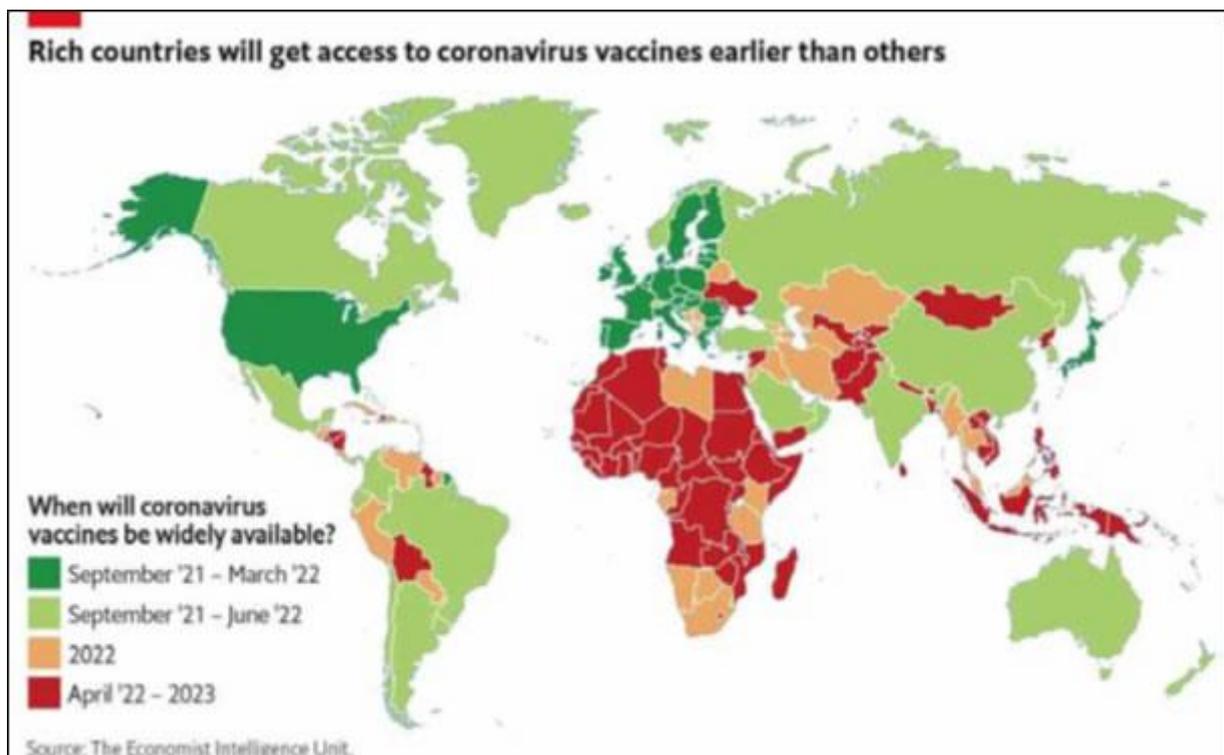
Will Filipino seafarers miss the Covid-vaccine boat?

By : Joost Mes Director at Avior Marine Inc. & President at Dutch Chamber of Commerce in the Philippines

With the arrival of the Covid vaccine it is just a matter of time before the world will be divided into the "have's" and the "have not yet's". Some countries have started vaccinating while many others, like the Philippines, are scrambling to mob up whatever they can get their hands on. Manning about a quarter of the world fleet there is much at stake in getting Filipino seafarers vaccinated as soon as possible. Both for the Philippines as well as the global shipping community.

The Philippines endured the longest lockdown globally and paid a heavy price economically with a 16.5% drop in GDP in the second quarter, the biggest drop in the SE-Asia region according to the IMF. The crewing sector also suffered with the self imposed travel restrictions in the Philippines making it difficult to send or relieve crew and many were replaced by crew from countries with better flight connections and fewer restrictions. But this loss is pale in comparison with the demise of the cruise sector where thousands of crewmembers got shipped back to their home countries without immediate prospect of returning to their job anytime soon. Now with the arrival of the Covid-vaccine on the scene there seems to be a renewed hope over the horizon but how fast will we get there and how would that new world look like? A recent article of Helen Kelly in the Nautilus Telegraph gives a glimpse of the issues ahead. "

... with the start of the vaccinations questions arise over availability and who should be prioritised for the job, and whether governments and private industry might mandate immunisation for access to benefits and services, and ultimately require vaccination for travel and employment purposes" - Helen Kelly / Nautilus The article sums up the issues some of which some are already visible. Airlines might demand vaccinations for travel. Last November Qantas announced it will require vaccinations on all its international flights once available. Frank Del Rio, president and CEO, Norwegian Cruise Line Holdings, advocating crew vaccination and has said his company was looking into whether it has the legal standing to mandate vaccination for guests.



Vaccinations might become a pre-requisite for entry to countries and visa applications. Apparently Schengen countries are considering this option. But also P&I insurers, charterers and ship owners might make vaccination a requirement for their crew. We may

be jumping high or low about the legalities or fairness of such a demand but the bottomline is that we are heading for a 'jab for job' situation. And as seamen and aircrew know, the requirement of having certain vaccinations while traveling the world is nothing new so there is a precedent already. So as far as the 'jab for a job' reality is concerned the question is not if it will happen, but rather how soon this will become a reality.

That probably depends on how ready countries are and how fast they receive the vaccine. For countries like the Philippines and Indonesia the outlook is sobering. According to the The Economist Intelligence Unit more than 85 low income countries will not have widespread access to the vaccine until late 2022 or 2023 and most of those countries are not expected to reach widespread vaccination coverage (60-70%) vaccination before 2023. In contrast to the Philippines and Indonesia, seafarer supplying countries like Eastern Europe, Russia, India and China have the advantage of a locally produced vaccine and are in much better position to move ahead.

So why is the Philippines so late on the vaccine scene? First of all the Philippines is among quite a few countries that did not have the resources or political will to commit and pre-order not knowing the efficacy and timing of potential vaccines. Second the Philippines seems to have placed their bets on the Chinese vaccines Sinovac and Sinopharm. Now that those vaccines are not forthcoming in the way as expected and priced relatively high the country finds itself left behind. It is not that the chances were not there to start with but there seemed to be no sense of urgency. Foreign Sec Locsin blamed 'somebody dropping the ball' on a deal with Pfizer early in the process. But it is always easy to judge in hindsight and with the appointment of Secretary Carlito Galvez Jr as the 'Vaccine Czar' the Administration is trying to make up some of the ground lost. Sec Galvez is the 'Chief Implementer' of the Inter Agency Task Force and as the name implies, he is seen as a straight shooter and someone who gets things done. But he faces an uphill battle.

Vaccine Czar' Sec Galvez : "80% of the global market has been taken by the rich countries. Now we are fighting for the 18% because COVAX has gotten the other (2) percent,"



- ' Despite the late start, the national government is expected to have secured 145 million vaccine doses by the end of January. This is close to the target of procuring a total of 148 million doses, enough to vaccinate up to 70 million Filipinos this year, according to Galvez. That would be an impressive amount of terrain being made up but late arrivers on the scene generally pay a price in terms of timing of the delivery. The first 50,000 doses doses

of the 40 Million doses secured from the COVAX facility might arrive as early as Feb-20 according to WHO representative to the Philippines Dr Rabindra Abeyasinghe, but the rest will probably be arriving over 2021, 2022 and into 2023. A slow start but a start nevertheless.

Another early arrival in February will be fifty thousand doses out of the 25M doses Sinovac secured according to Presidential Spokesman Roque. But there is an issue. Sinovac has managed to put in an application for Emergency Use Authorisation (EUA) but has run into a delay as according to FDA director general Domingo 'the Chinese firm's documents were incomplete. Sinovac only included Phase I and Phase II clinical trial data and have not published any Phase-III clinical data for peer review. So far only Pfizer has been approved by the Food and Drug Administration (FDA) for use in the Philippines, with Astra Zeneca having received EUA (17M doses) but now waiting to receive full marketing authority. Also the Russian Gamelaya has applied for emergency use authorization.



So where do we stand vaccine wise? With news outlets reporting secured doses almost every day it is difficult to get a good overview but fair, let's give the government purchasers time to do their work and hopefully Sec Galvez will update us once the 145 Million doses have been confirmed secured and more importantly the timeline on when we can expect delivery of the batches. From what has been reported so far, expect a slow start in March and a gradual pick up of deliveries in the third quarter of this year. It will probably become a prolonged campaign well into 2022 and even into 2023. For this reason the Administration has decided to prioritize certain groups. As things stand now the groups most vulnerable or at risk like healthcare workers, senior citizens, uniformed personnel and the poor, total about twenty five million citizens will be first in line. After that this group the Philippines prioritizes teachers, government personnel, key workers in local segments, other vulnerable people and OFW (usually seafarers are in this group). In this initial grouping seafarers only find the rest of the (non-essential) workforce and students behind them.

I think not many will argue the prioritization of healthcare workers and those most at risk but it is disappointing to see no recognition is given to the fact that seafarers who are stuck out at sea often isolated and well beyond their contract term, keeping the supply chain going and our shops full, find themselves so low on the list in the Philippines. A country that calls seafarers the 'unsung heroes of the nation' and is signatory to numerous resolutions and declarations considering seafarers as 'key-workers' seems to completely ignore seafarers when it comes to. To have at least a chance at access to vaccines some local Crew Management Companies have joined the 'Dose of Hope' , an initiative of Go Negosyo founder and Presidential advisor Joey Conception. As Dutch Chamber of Commerce we have also facilitated several of our members to subscribe to 40,000 doses of Astra Zeneca in the second wave of 3 Million doses expected to arrive sometime in the third quarter of this year. Under a tripartite agreement between Astra Zeneca, the government and the donors, the donor

procure from AZ doses that will then be donated and delivered in full to the government. For 50% of the donated doses the donor can put forward own employees for vaccination provided, those employees will satisfy the government's priority classification at the time. Donors from the maritime sector of course hoping to put forward their seafarers by that time. There was news of a possible third wave with Novavax but this seems to be postponed. Whatever the case, initiatives like this are a win-win for both the government and the private sector, working together to get this done. Credit to Joey Conception and his team for pulling this off.

Meantime on the international front the Global Maritime Forum launched the 'Neptune Declaration on Seafarer Wellbeing and Crew Change' which, was subscribed by three hundred stakeholders in the maritime logistics chain and is being signed by many more daily as we speak. The first action point is 'Recognizing seafarers as key workers and give them priority access to Covid-19 vaccines'. The International Chamber of Shipping (ICS) and Secretary-General Kitack Lim of the International Maritime Organization (IMO) have made similar calls. Locally MARINA was the first to appeal to the IATF for prioritization of seafarers with Marina Administrator Vice Admiral Robert Empedrad quoted as saying 'they will make sure that Filipino seafarers will be one of the first to be administered with the vaccine, since they are considered "key workers" in the frontline'. And most recently the Maritime Committee representing Maritime Members of the Dutch, German and Scandinavian Chambers of Commerce have send a letter to the IATF requesting the same. The Maritime Committee represents the interests of a substantial number of North European shipowners and operators employing close to 80,000 Filipino Seafarers. In a recent television interview with ANC, the Committee's Chairman Tore Henriksen noted that 'the seafarers were 9th or 10th in the list in the Philippines and that he hoped that the AITF would see it fit to revise that'.

The Philippines stands to loose a lot. Ships have to keep moving to carry those essential goods around and they are not going to wait until the Philippines is ready. With a 'job for a job' reality dawning on the industry owners might have no choice to look elsewhere for crew. Other maritime labour supplying countries like India, Eastern Europe, Russia and China are in a better starting position with earlier access and access to locally produced vaccines. Even Indonesia might be earlier by focusing on the working population first. So keeping Filipino seafarers at the back of the line will have consequences. Both for the families supported by those seafarers, for the economy as well as for the Philippines standing in the maritime world. With a vaccine within reach, the maritime world is moving fast now. To mention some of last weeks headlines, Singapore has just started to vaccinate 10,000 maritime workers and hopes to finish this in the coming week. Bermuda will give priority to vaccinate crew on board one of the ships supplying the island.

Luckily the Covid-vaccine ship in the Philippines has not left yet but the clock is ticking ... let's make sure we are on it Philippines.

Inséré 05/07/21 NIEUWS NOUVELLES Enlevé 05/08/21

LIGHTSHIP WEST-HINDER III RECEIVED CERTIFICATE OF HERITAGE

Last week the lightship **WEST-HINDER III** got the certificate of heritage ! What is very important for the further operations and restoration activities. MPM is member of WEV - Watererfgoed Vlaanderen vzw that covers all Flanders

The certificate was given on Thursday May 20th at the old Antwerp Port drydocks near the new Antwerp Port House from Zaha Hadid. This site will be transformed in a visitors area with ancient ships, open air activities for children and young people. it will also be the

starting point for port visits organised by “ **Educational havencentrum Lillo**” receiving about 50000 people every year !



from left to right Flemish Prime Minister Jan Jambon, the Mayor of Antwerp Bart De Wever and the Minister of Heritage Matthias Diependaele who honoured us with their presence showing the importance give to our activities All 3 photos : Els Van Hoof (c)



left the Minister of Heritage Matthias Diependaele and Luc Hofkens, the chairman of MPM maritime patrimonium

The lightship **WEST HINDER III** operated on the North Sea until 1994 (3 sisterships have been build) was built in 1950 atat Béliard-Crighton in Ostend with a length of 42.48 m, width 7.94 m and draft 3.20 m when operational 10 crewmembers stayed on board for 3 weeks. The actual restoration was done by volunteers and until now with private investors and sponsors ! as from march 2022 the ship will be ready to be visited by the public. It will be an attraction il 2022 in Antwerp (july 22 till july 25 th)