



# The Porthole

Volume 21 No. 8

August 2021

The newsletter of  
the Company of Master Mariners of Australia,  
South Australian Branch

PO Box 1, PORT ADELAIDE, SA 5015

Branch Patron: His Excellency the Honorable Hieu Van Le AC



## Branch Master's Comments

A very good day to all our readers,

Spring is but a few days away, and if it weren't for our seemingly endless plague, things would all be rosy, but things are not as bad here as they are interstate. At least our present social restrictions are allowing us to hold our meetings this month, and more importantly, to gather and have a modicum of social interaction. Our fearless leaders have intimated that the magic 80% of our population to become fully vaccinated will occur sometime around Christmas, allowing our borders to be opened once more. We'll see.

In the meantime, life moves on, and while I am happy to have sold my farm at a good price, I am in somewhat of a quandary as to where I will move to, as there don't seem to be any decent houses for sale in the hills around Stirling. I am sorry to be moving out as the place is looking at its best, with the dams all full and the winter creek flowing at last.

Our August monthly meeting will be held as usual at the Largs Pier Hotel on the last Wednesday of the month (25th) at 1145 for 1200, with the Branch Court meeting one hour before that.

This month I have written to Mr Le, our State Governor, to thank him on behalf of us all for his patronage during his term of office. We must now organise a request for his successor Ms Frances Adamson to assume our future patronage in accordance with a missive sent from Government House to us.

I hope to see any of you who can make it next Wednesday to our meeting.

Until then,

Happy Sailing

Bob W (SABM)

**COVID-19 restrictions permitting, the next Branch meeting will be held at The Largs Pier Hotel. 198 The Esplanade, Largs Bay, on Wednesday, 25th August 2021, at 1145 for 1200. Please confirm your attendance at the lunch or register your apology before 1200 on Monday, 23rd August 2021 with Bob Westley (0427 644 947) or Ian Dickson (0418 807 788)**

## In this issue

<i>The Belgium Solution</i> , by Michael Grey	2
<i>Flawed International Law</i>	2
<i>3D Printing of Crane Hooks</i>	3
<i>The Rising Integrity Threat to Maritime Navigation Data</i>	3/4
<i>Ocean Cleanup Commences Work on the Great Pacific Garbage Patch</i>	4
<i>Remote Survey First, using an under-water drone</i>	4
<i>World's Oldest Ship moved to Grand Egyptian Museum</i>	5
<i>CSSC lays keel for Drone Carrying Autonomous Research Vessel</i>	5
<i>Australia's Iron Ore Price Slumps after China Move</i>	6
<i>Golden Ray Wreck Removal moves to Final Cut</i>	6/7
<i>Russian Short Sea Shipping Plans to By-pass Suez Canal</i>	7
<i>Book Review: "This Thing of Darkness" Harry Thompson.</i>	7
<i>China is Redrawing the World Energy Map</i>	8/9
<i>Study finds Blue Hydrogen worse than Coal or Gas</i>	9
<i>Fully Automated Container Storage System First Successful Trial</i>	10
<i>Drones and Warships to Combat Piracy Hot Spot</i>	10/11
<i>China Installs World's Largest Off-shore Wind Converter Station</i>	11
<i>Branch members only</i>	
<i>Branch meeting 30/06/21, Minutes</i>	12



## The Belgian solution

By Michael Grey

We have more than a million of the world's most essential workers, whose labours have been absolutely essential during this pandemic, but they have the utmost difficulty in getting vaccinated. They are, of course, seafarers, whose itinerant lifestyles mean that they are seldom in one country for any length of time. They are also foreigners, which means that it does not appear to any government, other than their own, that their health or vaccination status is anything to do with them. And most of the time, they spend their lives over the horizon, and effectively invisible, except when they are found to be Covid positive, and everyone wants them to go away.

For the whole length of the pandemic, the treatment of the world's seafarers has been shameful. Crews have been forced to remain at work far beyond the end of their contracts, denied shore leave or any relief, while those who might have relieved them have remained at home, mostly unpaid. The arrival of the vaccine "cavalry", as Boris Johnson called this medical miracle, offered a solution that might have done something to mitigate the grim life of the seafarer. But just as the pandemic itself seemed to bring out the worst in bureaucratic obstacle building, while everyone wants and needs what seafarers carry aboard their ships, the vaccination of this vital international workforce has proved a problem best passed down the line.

The emergence of new variants of the virus have magnified the apparent problems, while the need for specific vaccines to be approved, not just by those dishing it out, but in the ports or airports which seafarers might pass through, has been a major complication. It has not helped that the majority of the international workforce are residents of countries well down the food chain in terms of resources, and that most work aboard open register ships, which almost certainly don't stay in port long enough for two jabs to be given.

There have been some bright spots in this catalogue of unfeeling gloom, which has seen the seafaring workforce treated like lepers in many countries, with ships, in some notable and shameful cases, not even permitted to land their dead. Cyprus, which has a sizeable fleet manned almost entirely by non-Cypriots, has offered vaccines to anyone aboard a Cyprus flag ship. Some parts of the US, where there is a range of approved vaccines on hand, have made them readily available to all seafarers, regardless of their nationality.

And since the end of last month, in an excellent case of thinking outside the box, Belgium has commissioned "roving" vaccination teams to provide the one-jab Johnson & Johnson vaccine to all seafarers using their ports. This is an important advance in thinking, with the Royal Belgian Shipowners' Association acting on a proposal by the Deputy Prime Minister and the Minister for the North Sea, along with the Directorate of Shipping. It is a big deal, if you think of the "throughput" of seafarers aboard ships passing through ports the size of Antwerp and Zeebrugge. And with a single dose vaccine, it is arguable that one problem has been halved, at a stroke.

One must only hope that this example of innovation and leadership quickens the pulse of other administrations that depend so much upon the labours of seafarers, and shows that solutions are perfectly possible, given the will and application of resources. The scheme not only applies to seafarers aboard ships in Belgian ports, but also those who might be joining or leaving ships docked in Belgium.

The Belgian model might also serve to shame some developed and well-resourced countries which depend completely upon shipping for their exports and imports. It has probably taken a certain amount of courage to embark on a scheme that effectively takes responsibility for something that everyone else tended to put in the "too-hard" basket, and for the benefit of non-nationals. But it is apparent that seafarers have suffered long enough in this pandemic, with large numbers of them turning their back on a career that offers little other than exclusion from society and ill-treatment. Some clever folk in Belgium might have done something that is both practical and humane and goes some way to redress the balance.

*Michael Grey is former editor of Lloyd's List.*

Source: *Maritime Advocate* 784

—oo00oo--

## Flawed international law

The consequences of port closures during the Covid-19 pandemic have highlighted flaws in the implementation of international law designed to protect the human rights of those at sea, according to a study by Dr Sofia Galani, Senior Lecturer in Public International Law at the University of Bristol and Human Rights at Sea Advisory Board member.

Speaking to Human Rights at Sea (HRAS), Galani says: "The systematic protection of persons at sea remains flawed. This is not because international law does not afford protection to persons at sea, but rather because the many different legal regimes that apply to persons at sea often clash, leaving them in something of a legal vacuum."

For years, the plight of persons abandoned at sea has gone unnoticed, she says. "The global pandemic has changed this, as the suffering of persons stuck at sea during the pandemic, be it for employment, recreational, migration or other purposes, is now well-documented. The time is ripe to recognise that human rights apply at sea and find effective ways to enforce them.

The right of states to close their ports for public health reasons is recognised under international law, but her study, published in the *International and Comparative Law Quarterly* (Cambridge University Press), highlights examples of how state actions and port closures have left people vulnerable. For example, the crew of the *USS Theodore Roosevelt* only received medical care after their plight was highlighted in the media. By then, around 600 sailors had Covid-19, and one had died. Additionally, migrants have been put at risk, as many states have not made exceptions to their port closures for asylum seekers.

For the full story see <https://www.humanrightsatsea.org/2021/08/11/review-flawed-implementation-of-international-laws-leaves-seafarers-in-legal-vacuum>

Source: *Maritime Advocate* 784

—oo00oo--

## Huisman scales up 3D printing of crane hooks (Press release)

13 July 2021

Huisman, the worldwide provider of step changing technical solutions, has successfully tested four new 3D printed 350mt crane hooks according to the strictest criteria, and under the supervision of the independent certification authority Lloyd's Register.



The hooks are approx. 170 by 130cm in size, almost 9 times larger than the first Huisman 3D printed crane hook. They have a weight of 1,700kg each and a loading capacity of 350mt. Each hook consists of approx. 90 kilometres of welding wire.

Huisman has been employing the 3D printing technique 'Wire & Arc Additive Manufacturing' (WAAM) to produce mid-size to large components with high-grade tensile steel. An important benefit of using this technique for crane hooks is the significant reduction in delivery time at a cost that competes with forgings and castings, and a more consistent quality level.

Huisman has plans to expand its robotic workplace of its production facility in Sviadnov, Czech Republic, which currently holds three welding robots. By upgrading its capacity, Huisman will be able to produce crane hooks with a weight up to 5,000 kg.

**Daniel Bilek, Project Coordinator** said: "Crane hooks are commonly part of the delivery of heavy lifting cranes for the offshore industry, one of our key products. The price of a forged hook increases exponentially with size, especially if it is a non-standard size. If a hook is produced by casting, the problem of inconsistent internal quality could result in longer delivery times. All this led to the idea of making the hooks ourselves, using the so-called WAAM method. After 5 years of research, development and testing of 3D printed products, we have gained the necessary expertise to use this innovative method for the production of high quality crane hooks."

### Main benefits of 3D printed crane hooks:

- ✦ High control over process and material quality
- ✦ Layer-by-layer manufacturing, enabling a new range of component shapes
- ✦ Cost and/or lead time reduction for critical components

Tailor-made material properties within same product: strength, ductility, and wear/corrosion-resistance

Source: Huisman website

—oo00oo--

## The Rising Threat to the Integrity of Maritime Navigation Data

PUBLISHED APRIL 6, 2021 10:15 PM BY GEORGE SHAW

Loss of satellite signal is a well-known operational risk, but few mariners are aware of the threat of GNSS providing a false time, position or



Erroneous AIS data purporting to show the "positions" of vessels affected by GPS spoofing (Illustration courtesy Skytruth)

direction even when still available. When these position errors exceed a safe margin of error, they can cause ships to derive and transmit dangerously misleading information. GNSS is not designed with inherent real-time integrity, which refers to the users' ability to trust the data and receive timely warnings if it is unreliable.

So-called space-based (SBAS) or ground-based (GBAS) augmentation systems provide information about the accuracy, integrity, continuity and availability of GNSS services. The European Union's EGNOS program is a prominent example of an SBAS solution. The UK's recent exit from the EGNOS program means that, although users will still be able to receive EGNOS signals across the UK, they will have no access to the assurances provided by the future EGNOS Safety of Life services - effectively withdrawing assured system level integrity for EGNOS, GPS and Galileo.

Mariners may therefore be unaware of subtle signal degradation or position, navigation and timing (PNT) errors that exceed a safe alert limit, rendering any threats to signal integrity less visible - and therefore even more dangerous than signal outages.

GNSS trustworthiness is under increasing threat from natural signal interference, deliberate jamming, "spoofing," or interception. The scale of the threat was highlighted by research in 2019 showing thousands of ships affected by spoofing incidents around the busy port of Shanghai. Three hundred vessels had their GNSS locations replaced by false coordinates in a single day. One container ship's GPS units, AIS transponder and even its emergency distress system were all affected, and its true position and speed were falsified without the user being alerted to the fact, illustrating the extent to which relying on PNT data without adequate integrity protection can form a single point of failure across all maritime navigational aids.

There are many reasons for this kind of erroneous data. While some ships may nefariously "clone" the AIS systems of licensed vessels or interfere with their own GNSS receivers to conceal illicit activities, erroneous position reports can occur for any vessel. Onboard or land-based systems can produce accidental interference with GNSS receivers, for example, misleading data can also come from natural

causes, such as space weather, which poses a recurring risk of low-level signal degradation and interference. So-called "black swan" space weather events such as the 1859 Carrington event could trigger electromagnetic storms that would cause severe global disruption.

Discrepancies between GNSS and a ship's radar picture cause confusion, and are dangerous in areas of dense, complex traffic and poor visibility. At worst, they can even lead to vessels migrating dangerously off course and into the path of obstacles.

This issue will be further exacerbated on autonomous vessels, where decision-making is based on artificial intelligence and conflicting inputs will be difficult to resolve. Moreover, modern navigation systems are electronically intertwined into a mutually dependent "system-of-systems", so navigational errors on a single ship will have a ripple effect across an entire fleet.

Trustworthy precision navigation is more essential than ever, with shipping lanes increasingly squeezed by the growth in the size and volume of vessels at sea, the necessary expansion of offshore windfarms, sea space designated for environmental protection, and areas dedicated to 'blue economy' uses like aquaculture. With global seaborne trade set to double by 2030, accurate and reliable PNT data will become even more pivotal to the safety, efficiency and reduced environmental impact of trade flows.

There is a strong international policy focus on resilience and availability of GNSS, and within those initiatives we must see a clear focus on ensuring the integrity and operational continuity of GNSS data. Mariners and policymakers need to recognize that lack of PNT integrity poses a growing threat to maritime safety and efficiency.

The EU's EGNOS Safety of Life alert-of-systems. This service is a response to this for its members, and the UK government is examining potential solutions for a more resilient and trustworthy PNT system. It is imperative that we see similar efforts worldwide so that navigational data is consistently resilient, trustworthy, accurate and available across global shipping lanes.

*George Shaw is the Principal Systems Engineer for the General Lighthouse Authorities of the UK and Ireland.*

Source: *Seatimes August 2021*

—oo00oo--

## The Ocean Cleanup Deploys Full-Scale System to The Great Pacific Garbage Patch

Mike Schuler August 10, 2021

The Ocean Cleanup has deployed its first full-scale system designed to clean-up ocean plastics to the Great Pacific Garbage Patch.

The system, known as System002 or "Jenny", left Victoria, British Columbia, last month on board a Maersk offshore supply vessel. "Jenny" builds on earlier tests conducted in 2018 and 2019 and is the first full-scale system (800 meters in length) to be tested. Compared to the earlier systems, "Jenny" is larger and includes new technology such as active propulsion.



Image courtesy The Ocean Cleanup

Founded in 2013, The Ocean Cleanup's mission is to develop and advance technologies to clean-up plastic pollution at sea and also stop the inflow via rivers. Over the last several years, the company has been developing a large-scale system that essentially concentrates floating plastic for removal. The company then uses the plastic to create products that help raise funds for its efforts.

The company continues to aim for the removal of 90% of ocean plastic by 2040.

The Ocean Cleanup and Maersk Supply Service have been working together since 2018, and, earlier this year, agreed to a new 3-year partnership. Maersk

Supply Service role is to provide marine offshore support and also end-to-end supply chain management.

With "Jenny" now in place at the Great Pacific Garbage Patch, The Ocean Cleanup is set to conduct more than 70 tests planned for the next 6 weeks.

The Ocean Cleanup ultimately aims to deploy dozens of the systems to the Great Pacific Garbage Patch over the coming years. If successful, the fleet could be enough to remove half of the nearly 2 trillion pieces of plastic estimated to be floating on or near the surface of the Pacific Ocean in just five years.

Located between California and Hawaii, the Great Pacific Garbage Patch is the largest concentration of ocean plastic in the world.

Source: *gCaptain 210811*

—oo00oo--

## Remote survey first.

Bureau Veritas (BV), a world leader in testing, inspection, and certification, has successfully completed, together with MaDfly (Marine Drone Services - a service provider), the first full in-water ship's hull survey with a mini ROV on Brittany Ferries' ship *Bretagne*.

The survey, which was supervised by Bureau Veritas on behalf of the French flag, provided an opportunity to validate the integrity of the entire hull bottom. Efficient underwater inspections of shipping vessels are playing an increasingly important role for the industry as a substitute for docking surveys at agreed intervals or occasional surveys of hull damage.

This inspection was the first of its kind – the test survey was performed twice. A remotely operated drone performed an in-water survey with a BV surveyor on-board the vessel. In parallel, Bureau Veritas tested the capability with its own remote inspection solutions using full HD live video footage from MaDfly. This enabled BV to carry out the survey remotely without any attendant surveyor on-board with live streaming, as well as video and audio recording and photo options.

Source: *Maritime Advocate 784*

—oo00oo--

## World's Oldest Ship moved to Grand Egyptian Museum

by Sameh El-Khatib (Reuters) August 15, 2021

King Khufu's Boat, an ancient vessel that is the oldest and largest wooden ship discovered, has been painstakingly moved from its longstanding home next to the Giza pyramids to a nearby giant museum, officials said on Saturday.



King Khufu's solar boat is displayed at a museum on the northern side of Khufu's Great Pyramid, in Giza, Egypt, August 31, 2016. Picture taken before it was moved to Egypt's Grand Museum. REUTERS/Mohamed Abd El Ghany/File Photo

The 4,600-year-old vessel, also known as the Solar Boat, was moved to the nearby Grand Egyptian Museum (GEM), due to be inaugurated later this year.

"The aim of the transportation project is to protect and preserve the biggest and oldest organic artifact made of wood in the history of humanity for the future generations," the tourism and antiquities ministry said in a statement.

It took 48 hours to transport the cedarwood boat, which is 42 meters (138 feet) long and weighs 20 tons, to its new home. It arrived at the GEM in the early hours of Saturday, the ministry said.

The boat was transported as a single piece inside a metal cage carried on a remote-controlled vehicle imported especially for the operation, said Atef Moftah, supervisor general of the GEM project.

The vessel, discovered in 1954 at the southern corner of the Great Pyramid, has been exhibited for decades at a museum bearing its name at Giza Plateau.

Egypt says the Grand Egyptian Museum, which has been under construction intermittently for 17 years, will contain more than 100,000 artifacts when it opens.

(Reporting by Sameh El-Khatib Writing by Mahmoud Mourad Editing by Frances Kerry, Reuters)

Source: gCaptain 210816

—oo00oo—

## CSSC Lays Keel for Drone Carrying Autonomous Research Vessel

Published July 26, 2021

A Chinese research institute has commissioned what may well be the first autonomous oceangoing research vessel with the capability of launching its own drones, and construction is now underway



Courtesy Southern Ocean Laboratory

The Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai) ordered the novel ship from CSSC's Huangpu Wenchong Shipyard in December. The vessel's dimensions are substantial, at 290 feet in length and about 2,000 dwt - nearly the size of a typical U.S. Navy-owned manned research vessel. Its capacious back deck is designed to carry "dozens" of unmanned systems for autonomous deployment in batches, and it has twin A-frames for over-the-side operations.

The ship will be equipped for autonomous navigation, with human pilots to take her in and out of port. The objective is to send it on marine survey missions without personnel on board. It will be equipped with unmanned systems and drones that it can launch and recover on its own. All of its core technology is Chinese,

according to the builder.

"The power system, propulsion system, intelligent system, and survey operation support system it carries are all made in China, and the core technology can be independently controlled," said Fan Lei, chief architect of CSSC Huangpu Wenchong.

The operational objective is to use the ship's drones in a coordinated formation to examine a three-dimensional target - a system that the Southern Ocean Laboratory has named "Intelligent Fast Mobile Ocean Stereo Observation System (IMOSOS)."

"This mothership itself has more than 50 unmanned systems mounted on it, including our unmanned aerial vehicles . . . as well as the unmanned surface vehicles, there are diesel-powered, wave-powered and solar-powered ones. For underwater, there are smart profile buoys, which can make observations from surface to underwater, and also the underwater [glider]," explained Dr. Zhang Yunfei, founder and president of Zhuhai Yunzhou Intelligence Technology and the force behind the IMOSOS concept. "The system spans about 100 kilometres in diameter, four kilometres into the air, and four kilometres into the water surface, covering a 3D area in the sea, to make a large-scale, comprehensive and simultaneous observation from multiple nodes."

The capabilities provided by a drone-enabled sensor mesh could have possible crossover applications for anti-submarine warfare and C4ISR in the China Southern Ocean Laboratory's primary area of operation, the South China Sea.

Source: The Maritime Executive 210726

—oo00oo—

## Australia's iron ore price slumps after China move

in Commodity News 02/08/2021

Iron ore prices have dropped under \$US200 a tonne for the first time since May as Australia's biggest buyer, China, threatens to reduce its orders while diplomatic relations between the two countries remain frosty.

The price of Australia's most valuable export commodity slumped by 3 per cent to US\$195 (A\$264) a tonne, with concerns China is accelerating measures to reduce its dependence on Aussie iron ore. Chinese policymakers have flagged a move to cut its steel outputs in the second half of this year, partly to reduce carbon emissions.

But, in the near future, it would be very challenging for China to move away from its more than 50% dependence on Australian iron ore, noted Commonwealth Bank's mining and energy economist Vivek Dhar.

"Over the medium term, China could reduce its dependence on Australian iron ore by increasing iron ore imports from other countries, boosting domestic iron ore supply, increasing scrap steel usage and reducing steel production altogether," he said.

"The last two measures are likely to happen regardless of Australia China tensions." Iron ore is critical to Australia's economy. Treasury predicts the value of the market will jump from \$103 billion last year to \$136 billion this financial year.

But China is "deeply unhappy" with the fact the country has limited options when it comes to iron ore, said Michael Shoebridge, director of defence, strategy and national security at the Australian Strategic Policy Institute.

"I think that the Chinese government wants its steel makers to diversify, but that's easier to say and hard to do. They will try and use more domestic steel and iron ore, but the quality and nature of that is just a big cost driver, that is something the companies don't want to do and it undercuts their market position. I can imagine the Chinese government trying to force a collective pricing on their steel companies but they have had real trouble doing that to date," he told news.com.au.

"I think global iron ore supplies will keep giving them limited options. Getting Brazil up to scale reliability is very difficult and even if they are bringing on new African deposits, it can't replace the competitive price and level of volume that Australian miners have."

While China will do its best to follow through with the threat to reduce its iron ore orders, it will be hard with the scale of construction still planned in the country, said Mr Shoebridge.

"They really resent the dependency and resent the price of iron ore. But when you look at what they are still doing and the scale of urbanisation that is still going to happen over the next couple of decades – they are still putting hundreds of millions more people in cities and cities are based on steel and concrete, and their export engine still requires steel too, so they can't get away from needing iron ore," he said.

"Australia's investment in large-scale production means little escape for China from Australian supply. There is a reason the Treasury puts projected prices in of US\$50 (A\$67) a tonne as it knows the current price levels can change markedly, but the good news is Australian miners remain profitable even below US\$50 (A\$67) a tonne."

Mr Shoebridge called on Australia to shore up its own future and diversify what it does with its iron ore, such as using renewable energy to make clean steel by partnering with countries like the US, Germany and Japan, rather than China.

"That sounds hard to do, but the more the Chinese government wants to use market access as a weapon the more other economies will work around that," he said.

"Climate change is also an opportunity to change the driver of steel and these sound kind of aspirational, but the speed of technological change and increasingly corporate focus on climate change makes these aspirations more realistic."

Source: [news.com.au/Shipping/News](https://news.com.au/Shipping/News)

—oo00oo—

## Golden Ray Wreck Removal Moves to Final Cut

Mike Schuler August 16, 2021

Nearly two years after the grounding of the *Golden Ray*, the end is nearly in sight for the wreck removal operation.



The VB-10000 began a refitting period on Sunday to prepare for the final cutting operation on the remainder of the *Golden Ray* wreck. Two sections remain. St. Simons Sound Incident response photo.

The St. Simons Sound Incident Response reported Sunday that crews had removed Section Six after locating and securing the source of an oil spill that had been hampering the effort. Section Six was lifted and loaded onto a dry dock barge on Friday for towing to a response facility south of Mayor's Point Terminal, which took place on Saturday.

The operation wasn't without its problems. Approximately 25 pollution response vessels quickly mitigated an oil discharge using oil skimmers, Current Busters and sorbent boom during the final lift of the section. In total, on-water pollution response crews recovered approximately 2,300 gallons of oil during lifting operations on the section that began on July 31.

"We greatly appreciate the patience and support of the community as we complete another significant step in removing the *Golden Ray* wreck from St. Si-

mons Sound," said U.S. Coast Guard Cmdr. Efen Lopez, federal on-scene coordinator. "Our personnel continue to ensure our safety priorities are met throughout all operations from the wreck site to the shoreline."

Responders are now nearly ready to remove the last two sections in the wreck removal operation.

The VB-10000 has since entered a refitting period to prepare for the final cutting operation to separate the two remaining sections of the wreck. Meanwhile, on shore clean-up crews have continued to respond to oiled shorelines and as many as 20 Royal Tern birds found on Bird Island. "Several factors, including the age of the chicks, the amount of time they had been oiled prior to capture, and the delicate nature of the species contributed to the challenge of successfully rehabilitating and safely releasing these young birds back into the wild," said Oil Programs Manager Michelle Knapp of Tri-State Bird Rescue & Research, Inc.

The 656-foot *Golden Ray* was carrying over 4,000 vehicles when it capsized suddenly during a turn as it departed the Port of Brunswick on September 8, 2019, and came to rest on a sand bar.

Wreck removal involves using the VB-10000 to cut the wreck into eight sections for removal by barge. With the Section Six completed, one cut and two sections remain.

Source: gCaptain 210817

—oo00oo—

## Putin Reviews New Short Sea Shipping Plans to Bypass Suez Canal

John Konrad July 24, 2021

This week Russian President Vladimir Putin met with the country's shipbuilding executives to review plans to prioritize short sea shipping with the hope of bypassing the Suez Canal.

"We are focusing on the South-North corridor, primarily moving cargo via the Caspian Sea," said Alexei Rakhmanov, Chief Executive of United Shipbuilding, Russia's largest shipbuilding company. "This year, we are starting to design a containership that will ply the Caspian Sea with Helsinki as its final destination. In this way, we will be opening up routes that do not depend on foreigners."



Official photo of Russian President Vladimir Putin's meeting with United Shipbuilding Corporation CEO Alexei Rakhmanov. Photo via The Kremlin

According to the Kremlin, by building smaller vessels capable of short sea shipping, it's possible to load cargo in northern Iran or western China and take it to Helsinki via the Russian Port of Olya on the Caspian Sea. They believe this route will take only seven or eight days to reach Helsinki from Olya at an average speed of 10 knots.

"We are zealously working on many new products," said Rakhmanov. "In the case of civilian shipbuilding, I am referring to the opening of basically new segments, including small boats, which few businesses have dealt with systematically, and solutions for Russian cities."

"The main question is the cost of this shipment. We are working on it jointly with shipping companies." Putin was told the route north will include navigating the Volga River, then the Volga-Baltic Waterway, and the Moscow Canal to St Petersburg. Vessels could go as far as the White Sea, but the scale would be a bit smaller there,

with smaller cargoes.

In the United States, the Maritime Administration, under Trump, prioritized short sea shipping as a solution to congested highways and failing infrastructure in today's era of megaships. President Biden, however, has not included much in the way of short sea shipping or port subsidies that could solve America's infrastructure problems and significantly reduce carbon emissions. Biden has also failed to nominate a chief of the US Maritime Administration, the federal agency tasked with solving the problem. In Europe, the use of short sea shipping vessels is already common but 50% of the shortsea fleet is more than 20 years old, with Toepfer Transport suggesting 24% of the fleet will reach the end of their economic life in the next five to 10 years.

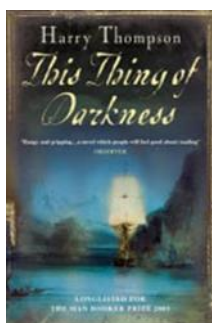
### Russia's Other Plan To Bypass The Suez

This is not Russia's first plan to bypass the Suez Canal. In March President Vladimir Putin revealed a plan to capitalize on the polar ice melt from global warming by investing in Arctic shipping and development. This plan to reroute cargo via the Arctic will also require shipbuilding efforts, and, this week, Russia announced plans to build new icebreakers that are powered by liquified natural gas. Russia already has numerous heavy icebreakers (including heavy nuclear ships), while the United States doesn't have a single heavy icebreaker that doesn't catch fire and break down routinely.

Source: g Captain 210726

—oo00oo—

**"This Thing of Darkness."** An historical novel by Harry Thompson, reviewed by "riverwillow" Sep 4, 2008.



"On the surface this is a tale of scientific discovery overtaking Christian doctrine. But the novel encompasses more than the fundamental division between two men, Fitzroy, Captain of *HMS Beagle*, and Darwin, and their beliefs. It focusses on Fitzroy, the idealistic Christian, who believed that all men, whatever their race, were equal before God, a view which later resulted in his recall to England from being Governor-General of New Zealand. It is his idealism which brings him most into conflict with Darwin, and also with the Victorian establishment. Fitzroy, portrayed as a man ahead of his time, brought a discipline to the crew of the *Beagle* which undoubtedly saved their lives, and developed a system of weather forecasting which was rejected by the establishment because keeping trawlers in port was costing too much money.

Fitzroy also had a secret: he suffered from manic depression throughout his life, and the novel explores how the crew of the *Beagle* and Fitzroy dealt with his symptoms.

This is an amazingly complex novel addressing issues which are still the subject of passionate debate today."

*Editor's note: A fascinating, enthralling read, delving into the science and mores of the day (1830s). Thoroughly recommended!*

## China Is Redrawing The World's Energy Map

Bloomberg August 10, 2021

By Clara Ferreira Marques (Bloomberg Markets)

China's outsize energy needs and its reliance on overseas suppliers have underpinned its foreign policy for decades. Now those needs are changing. The planet's largest oil and coal importer wants to become greener and more self-reliant and has already taken strides toward those goals. The shipping world needs to pay attention.

By 2060 the world's second-largest economy aims to transform its power generation mix from roughly 70% from fossil fuels today to 90% from renewable sources such as wind and solar, as well as hydro and nuclear power, according to BloombergNEF's China Policy Bulletin in April. That will cut its reliance on resource-rich jurisdictions and on sea lanes controlled by other states. In fact, Beijing's dominance of battery materials and production may leave the rest of the world uncomfortably dependent on China in the green economy. The Western response—including U.S. government spending on technology research, mining, and processing, and a European effort to build up supply chains and recycling capacity—is just beginning.

Energy security, always a worry for China, gained more attention after the Sino-Soviet split in the 1960s ended the supply of Soviet crude. It became a bigger priority when China became a net oil importer in the 1990s. Last year, China accounted for roughly a sixth of global oil consumption. Just over 70% of that came from overseas. Oil and gas from Chinese-held investments abroad satisfied less than a fifth of its domestic demand, and much of that fuel travels through chokepoints like the Straits of Malacca that are vulnerable to a naval blockade, in Beijing's eyes.

President Xi Jinping's focus on net-zero emissions by 2060 is, yes, an effort at climate leadership from the world's largest greenhouse gas producer, and a recognition of the importance of environmental goals. But diversifying China's energy sources and increasing efficiency are valuable aims for reasons that are geostrategic, too. The 14th Five-Year Plan earlier this year paired green ambition with a focus on economic recovery and security, with references to the efficient use of coal, the expansion of oil and gas stockpiles, and exploration at home. Beijing has sought to build up its Strategic Petroleum Reserve. The move away from hydrocarbons is a shift toward alternatives where Beijing has a tighter grasp of the supply chain.

That change won't be instant. China's energy consumption increased last year, even as the pandemic led to a drop around the world. Heavy industry is proving tough to decarbonize. The National Energy Administration has come under fire for being too lax on new coal plants, and the dirtiest fossil fuel will still account for more than half of China's energy mix in 2021. That can't be reduced quickly; Beijing will continue to lean on coal-fired power as long as economic growth remains the top priority.

China's oil consumption is also still rising. While it may peak this decade, as China National Petroleum Corp. forecasts, it won't drop rapidly from there. Much will depend on how quickly China electrifies its passenger vehicle and truck fleet. Bo Kong, at the University of Oklahoma, who has written extensively on Chinese energy policy and national security, says oil will also remain necessary for modern warfare. Gas, seen in Beijing as a transition fuel, will take even longer to fade. There won't be an all-or-nothing switch into solar panels and carbon capture storage.

Still, China's energy transformation may well come faster than many suppliers and rivals are prepared for.

Consider Russia, which has a political and economic system that leans heavily on hydrocarbons. With no Plan B, it needs Asia, and China in particular, to keep consuming enough fossil fuels to make up for weaker demand elsewhere. So President Vladimir Putin's government is spending more than \$10 billion on railroad upgrades to boost coal exports to big Asian markets. Rosneft PJSC, the country's biggest oil producer, has ties with its Chinese counterparts. Mainland investment is crucial to Arctic gas plans, too. What happens in Moscow if Beijing moves too swiftly?

Saudi Arabia has also been pivoting toward Asia as Europe sets the pace on decarbonization. China, where Saudi Arabia already vies with Russia as the top oil supplier, is the largest market. While China's short-term dependence on the Middle East may well increase, the political repercussions of a faster-than-expected shift would be dramatic.

The future looks even bleaker for countries that relied on resource-backed loans from Beijing, and Angola has already pushed back repayments. That's before considering the impact of shifting energy financing priorities—in June, China's largest bank scrapped plans to fund a \$3 billion coal-fired plant in Zimbabwe.

As the world heads toward a renewable energy mix, Beijing is poised to claim greater control of what comes next. Take cobalt, a crucial component in batteries. Chinese-owned companies have invested heavily in Congo, the world's largest source of the metal, and dominance is greatest in cobalt refining. It's a similar story with lithium, where China accounts for almost three-quarters of lithium-ion battery manufacturing capacity. Roughly half of electric cars are made in China.

Greater self-reliance doesn't have to lead to hoarding or autarky. China will ship battery metals and finished products to the West, too. And, after all, China has been diversifying its energy sources for years, building oil and gas pipelines through neighbours such as Myanmar, Russia, and Kazakhstan to avoid dependence on ocean routes. But an electrifying China will be in a very different negotiating position.

China's energy consumption has affected its diplomacy for decades. It became a bigger player in the Middle East—where it's managed to avoid political entanglement, balancing relations with Iran, Saudi Arabia, and Israel—and has ventured into Venezuela and Sudan, pouring overseas development finance into fossil fuel production. As a latecomer to major hydrocarbon investments, China was less able to compete in established jurisdictions, and so it pushed to go where others feared to tread, says Xuanli Liao, a lecturer on international relations and energy security studies at the University of Dundee in Scotland.

It hasn't always gone to plan. Some investments proved hasty or unwise and some political crises hard to manage. Yuan-denominated

oil remains a small fraction of the world crude market, despite China's efforts to muscle into the U.S. dollar-heavy commodities trade. The idea that owning equity shares of oil fields and producers would significantly increase security proved misguided.

Beijing's diplomacy doesn't focus exclusively on satisfying resource hunger. China's Arctic policy is concerned with access to alternative shipping lanes and broader geopolitical clout, not just oil, gas, or rare earth minerals. In Africa, it's won political support for its claim to Taiwan—in addition to crude. China's dispute over territorial claims in the South China Sea isn't primarily about oil and gas. But energy concerns, so central to national security, are never far away. Energy is the glue for international relationships, even when it's China that's building and maintaining the nuclear plants or financing coal power.

That adhesive is changing. The global pivot to a green economy means dealing with different materials and industrial processes. We may still need oil, gas, and coal for some time—but also more copper, nickel, cobalt, lithium, graphite, and even rare earth minerals for renewable energy, batteries, and the leap into electrification.

That will transform the ties binding China to suppliers even if, in the short term, as Erica Downs at the Centre on Global Energy Policy at Columbia University's School of International and Public Affairs points out, the volumes required mean it will still lean on the likes of Saudi Arabia's Aramco, Russia's Rosneft, and Brazil's Petrobras. While some countries, such as the United Arab Emirates, have sought to diversify into solar and forge other ties with China, not all have.

China's relationships with Europe and the U.S. could also change. China accounts for 4% of the world's petroleum output and a roughly similar proportion of its natural gas. By contrast, it mines almost 60% of the world's rare earth minerals used in rechargeable batteries for electric cars, lasers, and wind turbines and processes more. China is the largest aluminium producer by far and dominates the extraction of graphite used in solar panels and batteries. Beijing has a tight grip on lesser-known minerals such as scandium, germanium, and tungsten—all on the European Union's critical list of resources with high economic importance and at risk of supply disruptions, as Western governments begin to face the reality of their own vulnerabilities.

There are challenges for China. For one, managing the country's strategy with a handful of national oil companies is easier than handling dozens of enterprises and negotiating with a range of producing nations. The technical capabilities of bureaucrats and diplomats will need to improve, says Michal Meidan of the Oxford Institute for Energy Studies. Ownership isn't enough to exercise control.

New sources of conflict may emerge, too. Hydropower was a key plank of the 2060 plan to hit carbon neutrality. Damming rivers is a quick way to produce clean energy, and China already accounts for more than a quarter of the world's total hydropower capacity. But China's position upstream on crucial waterways like the Mekong or the rivers that flow off the Tibetan plateau could become a problem for its downstream neighbours.

While it's unclear if a more confident and independent China will behave differently on the global stage, Beijing has prepared for the future of energy. So should the rest of the world.

*Ferreira Marques is a Bloomberg Opinion columnist covering commodities and environmental, social, and governance issues. This column doesn't necessarily reflect the opinion of Bloomberg LP and its owners.*

Source: gCaptain 210811

—oo0oo—

## Study finds Blue Hydrogen worse than Gas or Coal

Adis Ajdin August 16, 2021

The carbon footprint of creating blue hydrogen is more than 20% greater than using either natural gas or coal directly for heat, or about 60% greater than using diesel oil for heat, according to joint research by Cornell and Stanford universities in the US.



Xodus

The paper, which was published in *Energy Science and Engineering*, warned that blue hydrogen may be a distraction or something that may delay needed action to truly decarbonise the global energy economy.

A research team claimed blue hydrogen requires large amounts of natural gas to produce and said that even with the most advanced carbon capture and storage technology, there are a significant amount of CO<sub>2</sub> and methane emissions that won't be caught.

Professors from the universities calculated that these fugitive emissions from producing hydrogen could eclipse those associated with extracting and burning gas when multiplied by the amount of gas required to make an equivalent amount of energy from hydrogen.

The paper comes hot on the heels of the United Nations' Intergovernmental Panel on Climate Change report, claiming methane has contributed about two-thirds as much to global warming as CO<sub>2</sub> and that many governments are looking to invest in hydrogen production.

Robert Howarth, a Cornell University professor and co-author of the study, said: "Political forces may not have caught up with the science yet. Even progressive politicians may not understand for what they're voting. Blue hydrogen sounds good, sounds modern and sounds like a path to our energy future. It is not."

The UK is high up on the list of countries aiming to put blue hydrogen at the core of its energy transition agenda. UK energy consultancy Exodus recently launched a new report urging a bolder vision to enable the country to become a global leader in the adoption of hydrogen. The researchers, on the other hand, recommended a focus on green hydrogen, which is made using renewable electricity to extract hydrogen from water, leaving only oxygen as a by-product.

"This best-case scenario for producing blue hydrogen, using renewable electricity instead of natural gas to power the processes, suggests to us that there really is no role for blue hydrogen in a carbon-free future. Greenhouse gas emissions remain high, and there would also be a substantial consumption of renewable electricity, which represents an opportunity cost. We believe renewable electricity could be better used by society in other ways, replacing the use of fossil fuels."

Source: Splash247 210816

—oo0oo—

## Fully Automated Container Storage System makes First Successful Trial

Adis Ajdin August 19, 2021

DP World has completed testing of the Boxbay fully automated container storage system at its Jebel Ali terminal in Dubai, accomplishing more than 63,000 container moves since the facility was commissioned earlier this year.



The facility, which can hold 792 containers at a time, exceeded expectations, delivering faster and more energy-efficient than anticipated, the Dubai-headquartered terminal operator said.

The solar-powered system stores containers in slots in a steel rack up to eleven high. DP World claims Boxbay delivers three times the capacity of a conventional yard in which containers are stacked directly on top of each other, reducing the footprint of terminals by 70% and energy costs by 29%. Boxbay delivered 19.3 moves per hour at each waterside transfer table to the straddle carrier and 31.8 moves per hour at each landside truck crane.

Boxbay is a joint venture between DP World and the German industrial engineering specialist SMS group. The system moves containers in, out and between slots with fully electrified and automated cranes built into the structure, and can access them without moving any others.

“This test proves that Boxbay can revolutionise how ports and terminals operate. The technology we have developed with our joint venture partner SMS group dramatically expands capacity, increases efficiency, and makes the handling of containers more sustainable,” said Sultan Ahmed bin Sulayem, group chairman and CEO of DP World.

Source: *Splash247*

--oo0oo--

## Will Drones and Warships Be Enough To Tackle The World’s Latest Piracy Hotspot?

By Libby George (Reuters) 21 August 17, 20

Helicopters hover above a patrol vessel in Nigeria’s frenetic Apapa port as attack boats zoom past. On the dock, drones emblazoned with the Nigerian flag sit ready to deploy – all part of a \$195 million U.S.-backed “Deep Blue” initiative to deter pirate attacks in the world’s most dangerous area for seafarers.



The more than 2.35 million square kilometre (910,000 million square mile) expanse of the Atlantic Ocean that borders some 20 West African nations is known as “pirate alley,” where nearly all the world’s kidnappings at sea now take place since the water off Somalia in East Africa has become more secure.

Bashir Jamoh, head of the Nigerian Maritime Administration and Safety Agency (NIMASA), said “Deep Blue” had stemmed recorded kidnappings in the second quarter, after a record 130 sailors last year, compared with five in the rest of the world.

But there have already been 50 kidnappings logged this year and the U.S. navy is helping with training and European navies are assisting in patrols, a mark of their concern for a region that is a key global supplier of crude oil.

“If the threat to their ships is not addressed, the entire international trade is affected,” Jamoh said.

Unlike in Somalia, which had no navy and limited government capability and thus allowed foreign navies to fire on ships and arrest pirates, only Nigerian security forces are allowed to be armed in the country’s large territorial waters.

“Nigeria is going to take the lead,” Jamoh said.

Lurking beneath the government’s new show of maritime strength is poverty in the Niger Delta, where nearly all West Africa’s pirates originate.

Pollution in the region where international and local firms churn out Nigeria’s oil means people cannot farm or fish, and 70% of its roughly 30 million people earn less than \$1 per day, according to the United Nations, making piracy attractive.

The U.N. Officer on Drugs and Crime (UNDOC) said collusion between some members of the security forces and pirates as well as scant prosecutions for kidnappings must also be tackled.

“The issues that caused this in the Niger Delta have not been addressed,” said Max Williams, chief operating officer at security firm Africa Risk Compliance. “They still have the weapons, they have the boats, they have the fuel to kidnap people from these vessels.”

The Nigerian navy said this year it would strengthen measures to root out and punish security personnel who collude with kidnappers and criminals.

### Piracy costs billions

Piracy is nothing new to Nigeria, but the number and range of kidnappings has shot up, with oil tankers, container ships and fishing boats at risk even 210 nautical miles offshore.

Kidnappings for ransom accounted for only 15% of attacks in 2009, according to UNDOC; by 2020, these made up nearly all attacks as ransoms became more lucrative than any cargo.

The cost of freeing a group of hostages roughly doubled to up to \$300,000 from 2016 to 2020, according to UNDOC, which estimated that Niger Delta-based pirates netted \$4 million in ransom payments last year.

The sum pales compared with Somali pirates' more than 1,000 captives in 2010, but Nigeria's vice president put the economic cost in the billions, stifling much-needed development in a region disproportionately dependent on seaborne imports.

Jakob P. Larsen, head of maritime and cybersecurity at shipowner association BIMCO, said many ship owners simply refuse to ply the waters, pushing up costs, while crew also refuse to sail in the region – and can demand double pay if they do.

Pirates typically take kidnapped sailors to the Delta's swampy, snaking creeks, where they face malaria, typhoid and attacks from rival bands of kidnapers. Nationwide, kidnappings have spiked over the past year as the economy faltered.

In January, a seafarer from Azerbaijan died during a kidnapping, and two others of unspecified nationality died of sickness during abduction in 2020.

The Danish, Italian and Portuguese navies are also sending assistance, and, early this month, a hulking U.S. expeditionary base – the USS Hershel "Woody" Williams – docked to help train regional security to use the new kit.

Commanding Officer Captain Chad Graham, asked about the underlying issues, told Reuters piracy was a "shore-based problem" but he and U.S. Consul General Claire Pierangelo both said they were hopeful kidnappings would fall as the economy recovered from last year's coronavirus body blow.

Some pirate kingpins are well connected and have serious regional clout, UNDOC found.

The navy also offers shippers, who are not allowed private armed security, navy escorts, and extra protective services, an economic link Larsen said was unfortunate. "It introduces a conflict of interest because there is a money stream," he said.

NIMASA and the navy did not respond to requests for comment.

Insurance companies, led by underwriters Lloyd's Market Association (LMA), expanded the size of the area in the Gulf of Guinea included in the highest-level risk last year.

Neil Roberts, LMA's head of marine and aviation, said despite Deep Blue, they were unlikely to change their assessment. He cited social unrest in the Niger Delta and the "distressed fabric of the Nigerian economy."

"As long as that's there, the extra risk will remain," he said.

*(Additional reporting by Angela Ukomadu in Lagos and Camillus Eboh in Abuja; editing by Philippa Fletcher, Reuters)*

Source: gCaptain 210818

--oo00oo--

## China Installs World's Largest Offshore Wind Converter Station

gCaptain August 10, 2021

The installation of the world's largest offshore converter station is being hailed by China Classification Society (CCS) as a milestone in the development of deep-water wind power.



China Three Gorges Corporation (CTG) RUDONG offshore wind converter station

CCS says the facility effectively addresses the challenges of large capacity and long-distance power transmission presented by offshore wind farms. RUDONG is the first offshore  $\pm 400$  kV wind power flexible DC transmission project in China. The station will be used to collect 1,100 MW of electric energy from three windfarms in the JIANGSU RUDONG project in China's Yellow Sea.

The station will then convert the electricity into DC power and transmit it onshore, a distance of around 100km, the longest transmission length in China, via a submarine cable. When the project is fully operational it will be able to provide 1.36 million households with their annual electricity consumption, helping China to move closer to its '3060' double carbon reduction target. Compared with coal-fired power plants, the JIANGSU RUDONG windfarms project can save about 740,000 tons of standard coal and reduce about 1.83 million tons of carbon dioxide per year.

"The installation of RUDONG offshore converter station is a significant milestone in the development of deep-water offshore wind power development in China," said Fan Qiang, Vice President of CCS. "We are proud of our team who used their industry-leading expertise to help support this complex construction project."

The converter station itself weighs 22,000 tons and is as tall as a 15-story residential building. The impressive structure has an area that is nearly as large as a standard soccer pitch.

CCS has now completed successful classification surveys for more than 60 wind power installation platforms and has carried out authentication surveys for more than 40 offshore substations. Mr. Fan said CCS is working "hand in hand" with the offshore wind power industry to continue its growth.

Source: gCaptain 210811

--oo00oo--