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ROYAL WAGENBORG


THAMESBORG
DELFZIJL

ODE TO OUR EVERY DAY HEROES

Winter is coming. And that remains special for us every year. Where nature around us keeps hibernation and waits for the days to get longer, we continue to sail through large ice plains with our ice-strengthened ships. Winter also presents special challenges for our other divisions. This annual ritual is in the DNA of our people and our company.

Also in 2019 we see that many customers entrust us with an increasing share of their valuable cargo or critical projects. The reason for this is our reliable service and long-term orientation. And that makes us proud. Even if things go differently than planned, we come up with a suitable solution - as is apparent after the engine breakdown on the MV Alamosborg. "*Admirable*", our customer Archer Daniel Midlands remarks.

We have also succeeded in planning and operating our ships even more efficiently and thereby reducing our fuel consumption and CO_2 emissions. A positive result of focus and collaboration between colleagues on shore and at sea. We also work together with the maritime industry on the greening of shipping. Not only through a methanol consortium, our support in a CO2 transport concept or the recently signed 'Green Deal'. As early adopters we also integrate ballast water treatment systems in our ships on our shipyard.

Shipyard Royal Niestern Sander is working on sustainable projects and orders. The first electric inspection vessel in the Netherlands has been delivered; the second electric ship is under construction. This time a hydrographic research vessel. In addition, a lot of work is being done on the sustainable sister ship of Egbert Wagenborg and a contract has been signed for the LNG conversion of a passenger ship.

There are also good developments in other divisions, varying from punctuality in the ferry connection between Ameland and Schiermonnikoog, full warehouses in Eemshaven and Delfzijl to new customers and projects for our Foxdrill colleagues, such as recently at 100 meters on a drill ship.

Speaking of 'working at height', we are knocking more and more on the door of the North Pole. A region where according to nautical superintendent Frank van den Anker you can only sail safely and successfully with good preparation and skilled crew. Captain Richard de Rijk therefore gives us a glimpse into his world by taking us on board during the Northwest Passage. We also let chartering directors Hans Kroon and Marco Renzelli talk about the commercial viability of shipping above the Arctic Circle.

You will notice: we cannot do without our 'every day heroes' such as Albert, Zhang, Vladimir, Mark, Silviu, Hai, Marlon, Muhammed and Galih. They - and the 3,000 other colleagues - are the engine of our company. Regardless of their nationality, rank on board, background or ambitions: the commitment to Wagenborg is falling apart.

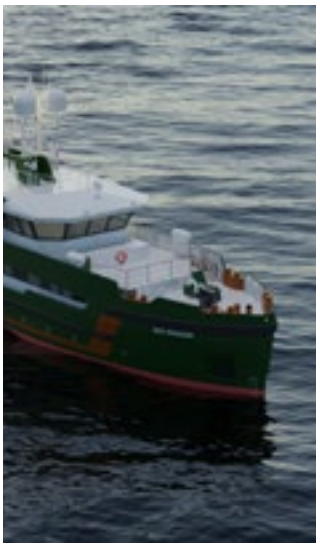
Finally, I wish you and your loved ones a Merry Christmas and a safe and healthy 2020.

For generations this writing closes with the traditional wish: 'for our seafarers a safe voyage and our consignees a good watch.'

Egbert Vuursteen

IN THE PICTURE

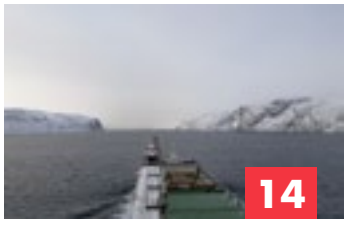
AT THE SHIPYARD



EVERY DAY HEROES

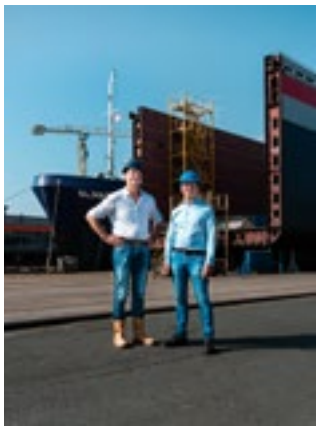
ON THE COVER

On top of the world
Royal Wagenborg has successfully completed five polar voyages with her ice-strenghtened vessels Amazoneborg, Thamesborg, Americaborg and Atlanticborg.



BACKGROUND

TECHNOLOGY & INNOVATION



REGULARS

COLOPHON

Times is a half-yearly magazine of Royal Wagenborg and is dedicated to developments within the company in the world of shipping, offshore and maritime logistics.

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AGENDA

Breakbulk Europe 2020
Messe Bremen| Bremen, Germany
26-28 May 2020
Booth: hal 5 F1

Breakbulk Americas 2020
George R. Brown Convention Centre
Houston, TX, United States of America
29 September - October 2020
Booth:1224

Offshore Energy 2020
RAI | Amsterdam, Netherlands
26-28 October 2020
Booth:1403

ON TOP OF THE WORLD

FIVE SUCCESSFUL POLAR VOYAGES

Royal Wagenborg has successfully completed five polar voyages with her ice-strenghtened vessels Amazoneborg, Thamesborg, Americaborg and Atlanticborg.

SIMULTANEOUS TRANSIT NORTHWEST PASSAGE

The MV Amazoneborg travelled from China to Canada via the Northwest Passage, while the MV Thamesborg sailed the exact opposite route from Canada to China. The route between China and Canada through the Northwest Passage is some 3750 nautical miles shorter than the traditional route via the Panama Canal, resulting in about 14 days less sailing and thus a reduction in emissions of over 40%. In 2016, Wagenborg was the first European shipping company to traverse the entire Northwest Passage without the assistance of icebreakers.

FIRST TIME NORTHERN SEA ROUTE FOR WAGENBORG

The Northern Sea Route (NSR) is a shipping lane between the Atlantic Ocean and the Pacific Ocean along the Russian coast of Siberia and the Far East. The MV Atlanticborg was nominated as Wagenborg first vessel to sail this route. After loading in Tornio (Finland) and Flushing (the Netherlands) the vessel sailed northwards instead of the traditional route via the Suez Canal. The distance between Northern Europe and China via the Northern Sea Route is approximately 40% shorter than via the Suez Canal. This results in substantial reductions in transportation time, fuel consumption, environmental emission and eliminates piracy risk.

VESSELS BUILD FOR OPERATIONS IN ICE

Built to meet the Finnish/Swedish ice class 1A (IACS Polar Class 7), the Amazoneborg, Thamesborg and Atlanticborg are suitable for summer and autumn operations in first-year ice. This ice class designation makes them suitable for worldwide operations, including in ice-covered waters such as the St Lawrence Seaway, the Baltic, the Canadian and Russian Arctic. For the arctic voyages all vessels comply with the Polar Code, which demands high standard of both ship and crew in arctic conditions. All ships were equipped with state-of-the-art preventive measures to detect any unforeseen deviations in the route. These included extra ice searchlights, an additional echosounder, and Iridium satellite communication. Also an ice-navigator joined the bridge teams to advise during the transit.

A NEW MILESTONE

As one of the Netherlands' largest shipping companies, Wagenborg has always been a pioneer. Successfully sailing arctic shipping routes means that it is still a leader in terms of development. Being able to sail these challenging arctic routes marks a new milestone for Wagenborg, one that we couldn't have achieved without the extraordinary preparation and support of the company's shore-based team and the captains with their crew for their safe and efficient navigation.

"WAGENBORG IS INCREASINGLY KNOCKING ON THE DOOR OF THE NORTH POLE"

Interview with Hans Kroon and Marco Renzelli about the commercial viability of shipping above the polar circle

Climate change makes the waters above Canada and Russia navigable and the exploitation of minerals becomes profitable. The Arctic is a top economic priority for the arctic countries. As the trade is growing around these areas, also shipping activity is increasing. The North Pole region is becoming a playground for Wagenborg, see chartering directors Hans Kroon and Marco Renzelli who are involved in deep sea shipping at Wagenborg.

On 19 September 2016, the MPP vessel Amazoneborg completed the journey between Canada and China along Canada's northern coast. Marco Renzelli tells: *"It was the first time a Wagenborg ship had traversed these waters without icebreakers, and it did so in record time: 19 days, 30% faster than the traditional route through the Panama Canal. This voyage was absolutely a new milestone for Wagenborg. It won't surprise me if this marked the beginning of a shift of our trading routes towards the north."* In the years that followed Wagenborg repeatedly sailed various arctic shipping routes. Hans adds: *"This year we again had a premiere by completing the Northern Sea Route, twice."*

THE NEW ROUTES OF THE ARCTIC

It is important to note the different types of ship travel in Arctic waters. Firstly, there is intra-Arctic traffic, which Russian companies have a monopoly on, transporting goods from the mines in Siberia to ports in the region, including Murmansk and Dudinka. A second type are the routes to places in the Arctic for tourism, science or in search of petroleum reservoirs. But it is the third type of Arctic sailing that could redefine international trade routes, as it involves journeys traversing these waters en route to other leading ports on the global sea traffic scene.

It won't surprise me if this marked the beginning of a shift of our trading routes towards the north.

ARCTIC SEA ROUTES

If we analyze shipping traffic in the Arctic, there are two main routes: the Northwest Passage (NWP) and the Northern Sea Route (NSR).

The NWP is an old dream, when explorers from the 18th and 19th centuries. They searched for a passage between the Atlantic and Pacific Ocean along northern Canada. The NSR, which mainly traverses Russian waters, is historically less interesting, but will be the first to be ice-free due to climate conditions.

We think it is important to invest in discovering these sailing areas as this might give us a competitive advantage in the market.

We expect of the two routes, the Northern Sea Route will be more interesting, as it will be fully navigable within 10 to 15 years. It will also give Russia more navigable coastline than any other country in the world.

The route through northern Alaska and Canada, however, will be blocked by ice for much longer and involves other difficulties. Researchers at the think-tank The Arctic Institute don't believe it will be viable because the waters won't be freed of ice as quickly as the Russian route (where Siberian rivers make the coastal waters more temperate) and there are numerous islands that allow ice to form more easily on the Northern Sea Route. Plus, this route doesn't have any ports that are deep enough for large vessels.

Sailing in the Arctic sounds like a walk in the park, but we do not take this light. On the contrary; we prepare these voyages in an extreme thorough way.

The ice-classed MV Amazoneborg navigates carefully through the ice-covered Victoria Strait - photo: Carlo Romero, 3rd engineer MV Amazoneborg.

STRENGTHS OF ARCTIC ROUTES

One of the noteworthy strengths of both routes is the shorter distance between Asian and European ports. For example, the journey from China to Canada through the Northwest Passage is about 4.000 nautical miles shorter than the traditional route via the Panama Canal. This reduction in the distances would translate into shorter voyage time. Also this shorter journey results in less CO2 and other emissions per shipped ton cargo. Complemented by sailing at relatively slow speed, the reduction in emissions is over 40%. Hans explains: *"We are aware that the Arctic is an environmentally sensitive area and we therefore feel responsible for its natural features and its inhabitants. That's why we do everything possible to prevent risks to the environment. Wagenborg complies with all rules and regulations as mentioned in the Polar Code, and are maintained according our high standards."*

But beyond travelling a shorter distance and saving time, it is also important to take into account certain other factors that, today, are a burden on the profitability of the Arctic routes. Hans explains: *"Climate conditions in this area can be very hostile for ships and the goods they transport (very low temperatures, very strong winds e.g.), which makes travel insurance more expensive and requires ships to be made of more expensive materials so they won't suffer the effects of these low temperatures. The increased cost of a transarctic sea journey could make it less attractive from an economic standpoint. But we think it is important to invest in discovering these sailing areas as this might give us a competitive advantage in the market."*

INCREASED NAVIGABILITY

Numerous climate models are available, but there are no doubts: the sailing routes in the Arctic will increasingly be navigable for an ever-longer period, and ultimately throughout the year. Increasing global and Arctic temperatures will continue to open Arctic routes more frequently and increase the Arctic shipping season length.

The majority of the Northwest Passage is completely ice-free. However, ice is still visible in some places, such as in Victoria Strait - photo: René Stijntjes, 2nd engineer MV Amazoneborg.

If greenhouse gas concentrations can be reduced sharply in line with the UN Paris climate change agreements, Arctic ice melt and shipping opportunities will still continue to increase for the majority of the 21st century. However, even with continually increasing greenhouse gas concentrations, climate models suggest there will always be some Arctic sea ice during winters through the 21st century. *"Although the Arctic shipping season length and reliability is likely to increase, for the vast majority of the current global shipping fleet sailing trans-Arctic will remain a seasonal endeavour. Based on the current activity and physical climate changes we believe that Arctic shipping is likely to increase, focused on the NSR; however, it is likely to remain a niche market for specialist operators like Wagenborg"*, states Hans.

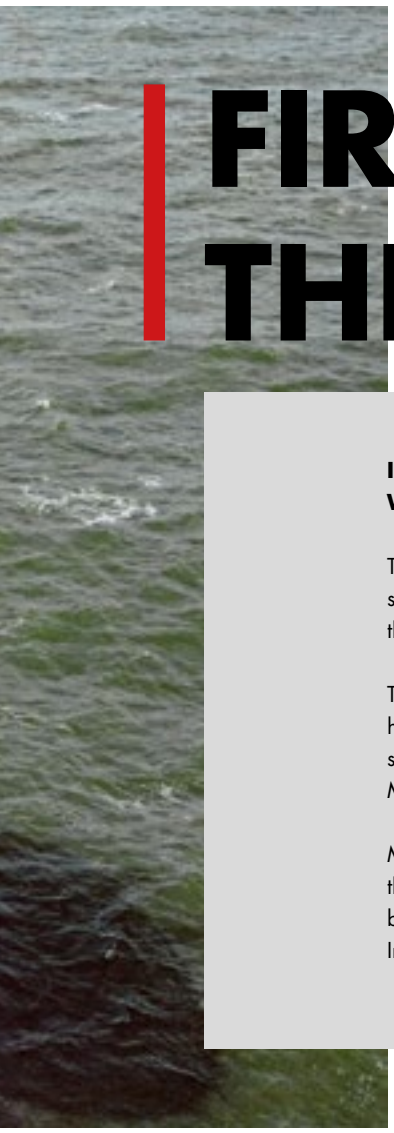
The MV Thamesborg seen from the MV Amazoneborg.

Currently the NSR and NWP are seasonally open most years with minor ice-breaking support. However in the first half of 21st century the shipping season on the NSR and NWP will remain variable and unreliable, continuing to require ice-classed vessels or ice-breaker escort during summer months.

At the moment the number of ships going through the NWP is low, but is rising. *"In 2018 a total of only 2 vessels made the journey"*, tells Marco Renzelli. *"In 2017 a total of 32 vessels made the journey, but only one of those was a cargo ship (MV Atlanticborg). This compared with 18 vessels in total in 2016, and 16 in 2015. We noticed this year the Arctic waters were navigable for a much longer period than previous years resulting in five Arctic voyages."*

STRICT CONTROL

An explosive growth of ships in these sensitive areas can be expected, but this is not the case. "*Canada and Russia want to keep strict control over the routes"*, explains Marco. *"They refuse to see them as international waterways that everyone just has access to. It is close to their coasts and can cause all kinds of dangerous situations if everyone goes there; like an oil spill. In principle the Northwest Passage is open for every shipping company complying with the Polar Code. However, the environment and ice conditions requires knowledge and experience with sailing in ice. Wagenborg has been active in ice-trade for decades and has earned a good reputation by authorities as Transport Canada and Atomflot."*



FIRST VOYAGE TO THE ANTARCTICA

In October 2019, Wagenborg concluded a 10-month contract for MV Trinitas of Jan-Willem and Peter Danser with a major Norwegian company to the South Pole.

This Norwegian company is the world's leading supplier of krill from the waters of Antarctica. Their supply chain extends from the krill catch in Antarctic waters through the logistics hub in Montevideo to their krill oil production facility in Houston.

To support this supply chain, the MV Trinitas will load dried krill into big bags from so-called "eco-harvesting vessels". This will often take place near Livingston Island, Antarctica. MV Trinitas will unload several of these eco-harvesting vessels until the ship is fully loaded. After this, a course will be set for Montevideo, Uruguay, to unload in the port there.

MV Trinitas is going to Montevideo in early November to prepare for this project. In the preparation, there is extensive attention for navigation in the area. The standard sea charts are not sufficiently reliable, but the Norwegian company has extensively mapped the areas and will share all data with MV Trinitas. In addition, the South Pole area also has other challenges, such as extreme weather and cold.

TECHNOLOGICAL HURDLES

Hans explains: *"Safety comes first. Sailing in the Arctic sounds like a walk in the park, but we do not take this lightly. On the contrary; we prepare these voyages in an extreme thorough way in cooperation with local ice-pilots, our nautical superintendent and crew on board."*

Besides all nautical challenges, also technical difficulties can be defined. For example, there are fewer navigation aids in these Arctic waters and, on the same note, satellite guidance systems also have significant problems in this region.

"That is why we install additional equipment on board, such as extra ice searchlights, iridium satellite communication and extra (polar) safety equipment for the crew", Hans continues. *"A second gyro compass (or a GPS-compass) will back up the first one, because at that high latitude the regular magnetic compass could not act as the backup. Night vision binoculars will be available on board for detecting icebergs visually. Especially small iceberg are hard to detect by radar, and could be seen visually with the ice-searchlight and night vision binoculars. When our vessels sailing an Arctic route, they receive daily ice charts, including satellite images, to have a safe and efficient transit. Further all Wagenborg crew is highly skilled with specific ice-navigation trainings. In addition, our crew are supported by a shore-based team made up of Wagenborg's technical and nautical specialists. An experienced Canadian Ice Navigator is on board to support the captain and the bridge team during the journey."*

COMMERCIAL VIABILITY IN THE FUTURE

Academic literature on the economic viability of trans-Arctic shipping draws mixed conclusions, although most find it plausibly profitable. Arctic routes are unlikely to be economically viable for container traffic due to lack of en route ports providing networked economic opportunities. However, bulk shipping can take advantage of the shorter trans-Arctic routes offered, due to more flexible schedules compared to container shipping.

"We expect that Arctic routes will not replace traditional canal routes (Suez and Panama) in the 21st century, although they will likely be used for an increasing Arctic bulk shipping market. The NSR will likely remain the most commercially popular area due to favorable sea-ice conditions, population and industry centres, and the proactivity of the Russian government in commercializing the route. I am glad we had the opportunity this year to explore the NSR for Wagenborg. Combined with the existing knowledge and experience from several Canadian Arctic voyages, we can position ourselves as a specialist operator offering new opportunities for our customers", Hans Kroon concludes.

SAFE AND PROSPEROUS PASSAGES THROUGH THOROUGH PREPARATION

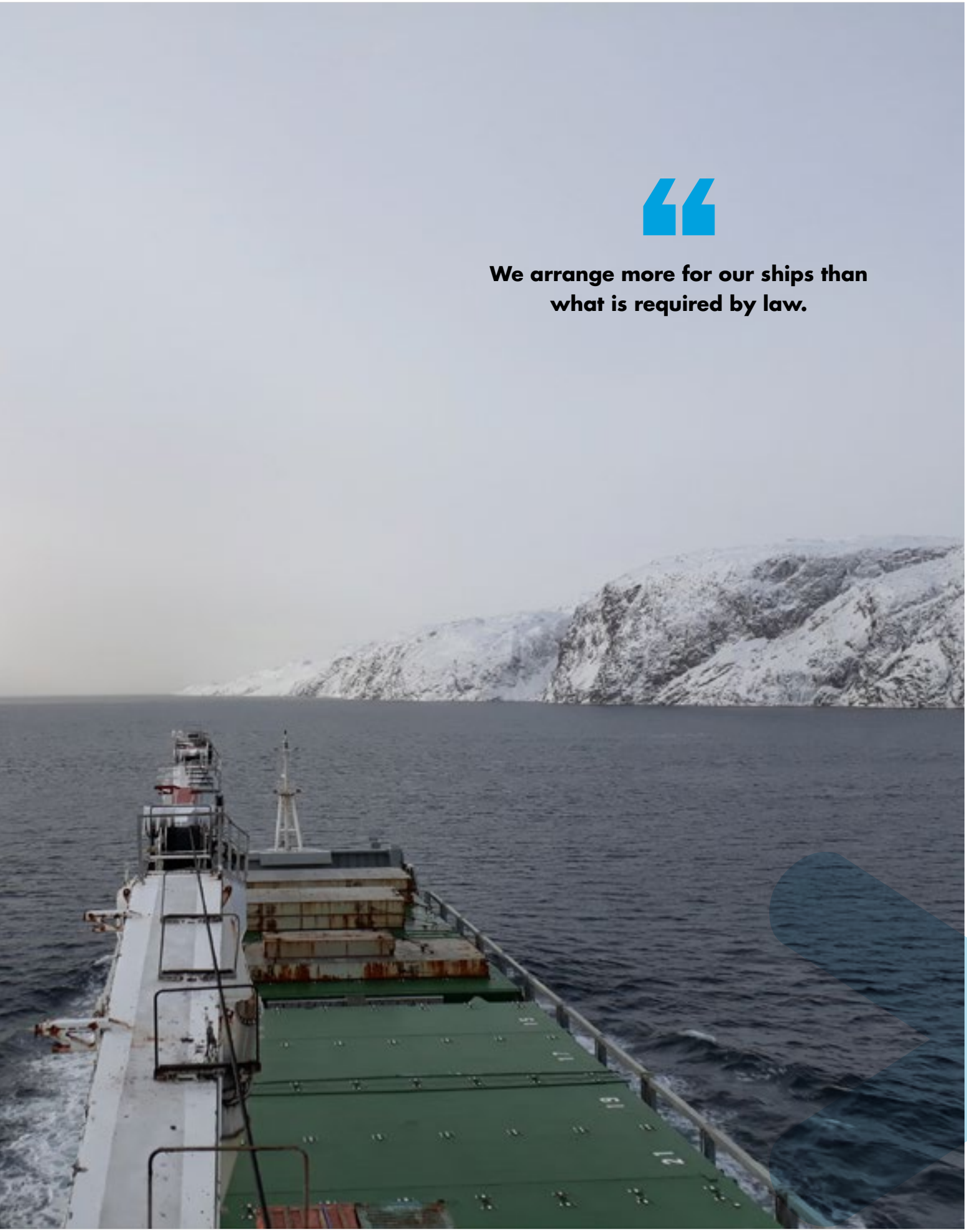
Interview with nautical superintendent Frank van den Anker about the Polar Code, anticipating on ice developments and permits

The transit time of a journey through the polar region is approximately 14 days. That sounds easy. However, weeks of preparation precede this. Preparations that are essential for a safe and successful passage in a special environment. We talk to nautical superintendent Frank van den Anker about the preparations for the five trips from Wagenborg along the North Pole in the 2019 season.

While the MV Amazoneborg is busy with the last transit of the season in the first week of October, Frank sits down: *"Later on we will have another conference call with the ice navigator about the current ice situation in Canada. The Amazoneborg already sails in water where ice begins to form. It will really come down to one day. The icebreaker Terry Fox is nearby, and they can take a "short cut". The NWP (Northwest Passage) will no longer be navigable in a week."*

HOW EASY IS IT TO MAKE A TRIP IN THE POLAR REGION?

With this journey from the Amazoneborg, Wagenborg has made five journeys through the northern polar region this season: four times the Northwest Passage above Canada and the Northern Sea Route (NSR) above Russia. Both routes are considerably shorter compared to the traditional routes along the Panama Canal or the Suez Canal. But there are more challenges in terms of preparations instead. Frank: *"Both the NWP and the NSR are in principle in free waters. They do, however, cross different EEZs (exclusive economic zone) and territorial waters of countries with different procedures and requirements. For example, in Russian territory you have to conclude a contract for ice breaker service. Actually we only hire them if the ice situation requires it. But we arrange more for our ships than what is required by law. For example, we hire external knowledge in Canadian waters through an ice pilot. These are often former captains of ice breakers who know the local waters like the back of their hand, and who themselves are supported with ice (breaker) information from their base. The Canadian authorities greatly appreciate that we strengthen our professional crew with extra local knowledge. Canada is concerned about the possibility of cruising freely through this region. We deal with it differently."*



We arrange more for our ships than what is required by law.

WHEN DO YOU DECIDE TO MAKE A TRIP THROUGH THE POLAR REGION?

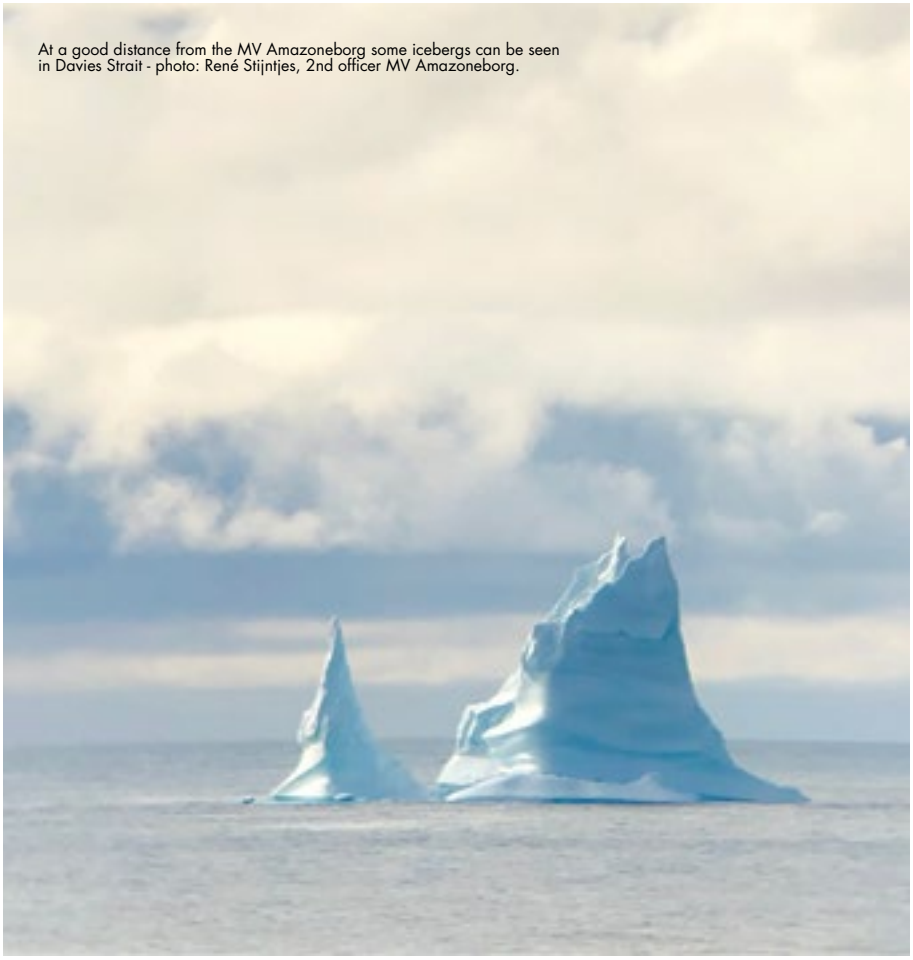
Of course there must first of all be an opportunity to conclude a trip that is suitable for this. *"In practice, the chartering department comes to me after closing a journey that includes a passage through the Panama Canal or Suez Canal. Then we look together to see if the planning of the trip fits in the period in which the NWP or NSR are navigable. This is not so long. This year, for example, the NWP has been open for around 10 weeks; the NSR can be navigated a little longer. In addition, the NWP is more difficult to navigate than the NSR. There is shallow water, islets, narrow waterways, strong currents in some passages and it is closer to the coast. Hydrographic data from this sea route are available. Navigation facilities such as buoys and beacons are very limited. We have to make do with a mix of electronic and paper cards"*, says Frank.

HOW IS A SHIP SELECTED FOR THE VOYAGE?

"When nominating a ship, the current ship position is leading. But a suitable crew is also crucial. For the NSR, for example, it is necessary for the crew to be or speak Russian. This is in connection with communication with the local shore parties and ice navigator. In addition, it is checked whether the crew have the required ice knowledge and training. In particular the captain and the officers must have demonstrable ice navigation to their name. For example, we have previously relieved the first officer on the Thamesborg for another officer who has followed additional training for sailing in polar regions. This is also a requirement from the IMO Polar Code."

WE HEAR A LOT ABOUT POLAR CODE. WHAT DOES THIS ACTUALLY MEAN FOR YOUR PREPARATIONS?

For sailing in polar regions, IMO stipulates in the Polar Code that a ship must be equipped

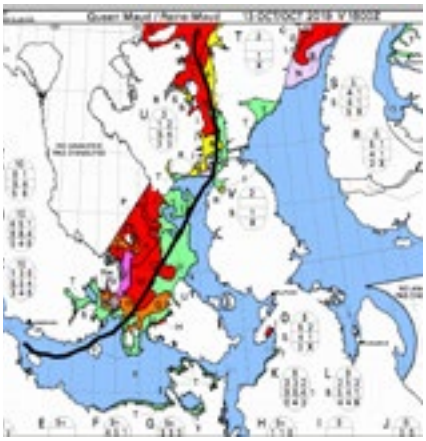


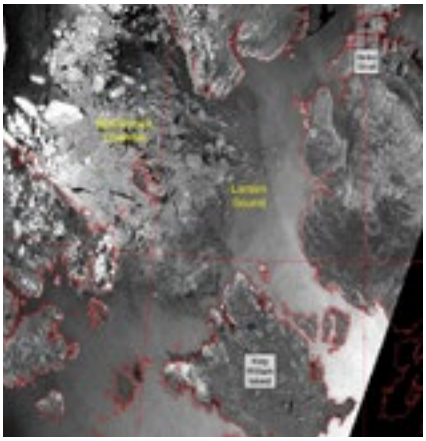
At a good distance from the MV Amazoneborg some icebergs can be seen in Davies Strait - photo: René Stijntjes, 2nd officer MV Amazoneborg.

for this. You can prove this as a shipping company with a Polar Ship Certificate. In practice, this requires the necessary from both the technical service and the crew of the ship. Frank explains: *"The ship must be adapted to extreme winter conditions. You can think of ice search lights, gyro-compass, safety equipment for the crew and facilities for satellite communication. You can imagine that regular communication equipment is not enough. These routes are in remote areas. They are not covered by the usual communication satellites and the shore radio stations are limited. These technical preparations do not only cost money; the time factor is also important. We need to find a suitable port where the work can - and may - be done and that fits in with the planning of the ship, in order to minimize deviation and delay. In addition, we bring safety kits on board: both personal safety kits with special food and clothing and group safety kits with tents and burners, among other things. With very cold temperatures and conditions, this should allow at least five days to survive in the event of an emergency."*

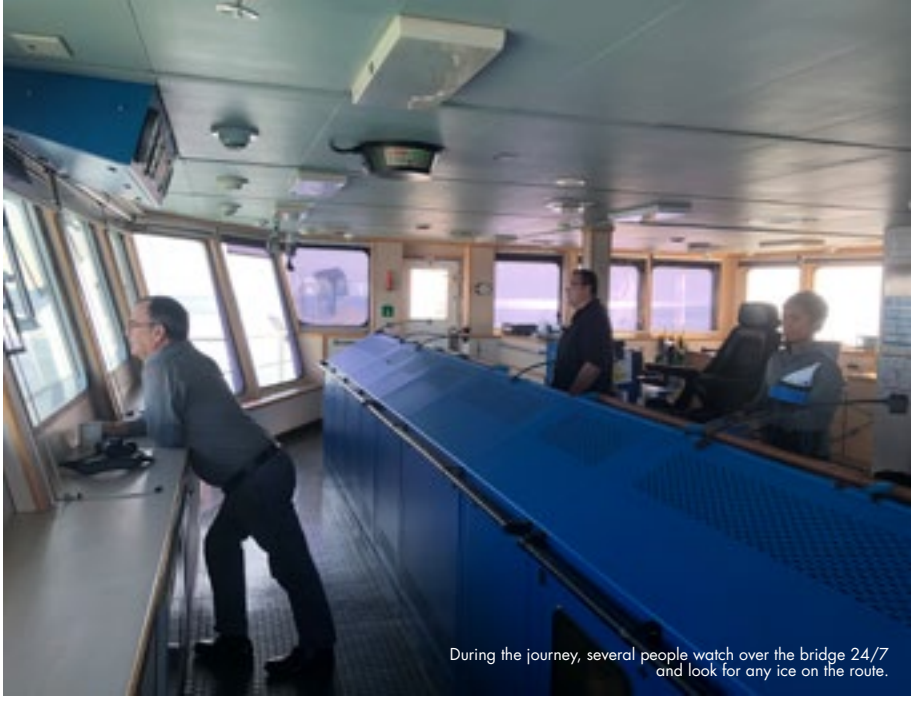
HOW MANY SHIPS NOW HAVE A POLAR CERTIFICATE?

"In 2018 MV Taagborg was the first vessel provided with a Polar certificate. We have since been busy rolling this out further across the entire fleet. For example, I wrote a Polar Operating Manual for Wagenborg Shipping for journeys in the polar region. We have had intensive consultations with both Bureau Veritas and Lloyd's Register about the implementation of the Polar Code for our fleet. They have approved the mandatory risk analysis and manual for two types of Polar Code certificates, in line with our sailing areas. We show that we are at the forefront of the Polar Code. We expect that this time next year all ships will be provided with a polar certificate."





Ship routes are planned on the basis of ice maps, satellite images that are taken several times a week, photos of aircraft that cross the area and observations of local ships.



During the journey, several people watch over the bridge 24/7 and look for any ice on the route.

SHIP HAS BEEN NOMINATED, CREW HAS BEEN SCHEDULED, POLAR CERTIFICATE HAS BEEN ARRANGED: WHAT NEXT?

"Then the whole nautical aspect comes into play. Which route are we going to sail exactly? The NWP, for example, has various options. The route is completely dependent on the ice situation and the forecasts. First of all, I ensure that all necessary nautical charts and books are on board. Sometimes they are already there, the crew has already prepared this; otherwise I order them in consultation with the captain. This allows the captain to continue planning. The ice pilot is planned, communication lines are set out and the captain is informed about this. During this process I daily follow the developments of the ice situation and the accompanying forecasts closely. I mainly do this based on information from the Canadian Ice Service. Based on satellite images taken several times a week, photos of planes flying over the area and observations from local ships. Also during the trip itself I continue to do this through conference calls with the ice-navigator service. I do this together with supercargo Siep Willemsen."

In 2018 MV Taagborg was the first vessel provided with a Polar certificate. We have since been busy rolling this out further across the entire fleet.

DOES A JOURNEY ABOVE RUSSIA REQUIRE DIFFERENT PREPARATIONS?

"Absolutely. Nautically, the NSR is less challenging," says Frank. *"In comparison with the NWP, it is really an open sea where there is much more shipping activity. The complexity is more in the paperwork at the NSR. The Russian authorities require different permits and contracts. Piles of paper that are all only available in Russian. Well my Russian is not so good; that is why we have appointed a Russian person for the translation. Trust and the relationship is very important to us. Ultimately we sign three different documents for a passage: one with Atomflot for a Russian atomic ice breaker, which must have been ordered 10 days before possible use, one license to sail the planned route and a document in which we as a shipping company report to the 'Boarder Guards', a kind of border police. And all this must be arranged well in advance."*

THE LAST POLAR JOURNEY OF THIS YEAR IS ALMOST OVER. ON THE WAY TO 2020!

"True, the Amazoneborg completes the last NWP of the season within a few days. Then it's over. Not just for us by the way; the NWP then simply starts to freeze up again and is no longer accessible for ships with our ice class. The winter is already beginning to stir considerably there. And how severe the winter will be determines the new season completely. The winter of 2018-2019, for example, has been fairly harsh, but the spring was very warm with warm winds, putting the season three weeks ahead of the "normal situation". This has led to the current number of arctic trips this year. We will see what will do next year. In the meantime, together with the superintendents, I continue to get the ships certified Polar and I keep a close eye on developments in the region, for example during an Arctic seminar in Montreal," concludes Frank.

"THE NORTHWEST PASSAGE IS BY FAR THE MOST EXTRAORDINARY TRIP I HAVE EVER MADE"

Interview with Captain Richard de Rijk about his experiences on the MV Amazoneborg, which sailed the Northwest Passage twice this season

CAN YOU TELL SOMETHING ABOUT YOUR BACKGROUND AND THE BEST TRIPS YOU HAVE MADE?

"After sailing on chemical tankers for a number of years, I joined Wagenborg in 2006 as 2nd officer. Within the company I have grown to 1st officer and since the beginning of 2015 I have been working as a captain. During my time at Wagenborg I made many beautiful and diverse journeys, especially with the A and T class ships. I have literally been all over the world and have visited almost all continents by ship. In this context, shipping "concrete parts" from Dublin to Milne Inlet was a special journey for me. This trip was my first introduction to Canadian Arctic waters: my interest in this unknown area was born. This year's Northwest Passage is by far the most extraordinary trip I have ever made."

WHAT WAS THE MOMENT WHEN YOU HEARD THAT YOU WERE GOING TO SAIL THE NORTHWEST PASSAGE?

"In May 2019, the first cautious sounds were circulating that there was a possibility that the Amazoneborg would be planned for a Northwest Passage. I was on leave at the time, but together with my wife - we live in the Philippines; we were on vacation in the Netherlands - I visited the Amazoneborg in Ghent. During my ship visit they were already busy with the necessary preparations to prepare the ship for a possible Northwest Passage later in the year."

AND THEN PLANNING BECAME REALITY: IN SEPTEMBER MV AMAZONEBORG WAS NOMINATED FOR A NORTHWEST PASSAGE. HOW DID YOU PREPARE FOR THIS TRIP FROM THAT MOMENT?

"From the moment I heard that the Amazoneborg was planned for a Northwest Passage, I regularly started to look on the internet for ice conditions in the Arctic during my leave. Once on board, with the entire crew we started to explore and prepare for this special passage. With special "Polar drills" for example, we have made the crew aware of the extra safety equipment that is required to have on board in this region. We also held a "polar briefing" during our monthly safety committee. This is to inform and instruct the crew about the passage and the extra measures we have

> **It is really different than a regular trip, because it contains many unknown aspects for everyone.**

taken with associated duties and activities. For example, a 24/7 watch is one of those extra precautions that contributes to safe navigation in these types of areas."

THE ACTUAL JOURNEY CAME CLOSER AND CLOSER DURING PREPARATIONS. WHAT DID YOU IMAGINE IN ADVANCE FOR THIS TRIP?

"Of course, I had already been to Milne Inlet, so I could imagine what the area would look like. Furthermore, there is of course a lot unknown. That naturally makes it extra exciting. You only really know what you will encounter during the passage."

AND THEN YOU FINALLY BOARDED. HOW DID IT GO?

"I got on board in Kunsan in South Korea. The final preparations for the Northwest Passage were still being made, such as the installation of a second searchlight and an iridium telephone. After this, we could leave. We first had to release woodpulp in Changshu and then sailed to Lianyungang to load. This was not without a struggle. We were just able to get away just in time for the typhoon "Lekima", which moved towards the Yangtze Delta. Fortunately we were off the Yangtze River just in time and we were able to sail right east, avoiding the typhoon. After Lianyungang we left for the far north. We picked up our ice navigator in Nome, Alaska."

I CAN IMAGINE THAT THIS TRIP IS DIFFERENT FROM A REGULAR TRIP. WHAT WERE THE MOST CHALLENGING AND SPECIAL MOMENTS EN ROUTE FOR YOU?

"Sailing the Northwest Passage is a special experience in itself. Beautiful passages for

example at Bellot Strait and Fury and Hecla Strait. Or Aurora Borealis during the night and regularly whales, narwhals and seals en route! It is really different than a regular trip, because it contains many unknown aspects for everyone. The route is only relatively recently navigable for commercial shipping. There are also several obstacles that you have to take into account, such as limited information, ice fields and icebergs. There were a number of challenging moments en route, where extra attention was needed. Especially the first contact with ice fields - that is, multi-year old ice - requires extremely careful navigation. For example, during our passage through "ice-mountain alley" in Baffin Bay and Davis Strait, we had to watch out for icebergs, but especially for smaller "growlers" that are difficult to detect on the radar. During the second Northwest Passage, the season was almost ending, making ice conditions challenging. Fortunately, icebreaker 'Terry Fox' escorted us through the ice fields in Larsen Sound and Victoria Strait. Incidentally, the risk is not just navigation through the ice; there can also be a lot of current on some relatively narrow sections, such as Bellot Strait, which you should all be aware of."

COOPERATION IS THEREFORE MORE IMPORTANT THAN EVER ON SUCH A JOURNEY. WHAT CAN YOU TELL ABOUT THIS?

"I had an ice navigator on board during both Northwest Passages. An ice navigator has been working in the Canadian Arctic for many years and is therefore a source of information. In daily practice he assists me on the bridge. This is an important factor with regard to the choice of route, interpretation of the ice map and navigation in polar ice. Including the trip to Milne Inlet

I have now experienced three ice navigators and nothing but praise for these men. But the cooperation and communication outside the ship also went very well! The various departments within Wagenborg provided excellent assistance during both the preparations and the passage. It is still a relatively new trade for everyone; collaboration and sharing of experience is therefore very important. Providing daily ice and weather forecasts from the office was an important source of information for us to navigate safely in this area, since ice and weather conditions play the largest role in the Arctic."

AND AGAIN AFTER THE FIRST TIME: JUST AS SPECIAL OR IS IT ALMOST ROUTINE?

"I feel very privileged that we have been able to make two passages in one season with the Amazoneborg. I could never have imagined that in advance. It seems that we are the first ship ever to sail from Asia to Canada and back via the NWP in one season - under the same "command". The second passage was certainly not a routine. Of course we were better able to estimate what was in store for us in general, but the ice and weather conditions were completely different during the second passage. This brought other challenges to our path. We also sailed the second passage via a different route, via Fury & Hecla Strait. This route is rarely used by commercial shipping, because it is often blocked throughout the summer by ice, but was now completely ice-free. During the second passage we also needed assistance from ice-breaker "Terry Fox" through some ice fields in Larsen Sound."

WHAT DID YOU TELL THE HOME FRONT ON THE WAY ABOUT THE NORTHWEST PASSAGE?

"Of course the home front is very curious about what it looks like in the Northwest Passage and what we all come across. It is actually a landscape that can be compared

to a Mars landscape. You are far above the tree line and therefore nothing grows. Photos then ultimately give the best picture of what we are experiencing and because we have internet on board, everyone was able to keep the home front regularly informed."

FINALLY, DID YOU EXPERIENCE ANYTHING ELSE ON THE WAY THAT IS WORTH MENTIONING?

"In the coming years we will perhaps sail more in this region. We must continue to regard this passage as something special at all times and continue to treat it that way. Good preparations and professional cooperation between shore and ship remain essential to make every passage a successful passage. I would also like to thank all crew members of the Amazoneborg for the professional and enthusiastic commitment during these trips. The entire crew was very passionate and involved, both with regard to the preparations and the implementation of both passages."

> **Good preparations and professional cooperation between shore and ship remain essential to make every passage a successful passage.**

CONSTRUCTION STARTED: ‘MODULAR SUPPORT SYSTEM’ WAGENBORG NEDLIFT

Major maintenance will be carried out in the coming years on both the infrastructure in the Netherlands and in Germany. This involves the replacement of a large number of bridges, locks, flood defenses and tunnels. Wagenborg offers its customers a wide range of smart solutions for the transport of large, heavy parts. To be able to work even more creatively, Wagenborg Nedlift is introducing its new “modular support system”.

Ultra strong, connectable and universally applicable

This autumn a start was made with the construction of the new "modular support system". An ideal and unique acquisition that will benefit a large number of projects from Wagenborg Nedlift and its customers. This brand new type of equipment is manufactured by Breman Machinery B.V. in Genemuiden, a Lloyd's Approved Manufacturer. The system is ultra strong, modular (connectable), easy to assemble and universally applicable. It offers a solution for example when entering large bridges. The system (or parts of it) can also be used as a tilt, support or as a portal with gantry beams and jacks.

Meccano

Thijs Nieuwenhuis, manager Engineering for Wagenborg Engineering explains: *"You could see the "modular support system" as a new box with Meccano components. The system can easily be connected to other equipment, such as gantry beams, modular axis lines, etc.."*

The system is being developed to be supplied largely pre-assembled. On the construction site itself, the parts are coupled with the help of a number of pins. Simple, time-saving and also safe!

Safety guaranteed

The system is fully engineered and manufactured according to strict Eurocode and Lloyd's standards. Only materials from Lloyd's approved suppliers are used for manufacturing. Because the system is of high quality (minimal deviations), it can be used for both onshore and offshore applications. An important added value for our clients' projects.

MODULAR SUPPORT SYSTEM:

- Safe, stable, strong and easy to assemble
- Can be assembled 100% in various configurations and sizes
- To be placed on SPMT, sled system, pontoon and at ground level
- Capacity: 1,000 tons per tower
- Lloyd's certified

A VALUABLE ADDITION TO THE SUPPLY CHAIN

PARTNERSHIP BREMAN MACHINERY B.V. AND WAGENBORG NEDLIFT

Wagenborg Nedlift has been a partner of Breman Machinery B.V. in Genemuiden for many years for transporting their end products. A stable collaboration that has been put in a new light this fall: Breman Machinery B.V. manufactures the new "modular support system" from Wagenborg Nedlift. Together with Michel de Jong (senior project leader Wagenborg Nedlift) we spoke with Henk Breman (director Breman Machinery B.V.) and Sander Brouwer (general manager Construction).

Are your end products often transported by water?
"That's right", Henk Breman agrees. *"Our products are loaded here at our factory and continue through the water. They are often transhipped in Amsterdam or Rotterdam and travel all over the world from there. But we also often bring the "building blocks" of a product to IJmuiden, where we then assemble it into a larger whole, after which it leaves by pontoon or ship. Not only transport is important in the latter case, you are also working on a logistically technical and product technical basis. Here we are always dependent on the total supply chain: the better all the links in the total chain are aligned, the more efficiently we can work and the more concrete and transparent we can offer our products and services to our customers,"* explains Henk Breman.

From left to right: Henk Breman and Sander Brouwer

> **Together we are therefore a strong part of the supply chain and that is becoming increasingly important!**

At the door here at Breman, all end products that are transported via water must cross the dyke. This does not seem very practical.

"All end products that are transported further by water must indeed pass this so-called bump. This is an additional challenge during transport work, but it still works well in practice, partly thanks to the collaboration with Wagenborg Nedlift, to get our end products over the dyke. No matter how big and heavy the products are, it works without problems every time", says Henk Breman. *"There are nevertheless a number of stumbling blocks with regard to transport that we have now picked up and resolved. For example, we have made the quay heavier and we have widened the dike rise"*, adds Sander Brouwer. *"Wagenborg Nedlift played an advisory role in these processes, because Wagenborg knows the situation very well here."* Henk Breman adds with a smile: *"Michel even knows the slope here!"* Michel de Jong agrees. *"But we still review the situation prior to every project, because every object is different. We must remain sharp in this."*

How do you see Wagenborg Nedlift as a partner for heavy transport and hoisting work?

"What we appreciate is having one fixed contact person. That gives connection and a band and switches very quickly. In addition, Wagenborg is reliable and honest. A deal is a deal. Clear and transparent", says Brouwer. *"And because Michel knows the situation so well here, we also know that we will not be faced with any surprises,"* Breman adds.

Recently, Breman Machinery B.V. started building the Wagenborg Nedlift modular support system. What is the challenge for you in this project?

"The manufacture of this system is not about mass or volume, but especially about small parts. The core competencies of Breman Machinery B.V. come here very nicely. Work with great precision, precise welding and machining and tidy preservation. We are good at that and we can do all this under one roof. We control the entire process ourselves."

With the start of the production of the modular support system, Wagenborg Nedlift is not only a supplier but also a customer. Has that changed the cooperation?

"It certainly contributes to an even more transparent cooperation between Wagenborg and Breman Machinery B.V.", Breman responds. *"This brings me back to the importance of strong and transparent cooperation and the smooth interaction with each other. Together we are therefore a strong part of the supply chain and that is becoming increasingly important!"*

ABOUT BREMAN MACHINERY B.V.

Breman Machinery B.V. is an expert in the extremely precise manufacture of parts, whether it is simple structures or complex tools of extreme dimensions. Breman Machinery B.V. works for oil and gas companies, mechanical engineers, aerospace and industrial companies in the Netherlands and abroad. With her team of no less than 130 experienced employees, she does not reject any challenge.

One of the most important standards of Breman Machinery B.V. is quality. That is why Breman Machinery B.V. Certified according to ISO9001, ISO3834-2, EN1090-1 and VCA **.

www.breman-machinery.com

BREMAN MACHINERY

ALBERT SNIJDERS 58

CARGO SUPERINTENDENT

"IF YOU HAVE A WELL-FOUNDED PLAN, YOU GET THE SPACE TO MAKE YOUR PLANS COME TRUE AT WAGENBORG"

In 1991 I ended up with Wagenborg more or less by accident. At that time you could still perform your military service on Dutch merchant shipping. I sailed under a foreign flag and then wrote to five Dutch shipping companies. Wagenborg was the first to respond. I started as 2nd mate on the Maasborg and climbed to captain.

DIFFICULT DECISION

When I was home, I did some chores as a cargo superintendent. In 2006 Wagenborg asked if I didn't want to do that full time. A difficult decision, but in the end I chose to go ashore. I have not regretted it. I have a nice, broad, challenging job and I also get a lot of freedom, with a house in Finland and a home office.

IN ITS PLACE

It is my job to ensure that loads are transported as efficiently as possible. With special loads that is a puzzle every time. And the great thing about my work: I not only come up with the loading plans, I am also there when they are implemented. It is always exciting to see whether our plans work in practice. If everything then literally and figuratively falls into place, it is fantastic.

Take the bridge sections for the Roskilde fjord. 492 Concrete bridge sections had to travel from Szczecin in Poland to Denmark. We came up with an efficient system with frames and shims to secure the bridge parts. Everything came out exactly as we had planned. In the end we made 44 journeys without any problem to get all bridge parts in Denmark.

THE BEST IDEAS

We recently installed custom-made tanks in two ships to roll up cables for transport. First we used fairly bulky tanks. That was already a lot handy than fixing everything again and again, but we have fine-tuned that idea even further. By using easy to dismantle building blocks, we can now also transport the tanks to the port where we need them.

How do you come up with such ideas? The best ideas come up when I'm sparring with colleagues. I also visit ports all over the world, where I get inspiration. For example, we have introduced a Finnish system for loading paper rolls in Canada.

TRUST

Wagenborg is a beautiful and social company. We have grown considerably, but it has remained personal. If you have a well-founded plan, you get the space to make your plans come true. The confidence you get here makes Wagenborg really special.

"GREEN DEAL NEXT STEP TO NEW SYSTEM JUMP"

***"We are on the eve of a new system jump. Instead of ironing the sails that give way to engines - the previous system jump - in a few years we will exchange the diesel engines. A green revolution in shipping",* according to Minister Cora van Nieuwenhuizen at the signing of the Green Deal Maritime, Inland Shipping and Ports in June 2019. In this agreement it has been agreed that the shipping sector will reduce emissions of harmful substances and CO2 in the coming years.**

"This Green Deal is the prelude to a new system. The propulsion of ships must be different. We owe it to our reputation", said Van Nieuwenhuizen. *"The significance of transport for prosperity in the Netherlands is enormous. We are a sailing nation that must lead the way in this change! That is why we join forces and together we put our best foot forward. Everything to maintain our position as a trading nation. Now I find 2050 always quite far away. But 2030 will be ten years from now! If we want to achieve something, then we must speed up. And that is exactly what I am going to do with this Green Deal."*

AMBITIOUS

According to Van Nieuwenhuizen, the key objectives of the Green Deal are the arrival of inland navigation vessels with zero-emission propulsion in 2030, the government as launching customer, a green energy label for ships and at least one emission-free seagoing vessel. *"Specific. With tangible products as the end result.*

Our ambition for inland shipping is at least 40% less CO2 emissions in 2030 and almost climate neutral in 2050. We have also succeeded in making national agreements in this Green Deal on making maritime shipping more sustainable. Despite the global playing field. Here too, a strong ambition with 70% fewer emissions in 2050. A lot more ambitious than we have agreed internationally within the IMO."

FOCUS ON THE ENTIRE CHAIN

The fact that the Green Deal is widely supported in the logistics chain results in a first serious step towards a better climate and cleaner environment. Ministries, provinces, ports, shippers' organizations, large banks, knowledge institutions and maritime sector organizations, such as the Royal Association of Dutch Shipowners (KVNR) to which Wagenborg is a member, complied among other things with the agreement.

The focus on sustainability within the chain fits seamlessly with the vision of Wagenborg. This vision consists of three pillars:

- Optimize the existing fleet in the total logistics chain
- Applying new technology and innovations to make the new and existing fleet more sustainable
- Investigate and implement alternatives for fuels, propulsion, materials, etc.

Specifically, this vision leads to various actions, such as participation in the Green Maritime Methanol Project Consortium. In this partnership, Wagenborg investigates with other shipowners, suppliers and shipyards the use of methanol as a fuel in shipping.

SHORE POWER

The agreement also states that the Dutch government will abolish the energy tax on the use of shore power by ships. By using shore power, ships do not emit any emissions during loading and unloading in the port. Wagenborg had already introduced a fixed shore power connection on its RORO vessels in 2000 in cooperation with its customers. In practice, ships with a shore power connection are completely dependent on the local infrastructure and available facilities in ports. The fact that Dutch ports are committed to the objectives of the Green Deal is a step forward in facilitating clean shipping.

JUST IN TIME SAILING

In practice, a lot can be gained with good planning. Sometimes a quay is not available, stevedores are not ready to load or unload, or the product to be loaded is not yet fully ready: all factors that make it unnecessary for ships to wait in a port with all the associated emissions. We can still take major steps if shipowners are able to coordinate schedules together with the customer and port operators. Systems that monitor operations and can steer ships on time make waiting in a port unnecessary for loading or unloading. DNV's international research has shown that with an optimal supply chain we can reduce CO2 emissions by 25%.

Wagenborg is regularly in discussions with its contract customers to see how we can optimally organize the logistics chain. Not from a customer-supplier relationship, but from the conviction that an optimal supply chain produces a win-win-win situation: for the shipping company, for the cargo owner and for the environment.

CONSTRUCTION EASYMAX 2 AT FULL SWING

At the beginning of 2019, shipyard Koninklijke Niestern Sander announced that it had received an order from Wagenborg for the construction of a sister ship of the Egbert Wagenborg. The yard has since started building the second ship of this type EasyMax.

March 2020
Foreship ready

April 2020
Installation bridge deck

In the meantime, the first parts of yard number 851 have been transported from the construction hall to the quay side at shipyard Koninklijke Niestern Sander. The help of subsidiary Wagenborg Nedlift and its new modular axle lines has been requested for this transport.

Two years after the completion of the construction of yard number 850 "Egbert Wagenborg", this newly to be built dry cargo ship will be the first repetition of this successful EasyMax prototype.

Construction started in April 2019. Work on this new-build order will continue in the coming months, albeit at minimum strength. Niestern Sander, in consultation with Wagenborg, has given priority to other new construction and conversion projects. The delivery of EasyMax 2 is planned for October 2020.

EASYMAX CONCEPT

The EasyMax concept is a multifunctional ship with a load capacity of 14,000 tons and was developed by Royal Wagenborg and Niestern Sander. Wagenborg received the KVNR Maritime Shipping Award for this ship design in 2017, partly due to its superior fuel efficiency. The Egbert Wagenborg has now proven itself as a sustainable and successful type of ship and will continue to contribute, together with its future sisters, to the position of Wagenborg Shipping as a leading multipurpose shipping company.

June 2020
Installation aft ship

August 2020
Launch

ZHANG HAI BO

29 3RD OFFICER

"AT THE AGE OF 16, I HAD NEVER SEEN THE SEA."

I grew up in the middle of China. At the age of 16, I had never seen the sea. Then I went to college at the coast, 1.200 kilometers far from home. I never forget the first time I saw the sea. I was amazed. It was so blue, so beautiful. Right at that moment I knew: I wanted to work on a ship.

I love the Mediterranean area very much. It is beautiful and calm throughout the year. But I also experienced seas can get rough, especially the voyage from Norway to Canada in winter. We once suffered from bad weather for almost 2 weeks. I was glad when we entered the Great Lakes with calmer water.

I first sailed via an agency in Beijing for a Turkish and a German shipping company. The contracts of the two companies were very long. I was on board for more than 13 months. It was terrible, I missed my family very much. Afterwards I got employed as 3rd officer at Wagenborg. My contract is only 6 months now. And when my mother-in-law was very ill to death, Wagenborg and the agency in Beijing arranged that I could go home immediately. I appreciated that so much.

The people at Wagenborg are very nice, I like my work and the salary is good. That is important for me, because In October my wife is going to have our baby. I will be on board then, because I need more money to support my family. In December when I go home, I will see my wife and my newborn baby. How special is that!

VLADIMIR MANAEV

51 MASTER

"ON BOARD, YOU MUST CONTINUOUSLY ADAPT TO THE CIRCUMSTANCES."

I am sailing for 26 years now. My most special trip I made in 2009. We sailed around the world, from Rotterdam to Rotterdam in 4.5 months. It was so diverse. Panama, Singapore, Hawaii, the Gulf of Mexico: we saw it all.

I started my career at Wagenborg in 2001. Back then, I worked at Egon Oldendorff, when I saw an advertisement from Wagenborg. Wagenborg offered shorter contracts and a better salary, so I decided to apply.

I started out as a 2nd mate on the MV Varnebank. That was quite something different then I was used to. At Egon Oldendorff we sailed with 56,000 tonners, the MV Varnebank was a 9,000 tonner, but I never regretted my switch. Wagenborg is a friendly, stable company and offers opportunities for growth. In 2007 I got promoted to master.

The Nortwest Passage in 2017 with the MV Atlanticborg was another special trip. We were the second ship to pull off this difficult feat, and the first that followed the shortest and least-used route: via Bellot Strait and Fury and Hecla Strait, then passing to the south of Baffin Island and out via Hudson Strait into the Labrador Sea.

Through the years, I sailed on many different vessels, transported all kinds of loads, in all parts of the world. On board, you must continuously adapt to the circumstances. It keeps my job interesting, even after 26 years.

SULPHUR 2020: ALL YOU NEED TO KNOW

UPDATE

On 1 January 2020, the International Maritime Organisation (IMO) will implement the new fuel sulphur regulation. Sulphur 2020 is arguably the most impactful environmental regulation to date in ocean transportation and has far-reaching technical, commercial and operational consequences. It's widely acknowledged that the regulations have significant consequences for both ship owners and their customers.

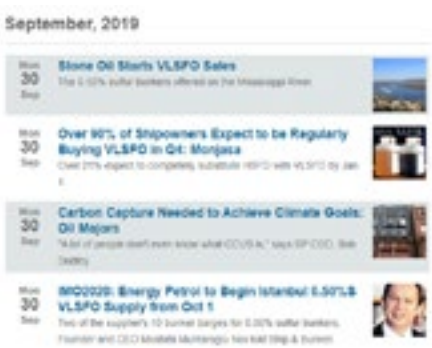
What exactly does the new sulphur regulation entail?

In 2020 a new regulation for a 0.50% global sulphur cap for marine fuels will be in force. Under the new global cap, all ships will have to use fuel on board with a sulphur content of no more than 0.50% against the current limit of 3.50% in an effort to reduce the amount of sulphur oxide. The interpretation of "fuel oil used on board" includes fuel used in main and auxiliary engines and boilers. The Emission Control Areas (ECAs) will remain at the 2015 standard of 0.10% content.

How will Wagenborg adapt to meet the regulation: The vast majority of the Wagenborg fleet will be sailing on VLSFO as of January 1st.

Availability of the VLSFO

Majority of shipowners will use VLSFO to meet the IMO regulation as from 1st January 2020. In almost all ports, where currently HFO is supplied, the VLSFO 0.5% will be available. Suppliers are getting now ready to have the product in stock.



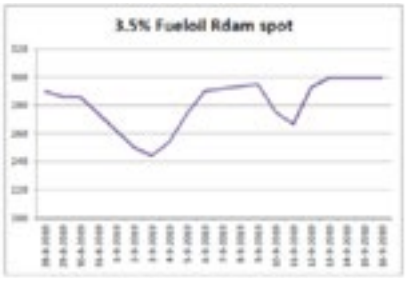
Change-over to VLSFO

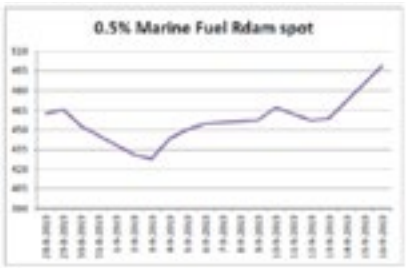
As from 1st November Wagenborg started to order VLSFO 0.5% in order to prepare our vessels to changeover from HFO 3.5% to the new compliant fuel.

"We will replace 70.000 mts HFO 3.5% by VLSFO 0.5% next year due this regulation"

Pricing of the VLSFO

Bunker prices remain volatile due to various factors. The recent attacks on Saudi oil infrastructure caused oil price spikes, but it didn't take very long for prices to fall back again substantially. Worries about economic growth seem to have taken over from geopolitical scares again. In the bunker market we see price differences between the products as suppliers are getting ready for the 2020 regulation. Especially pricing and availability of HFO/VLSFO is changing day-by-day.





ENGINE BREAKDOWN MV ALAMOSBORG

The MV Alamosborg was sailing the Atlantic Ocean on her way to Casablanca Morocco. All of a sudden, the main engine of the vessel broke down. Despite maintenance, online monitoring by Wartislä and a recent survey, bad luck prevented the vessel to continue her voyage. This is the story of the Alamosborg and how the people of Wagenborg combine strengths to deal with unforeseen setbacks.

Photos: crew Alamosborg, José Luis Guerra.

JUNE 18TH, 2019

Captain D. Ciacu of the MV Alamosborg: *"We left the port of Duluth after loading 11.000 tonnes of sugarbeetpulppellets for ADM and set direction to the port of Casablanca. ETA: July 25th."*

JULY 1ST, 2019

20:30

While sailing approximately 250 nautical miles north east from the Azores, the MV Alamosborg was confronted with a main engine breakdown. Captain D. Ciacu: *"The chief engineer noted a major damage to the main engine. Piston cylinder 5 had the connecting rod out, a broken crankcase and a damaged crankshaft. We were unable to continue sailing. Our destination port Casablanca was on a distance of approximately 730 nautical miles. I informed José Luis Guerra of Wave Shipping as the shipping agent in Casablanca, Piter Oosterhof from the fleet management department (FMD) and the chartering department (CHD) about our situation."*

JULY 2ND, 2019

08:00

To arrange the Alamosborg to be towed to a port, Wagenborg Towage director Marc Mazereeuw was informed. He will try to arrange towage to a port in south Spain.

09:00

Laura Meijerhof of the insurance department was informed by Piter Oosterhof including the information that Algeciras has preference for FMD. *"We hired an external expert for this case: Nick van Dincklage."*

10:00

Hans Kroon: *"I contacted our client ADM to inform them about the situation with the Alamosborg."*

12:00

Piter Oosterhof: *"To replace the crankshaft and possibly engine block, access must be made through the engine room bulkhead in hold 2. For this, the cargo in this hold must be unloaded. The result is that hold 1 also has to be unloaded, because otherwise the ship will be forward with a trim of 2 meters, which means that repairs cannot be done properly and safely. Conclusion: all cargo must be fully discharged."* The first ideas arise to perform a board-to-board operation.

14:00

For a board-to-board operation, the chartering department needed a suitable vessel and checked her open tonnage. Hans explains: "*The MV Helga turned out to be in position to receive the cargo from the Alamosborg. Currently, the Helga is still heading for Bilbao, but the intention is to have her completed with discharging there on July 15th. Then she could be already in south Spain on July 18th."*

15:00

Sebastiaan Verstappen was working on the bunker planning for the Wagenborg fleet. *"I got the idea to pump the remaining HFO (191,408 mts) out of the Alamosborg and transfer it to the MV Helga. This because the repairs to the Alamosborg will take several months and with the upcoming sulphur 2020 regulations, the HFO in the Alamosborg will be useless."*

17:00

Finally, a tug was approved by the insurance company. In approximately 3 days, the 'Alp Ippon' will arrive at the Alamosborg and tow her to a port in south Spain. The ETA of the Alamosborg is set on July 15 or 16 for now. José: "*Most likely Alamosborg would go to Huelva, Málaga, Cádiz or Algeciras. I requested these ports for the possibilities for unloading, storage and loading for our 11,000 mt SBPP cargo. My preference was Algeciras as there are enough facilities to do ship repairs. Also we could use our own shipping agency in Algeciras."*

JULY 3RD, 2019

15:00

For discharging the cargo grabs are necessary, which are currently not available. José: "*That is why I involved the supercargoes of Wagenborg to advise about the type and specs of the needed grabs. Supercargo Albert Snijders, based in Helsinki, came up with the idea of using two available grabs in Delfzijl, the Netherlands.*" Albert: "*Normally, Wagenborg Stevedoring is using these grabs for discharging sugar vessels in Delfzijl, but these are also perfect for the A-type cranes.*"

17:00

After consulting his network, José confirmed available space at the port facility at Campamento, near the Cernaval shipyard in Algeciras. *"This location is perfect for both repairs and board-to-board operations for the MV Alamosborg and MV Helga. This choice would avoid extra time and costs compared to another port"*, tells José.

JULY 8TH, 2019

11:00

José: *"The Algeciras port Authorities have given green light for board-to-board operations in Algeciras on the condition that all cargo has to be discharged as quickly as possible due to danger of auto combustion. In addition, both vessels have to meet the ballast water convention and conduct risk assessments. To prevent pollution, booms have to be placed around the vessels and tarpaulins between the two ships to prevent water pollution. I will take care of this."*

JULY 4TH, 2019

10:00

José Luis Guerra is in consultation with the chartering department still evaluating the various scenarios and ports with regards to transshipment of the cargo. *"Towing to the destiny port Casablanca is not an option, since the port authorities will not give a permission to bring in a 'death' vessel into this port. An alternative option is to discharge the cargo ashore and reload the cargo. A last scenario is transshipping the cargo by means of a board-to-board operation. However, also this must be granted by the port authorities. All scenarios are still under evaluation, but the last one is still preferable."*

14:00

José send an official request to the Algeciras port Authorities to perform a board-to-board operation. In addition, he added an anti-spillage plan.

JULY 5TH, 2019

15:00

The tug Alp Ippon arrived at the MV Alamosborg and started the tow as soon as possible to the direction of south Spain. For now, it is expected to arrive at south Spain July 10th.

16:00

Harry Boers from Wagenborg Stevedoring confirmed the technical details and suitability of the grabs. Max Tack of Wagenborg Projects & Logistics immediately booked transport to south Spain for these grabs by truck.

JULY 9TH, 2019

12:00

José: *"All is arranged for proper and safe arrival of the MV Alamosborg: pilots notified, port notified, tugs and mooring men notified and the shipyard is notified."*

13:30

Kathy Schiere informs all parties involved, including the MV Helga and client ADM. *"We hereby give notice for the MV Helga to load 11.000 tons of sugar beet pulp pellets from the Alamosborg in Algeciras."*

JULY 10TH, 2019

13:00

The MV Alamosborg arrived and berthed at the port of Algeciras. Now she is waiting for the arrival of the MV Helga in order to perform the transshipment of the cargo.

JULY 14TH, 2019

10:00

The two grabs are loaded at the terminal of Wagenborg Stevedoring in Delfzijl and will set direction to Algeciras. Meanwhile José arranged other needed equipment, such as fenders and special covers for the Alamosborg.

JULY 17TH, 2019

11:30

José received the formal confirmation from the port authorities to carry out the requested HFO transfer from the MV Alamosborg to the MV Helga. Also, he got the confirmation from hose rental company they will be able to supply hoses with enough length and with adapters with gaskets to connect to both vessel´s connection points.

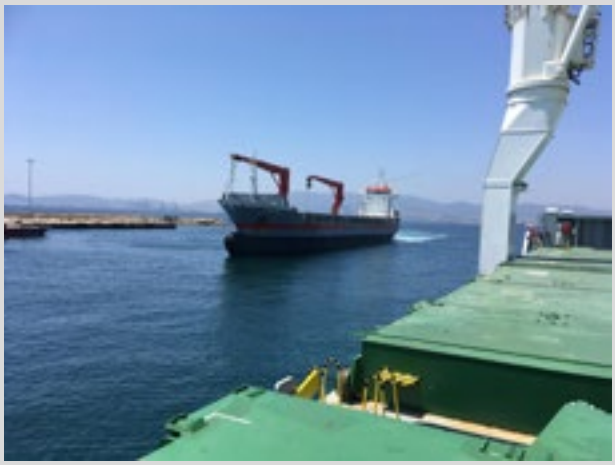
JULY 18TH, 2019

11:00

The bunkering hoses and equipment were delivered to the MV Alamosborg. Also the fenders were rigged to the vessel.

13:00

The MV Helga arrived at Algeciras and berthed next to the Alamosborg.



17:00

Booms were placed around both vessels after which the Port Auxiliary Service Bunker Surveyor was invited to carry out a bunker survey on both vessels.

18:00

The bunker operations started.

JULY 19TH, 2019

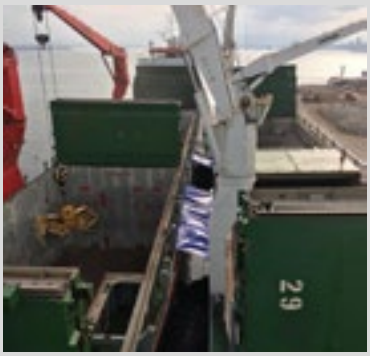
09:00
End of bunkering.

09:30
Arrival of our surveyor together with the receivers surveyor to perform hold inspections and cargo sampling for the cargo transshipment to the MV Helga. Both cargo holds of the Helga were visually inspected and found empty and clean: MV Helga was ready for the transshipment operation. At the same time, the MV Alamosborg was inspected during opening procedures. The hold and hatches structures were inspected for cleanliness and suitability purposes. Both holds were also in good condition. Upon holds opening, the cargo of sugerbeetpulppellets was visually inspected as far as possible. The cargo in both holds was free-flowing, in sound condition, free from foreign smell and living insects. Also the MV Alamosborg was ready to transship the cargo.

12:00
Collection of bunkering hoses and equipment.

15:00
The trucks with the grabs arrived at the port of Algeciras.

16:00
Tarpaulins were placed between both vessels to prevent pollutions and spills during the transshipment operations.



17:00
The grabs were installed on the deck cranes of the MV Alamosborg.

19:30
Before the transshipment operations could finally start, draft surveys were performed on both vessels jointly by the chief officers. This was done in order to calculate the transshipped quantity of sugerbeetpulppellets.

20:00
Start of board-to-board operations. The transshipment operations were performed by means of the three 60 tons deck cranes of the MV Alamosborg. Each deck crane was equipped with a grab machine resulting in an operating rate of 230 tons per hour. The transshipment operations were carried out 24/7 with only minor stoppages for changing crane operators after their six hours shifts and refueling of the grab machines.

JULY 22ND, 2019

13:30

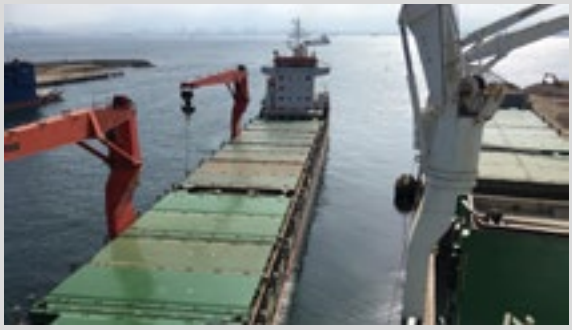
After excellent work of all deck personnel and local stevedores, MV Alamosborg cargo hold I completed discharge at 07.45 hrs. and hold II at 13.20 hrs. MV Helga cargo hold II completed loading at 10.40 hrs. and hold I at 13.25 hrs.

15:00

The arranged booms around both vessels were removed. Fenders were removed and the truck with both grabs returned to Delfzijl.

18:15

The MV Helga cleared berth and set direction to Casablanca.



AUGUST 1ST, 2019

10:00

José arranged tugboats and a pilot to shift the MV Alamosborg to the repair quay of the shipyard.

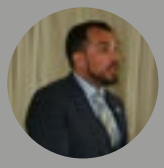
16:00

The MV Helga arrived in her destination port Casablanca with the ex-Alamosborg cargo.

"Although this incident had a major impact on our client ADM, I am proud of the way all Wagenborg people joined forces and came to the best solution for all parties involved."

Egbert Vuursteen, CEO Royal Wagenborg

THE PEOPLE INVOLVED...



Jose Luis Guerra
Managing director Wave Shipping

Piter Oosterhof
Manager Fleet Management

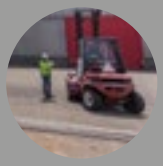
Laura Meijerhof
Senior insurance & claims handler

Hans Kroon
Director Shipping North America

Sebastiaan Verstappen
Senior operator & bunker procurement

Kathy Schiere
Chartering operator

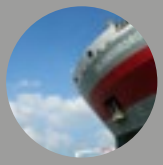
Albert Snijders
Supercargo



Harry Boers
Head of technical service

Marc Mazereeuw
Director Towage

Max Tack
Manager Projects & Logistics

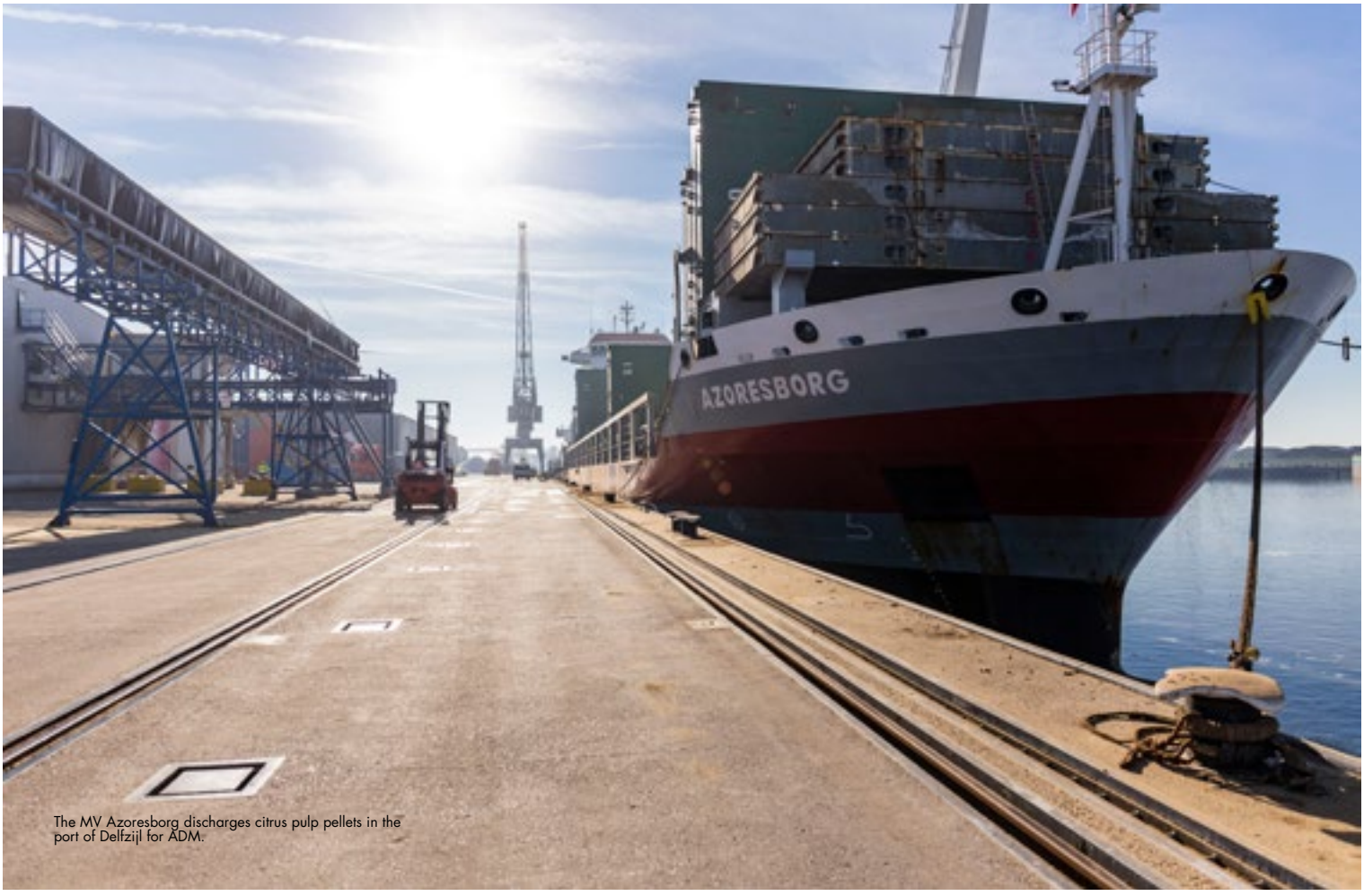


Captain & crew
MV Alamosborg

Captain & crew
MV Helga

"WE THINK WAGENBORG'S FAST AND SOLUTION-ORIENTED ACTIONS ARE EXCELLENT"

After the incident with the MV Alamosborg, we asked our client ADMIntermare to look back. Chartering Manager Jagjit Bibra-Hertle gives his reaction.



The MV Azoresborg discharges citrus pulp pellets in the port of Delfzijl for ADM.

We clearly see that Wagenborg has a strong dedication to satisfy their customers and to assist them together. Even in difficult times and situations.

Het MS Azoresborg lost citrus pulp pellets in de haven van de Delfzijl voor ADM.

"On 1st of July, we at ADMIntermare, a division of ADM International SARL, were informed by our contract partner Wagenborg that the MV Alamosborg had encountered a major engine failure or defect. This ship transported our contractual shipment of sugar beet pellets from the loading port Duluth on the American Great Lakes, to the port of discharge Casablanca. At that time the ship was approximately 2 days away from the intended destination Casablanca.

At first it was not clear what the consequences were of the engine failure. It was also unclear what delay this would cause to our cargo. However, it soon became clear that the ship had experienced a serious and complete engine failure and thus was unable to maneuver and was drifting towards the Azores.

After internal consultation with our Ship Risk Management we discussed which possible scenarios we could expect, such as arranging a towing company, hopefully towing the ship to Casablana and unloading the product and delivering to our buyer with minimal delay. Our contract partner Wagenborg investigated the options on their side and found a towing company.

At the same time, Wagenborg had informed what the regulations were in Casablanca and found out that a "dead" ship could not enter the port. So towing to Casablanca was not an option. It was therefore necessary to move to another port in southern Spain. In this case, Algeciras was the best option. In the meantime, Wagenborg was working hard to offer a workable solution for ADM after a thorough investigation on their part about how this unfortunate situation could best be solved.

Wagenborg did their utmost best to investigate how the cargo could be brought to its final destination. Ultimately, Wagenborg decided to transfer the cargo to another ship in their fleet, namely the MV Helga.

Given the way things are resolved, we are happy to say that we think Wagenborg's fast and solution-focused actions are excellent. It is characteristic of this strong ADM contract partner to succeed in a very complicated situation where the cargo must reach its destination in Casablanca with the least possible delay.

It is clear that not all owners had sought this solution. All in all, we at ADMIntermare are very happy that we have had Wagenborg as our contract partner in this unfortunate situation. We clearly see that Wagenborg has a strong dedication to satisfy their customers and to assist them together. Even in difficult times and situations.

Thank you very much for the great support during this incident!"

MARK ADMIRAAL

28 CHIEF OFFICER "I DO LIKE A CHALLENGE"

I started at Wagenborg in 2011 as an intern on the Andesborg. We traveled directly around the world, from Singapore, to Asia and South America. Then you have something nice to say when you return to school. For me, that was the start of a fast career. In 2013 I started as 3rd officer, in 2018 I was promoted to 1st officer.

I worked as 2nd officer on board of a ship and saw what the 1st officer did. I thought: "I can do that and even better." I not only did my own work, but I was also interested in the work of the others. Nice that it was noticed and rewarded.

And of course I come in beautiful areas. My favorites? The Caribbean, the Suez Canal and Panama Canal.

I am often on board for 13 weeks and then at home for 8 weeks. Those 13 weeks are busy. The number of people on a ship is limited and often we really have to work hard. To have the ship cleaned on time for the next load, for example, or if something breaks. If you have done something together for each other, it makes you feel satisfied, but those 8 weeks at home are therefore very important to me.

I never know in advance which ship I will end up on. I prefer the A and T series with the cranes. In terms of ship, I opt for the Oranjeborg. That is a somewhat more complicated ship with side loaders. I like a challenge.

SILVIU TICHIERU 28

2ND ENGINEER

"I LIKE WORKING WITH MY HANDS. WHEN YOU FIX SOMETHING, IT IS SATISFYING. WHEN YOU DON'T KNOW HOW TO FIX SOMETHING, IT IS CHALLENGING."

THE PEOPLE OF TESTIMONIAL WAGENBORG

"I was only in my second year in college, when I took a test and got selected by Wagenborg. I started as an spprentice in 2012, in 2015 I became officer. I am in charge of the operations in the engine room. Maintaining the equipment and fixing things. I like working with my hands. When you fix something, it is satisfying. When you don't know how to fix something, it is challenging. We then discuss with each other how to handle. We all have the same purpose: keep the ship running in a good shape.

I like the Mediterranean Sea area: South-Europe and North-Africa, but Deception Bay was most impressive. We sailed there in May. It was all white and quiet, the icebergs were so impressive. You know they are very dangerous, but they were so majestic. I was really amazed. Life on board is not always easy, not everyone is suited for the job. I am proud I am suited.

I am quite glad I ended up at Wagenborg. The company treats us well. The salary is fine, Wagenborg offers work-security and the insurance is taken care off. I am three months on board and three months at home. Six months off per year, you don't have that in an ordinary job. I bought a house back home in Romania I want to rent to tourists. But first I have to restore it, so I have plenty to do when I am at home."

TOPSIDE BORSSELE ALPHA TO SEA ON WAGENBORG BARGE 7

Wagenborg Towage has loaded the topside of the Borssele Alpha substation with the Wagenborg Barge 7 using self-propelled modular trailers (SPMTs) at the HSM Offshore yard in Schiedam, the Netherlands.

This sea-going pontoon, measuring 100 meters long and 33 meters in width, is equipped with a ballast system. It sailed from Schiedam to the project location, via the Nieuwe Waterweg and Hoek van Holland where it entered the North Sea. Upon arrival at the site, the topside was placed from the Wagenborg Barge 7 on the jacket foundation.

Wagenborg Barge 7 leaves Hoek van Holland behind and goes onto the North Sea - photo: Flying Focus.

HAI LUU 23

CADET

"MY CHANCE TO SAIL THE INTERNATIONAL WATERS AND DO WHAT I LIKE DOING MOST: WORKING ON ENGINES AND EQUIPMENT."

Wagenborg came to my university in Vietman looking for cadets. We had to take IQ and EQ tests and after that they selected eight students. I was one of them! My chance to sail the international waters and do what I like doing most: working on engines and equipment. September 2018 I started out as a cadet on the MV Lauwersborg. We visited many countries in Europe. Now I am sailing on the MV Warnowborg. She took me to America.

As a child I already was fascinated by engines. Here I work on engines through the day and I can ask the chief engineer anything. He also started out as a cadet, so he is sort of an example to me.

When I work and study hard, I also can become chief engineer. I did already make a first step. After sailing for only one year as a cadet at Wagenborg, I'll probably become 3rd engineer on the Looborg after my holiday. My ultimate goal is to become a superintendent, but that is something for the long term.

Wagenborg is a very good shipping company. You can learn a lot and they offer opportunities for growth. I want to share this in Vietnam, so more Vietnamese people can come and work at Wagenborg. Maybe I can even teach the younger colleagues then.

MARLON ESCANO

37 COOK

"I ALWAYS DREAMT OF BEING A SAILOR"

I always dreamt of being a sailor, so I was very happy when Wagenborg hired me. I first worked in the kitchen and on deck, but I loved cooking more, so I ended up in the kitchen. After 6 months of training in the kitchen, I was promoted to cook.

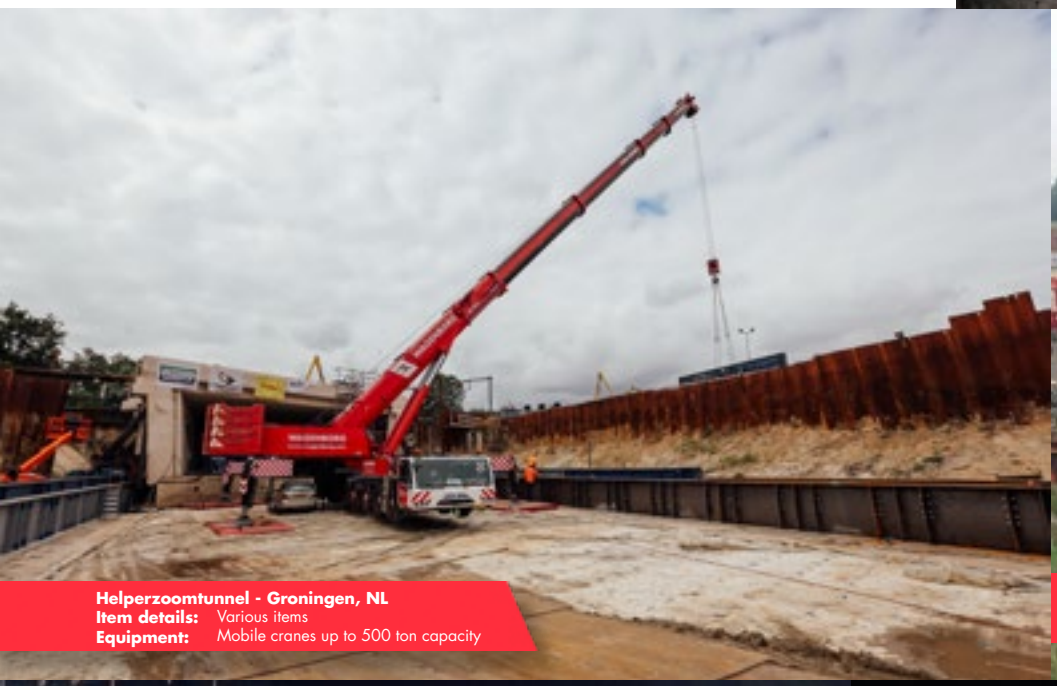
I prepare all sorts of dishes, depending on the wishes of the crewmembers. The Dutch like rice, bami, nasi and of course frikadellen. Ukrainian crewmembers love borsch and pelmeni. And today the Philippines are lucky, because I am preparing their favorite dish: Kare-Kare. My specialty? Almost everyone loves my chicken casanova.

I am doing this for almost 10 years now and I still love my work. I like serving the crew, making them happy with my food. The crews are very friendly, almost like family. And in between I've seen the most beautiful places in the world.

NO BRIDGE TOO FAR

Infrastructure projects face special challenges in the field of heavy transport and hoisting. Because how can a bridge of hundreds of tons be placed over a channel? Or can an underpass be put in place in a short decommissioning of the track? And how does a bridge through a narrow channel reach its destination? These are exceptional and difficult issues for you, for our specialists it is a challenge that they are happy to accept.

Kreuzungsbauwerk Hafenbahn KEG - Krefeld, DE
Item details: Rail bridge of 950 ton
Equipment: Sliding system and gantry crane



Helperzoomtunnel - Groningen, NL
Item details: Various items
Equipment: Mobile cranes up to 500 ton capacity

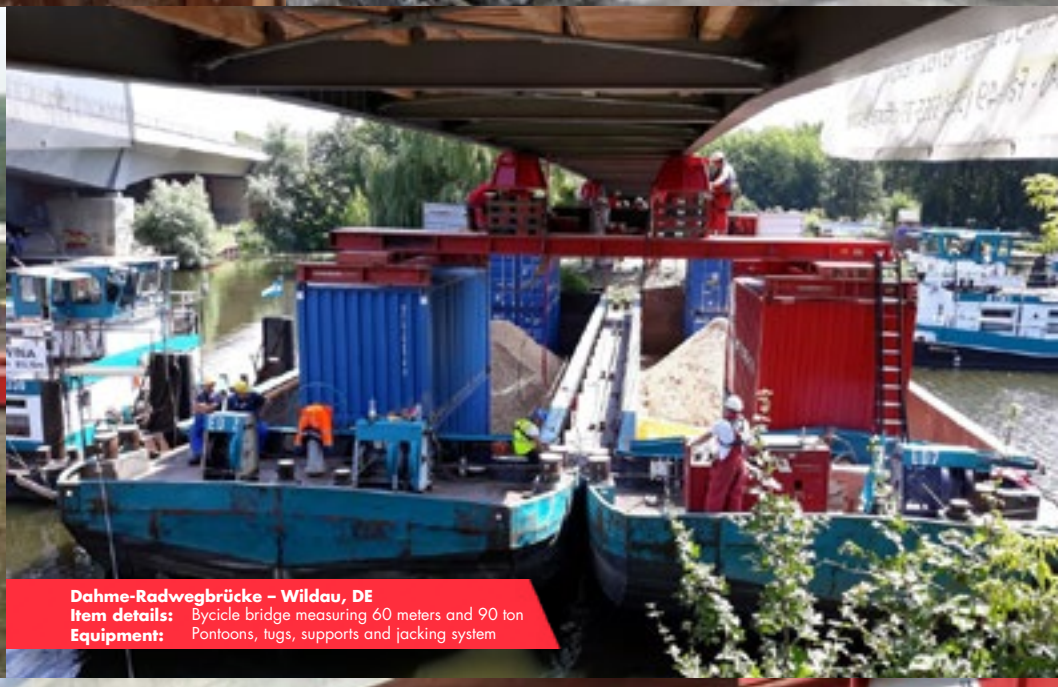
Aquaduct - Greven, DE
Item details: Aquaduct construction of 2.300 ton
Equipment: 44 axle lines SPMT

Eisenbahn Überquerung An der grünen Furth – Rösrath, DE
Item details: Rail bridge of 430 ton
Equipment: 14 axle lines SPMT, gantry crane

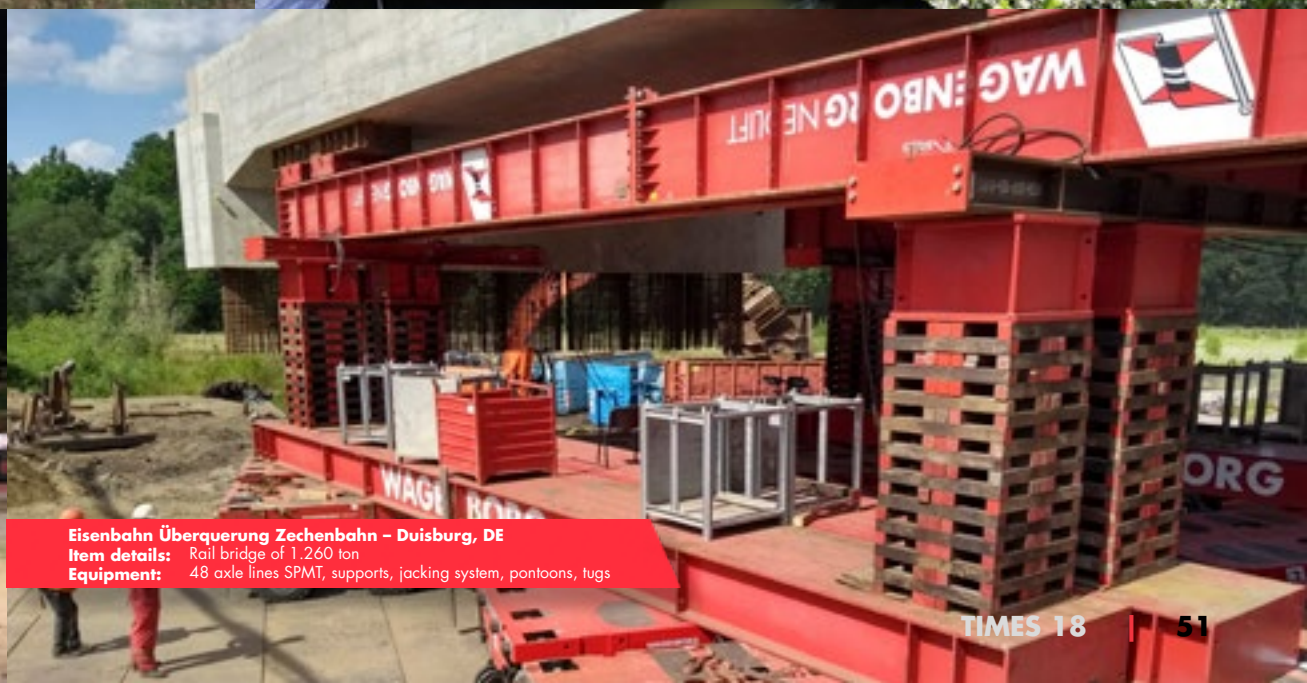
Spoorbrug Kuringen – Hasselt, BE
Item details: Rail bridge, various items
Equipment: Mobile cranes 500 ton and 700 ton capacity

Eisenbahn Überquerung A14 – Plate, DE
Item details: Rail bridge of 320 ton
Equipment: 20 axle lines SPMT, gantry, supports

Eisenbahn Überquerung Rauchstrasse - Essen, DE
Item details: Rail bridge of 1.400 ton
Equipment: 48 axle lines SPMT



Dahme-Radwegbrücke – Wildau, DE
Item details: Bycicle bridge measuring 60 meters and 90 ton
Equipment: Pontoons, tugs, supports and jacking system



Eisenbahn Überquerung Zechenbahn – Duisburg, DE
Item details: Rail bridge of 1.260 ton
Equipment: 48 axle lines SPMT, supports, jacking system, pontoons, tugs

NIESTERN SANDER AND AG EMS SIGN CONTRACT FOR LNG CONVERSION MV MÜNSTERLAND

In July shipyard Royal Niestern Sander and AG Ems signed an agreement for the conversion of the passenger ship Münsterland and provide it with an LNG propulsion. Niestern Sander receives a contribution from the European Regional Development Fund of the European Union for this innovation process.

Royal Niestern Sander will design and build a completely new aft ship for the passenger ship from 1986, including dual fuel engines, LNG storage tanks, propulsion systems, all LNG installations, pipelines and other systems. This completely new stern will replace the existing stern of the Münsterland. Thanks to its expertise and facilities, the yard has a unique conversion method in mind that offers the possibility of reducing the idle time of an existing ship – and therefore the loss of income – to a minimum.

COMBINATION SHIPBUILDING AND SHIP REPAIR

The project approach of Niestern Sander leans on the two pillars of the company, namely shipbuilding and ship repair. Due to the combination of shipbuilding and ship repair, the majority of the conversion operation takes place physically at the ship construction site, whereby the repair dock is not yet needed. The Münsterland can continue to operate as usual during this work.

GREEN RESULTS

Thanks to the LNG conversion, the Münsterland will start using a much less polluting fuel, which will reduce emissions significantly. The new shape of the stern will also reduce the hull resistance. As a result, the ship needs less engine power to sail at the same speed, which means a reduction in fuel consumption and noise.

In addition to emission benefits, the LNG conversion also offers advantages in terms of material use. The existing ship dates from 1986 and is therefore more than thirty years old. In theory, the ship has therefore reached the end of its life cycle. Due to the conversion operation, many technical systems are being replaced and upgraded to the current state of the art. The ship will actually be as new again and will get a second life. This doubles the lifespan of most of the ship in practice and saves a lot of material. The old stern with old systems and installations is dismantled by Niestern Sander in a sustainable manner and recycled as much as possible.

FEASIBILITY

With the MV Münsterland, Royal Niestern Sander has the opportunity to demonstrate the economic feasibility of an LNG conversion in practice thanks to its unique conversion method. It will also appear that the space limitation when converting an existing ship is soluble. AG Ems will put the Münsterland back into service in its new form in the first half of 2021.

"TO SAIL IN THE POLAR REGIONS, YOU REALLY NEED SPECIALISTS FOR THIS"

OCEANWIDE EXPEDITIONS

"In Antarctica you can sail for days without meeting a person. Then you really have to depend on each other." We talk to Oceanwide Expeditions Crewing Manager Fransien Dekker. She takes care of the crew of ships that bring guests to the Polar regions. A story about the constant search for good people and a special collaboration with Wagenborg Crew Management.

Nice to see that some ABs keep coming back to us and some have even made it to mate.

Endless snow plains, polar bears, glaciers, penguins and icebergs: for the crew of Oceanwide Expeditions it is daily fare. The organization has been providing Polar expeditions to these sometimes inhospitable areas for almost 25 years. Until 2010, Oceanwide chartered Russian ships to take guests to the northernmost and most southern places of the earth. Then the old naval ship Hr. Ms Tydeman converted into an expedition ship Plancius and the company itself had to look for crew.

FROM SUPPLIER TO CUSTOMER

"We had a crewing office in Manila, where we recruited Filipino crew," says Dekker. *"At that time, Wagenborg was one of our customers, until Wagenborg decided to let the crew run through one party from now on. For us, that meant the loss of a major customer. Then our director suggested transferring our office in Manila to Wagenborg and so it happened. That worked out well for all parties."*

Wagenborg Crew Management is now recruiting Filipino crew for Oceanwide Expeditions and arranging all necessary visas, contracts, training and such. To the satisfaction of Dekker. *"There are still a number of people working with us, including our account manager Iza Galang. Even though we are now the customer, she still feels like a colleague and needs only half a word."*

GROWTH

Oceanwide has now added various vessels to the fleet. Since 2012, the renovated Russian research vessel Ortelius has been sailing for Oceanwide Expeditions, in 2019 the brand new Hondius has made its first voyage and a new ship is being built. In addition, Wagenborg provides crew for the sailing ship Rembrandt van Rijn. In the summer the ships can be found in Arctica, in the winter they look for the summer in the southern hemisphere and the ships go to Antarctica.

SPECIALISTS

"On the one hand, the growth of our fleet puts pressure on the crewing office in Manila. We notice that the hotel functions are sometimes difficult to fill. There is a desire to recruit good people, but there is little supply. On the other hand, the growth of our fleet also offers opportunities for people to grow. That is of course very pleasant for the crew and contributes to a high rehire percentage.

And that is also nice for us, because to sail in the Polar regions, you really need specialists. They must not only be certified to sail in the ice, but must also have experience. Then it is nice to see that a large part of the crew keeps coming back. And the Plancius and Ortelius do not have a modern engine room. There really needs to be done old-fashioned. Here too, experience is pleasant."

HARDWORKING AND RELIABLE

Dekker is pleased with the Filipino crew. *"They are hardworking, benevolent, polite and reliable people. Nice to see that some ABs keep coming back to us and some have even made it to mate."*

MUHAMMAD NADENG

50 BOSUN

"THE SHIP IS OUR HOME. WE HAVE TO DO IT TOGETHER AND WE DO!"

I was a teacher at a primary school, when a friend of mine made me enthusiastic about sailing. He taught me everything he knew and on my 29th I went on board. Far away from my family. That was not easy. When I started, I was on board for ten months. The money, of course, is nice, but for me, that was too long. I am now 7 months onboard, and then I go home to my wife and four children.

Times have changed. In the beginning, I could only contact my family by sending a letter. And then I had to wait for the answer. This could easily take a month. Now you send an email and you can receive an answer within moments. The same goes for the agency. Communication has gotten much easier.

It is special to see the world. The vessels took me everywhere. Rio de Janeiro and Miami were, for example, beautiful. And you go there with colleagues from all over the world: the Netherlands, Romania, Russia, Ukraine: the ship is our home. We have to do it together and we do!

GALIH ASMOROJATI

24 3RD OFFICER

"THE CREWS ARE PROFESSIONAL AND HELPFUL. EVERYBODY IS LIKE FAMILY."

I started sailing at Wagenborg as an apprentice. After that I got a job as 3rd officer at MV Doggersbank. This is my second period on board of the Doggersbank. In between I worked for another shipping company, but I am very glad to be back at Wagenborg. The other company did not pay my salary on time, there was no internet on board, if you wanted to call home, I had to pay and last but not least: they did not pay enough attention to safety.

At Wagenborg we have a very clear safety system management. I am the safety officer on board, help out with the voyage plans and maintain the safety equipment. The crews are professional and helpful. Everybody is like family.

I'll never forget the first time we sailed to Finland. It was minus 32 degrees. We were going to a seamen mansion. We put on our winter coats and went outsight. At first, we walked towards the mansion, but it was so cold. After a few meters we all started running. Luckily the mansion was nice and warm.

SUSTAINABLE BUILDING FOR THE FUTURE WITH WAGENBORG NEDLIFT

The Netherlands is number one when it comes to nitrogen emissions in Europe. It is clear that something really needs to be done to secure a "sustainable future". Partly the ball is in business, by coming up with innovative solutions to limit emissions. Sustainability is also an important theme for Wagenborg. Wagenborg Nedlift likes to think along with society and its customers and therefore offers various (tower) cranes that can be used electrically. Sustainable "building" for the future with Wagenborg Nedlift!

Also the construction sector is affected
This spring, the Council of State confirmed that the PAS (Nitrogen Approach Program) is contrary to European legislation and regulations. The result: no more permits can be issued on the basis of the PAS, which means that 18,000 new projects are standing still. Because a large part of the nitrogen deposition (no less than 46 percent) comes from the agriculture sector, this sector is hard hit by this decision. Yet it is not just about the agriculture sector. A large number of construction projects are also affected by this decision. Consider the 'reinforcement of the Afsluitdijk' project, but also, for example, various housing projects.

Mobile tower cranes from Wagenborg Nedlift can also be used electrically
Wagenborg Nedlift is happy to think along with you in this matter and proactively searches for solutions to reduce emissions from (construction) projects and thereby also reduce its own CO2 footprint as a company. Wagenborg Nedlift has a very modern fleet. Various cranes are equipped with the latest and cleanest diesel engines. In addition, Wagenborg Nedlift has a number of Liebherr mobile tower cranes, the top motor of which can be used electrically (for power current). This makes it possible, after the crane has been stamped and assembled on site, to use the crane completely electrically. This significantly reduces the CO2 emissions of the lifting operations. The undercarriages of these cranes have engines with ad blue diesel technology, to also limit emissions during the supply and removal of the cranes as much as possible.

On to the future
Of course we are by no means there as a country when it comes to the road to a sustainable future. Nevertheless, Wagenborg Nedlift is working hard as a company to contribute as well. In addition to electrically operated mobile tower cranes, Wagenborg Nedlift also has electric compact cranes, for example, ideal for carrying out work at tight locations or even indoors. In addition, an order was recently placed for a new electric compact crane, four electric forklifts and three heavy truck-loading cranes with electrically operated cranes (of which the chassis is equipped with a clean Euro 6 engine).

"CO2-TRANSPORT AND -STORAGE POSSIBLE FROM 2022"

In conversation with Ludo van Hijfte and Haije Stigter to reduce CO2 emissions in a smart, fast and easy way

Ludo van Hijfte and Haije Stigter started more than two years ago with the start-up Fizzy Transition Ventures. Both with a different background, but with shared ideals and knowledge in the oil and gas world in which they have earned their spurs at Shell. Experience that helps them achieve their ideals. *"We offer companies the opportunity to drastically reduce their CO2 emissions within a few years."*

Ludo and Haije share the same concern about the climate and are motivated by their experience - together with a group of driven and experienced gas specialists - to accelerate the transition to a sustainable world.

We now know for sure that the concept is safe, realistic and practicable.

Capture CO2 at the source, compress it in a floating transport container, push the container with a boat to an empty offshore gas field and inject the CO2 into the field. In a nutshell, that is the scalable shipping concept that Fizzy Transition Ventures has developed for the transport and storage of CO2. *"The basis has always been to keep things simple. By making smart use of existing knowledge, we can make an impact quickly and easily. We think that is important,"* says Ludo van Hijfte.

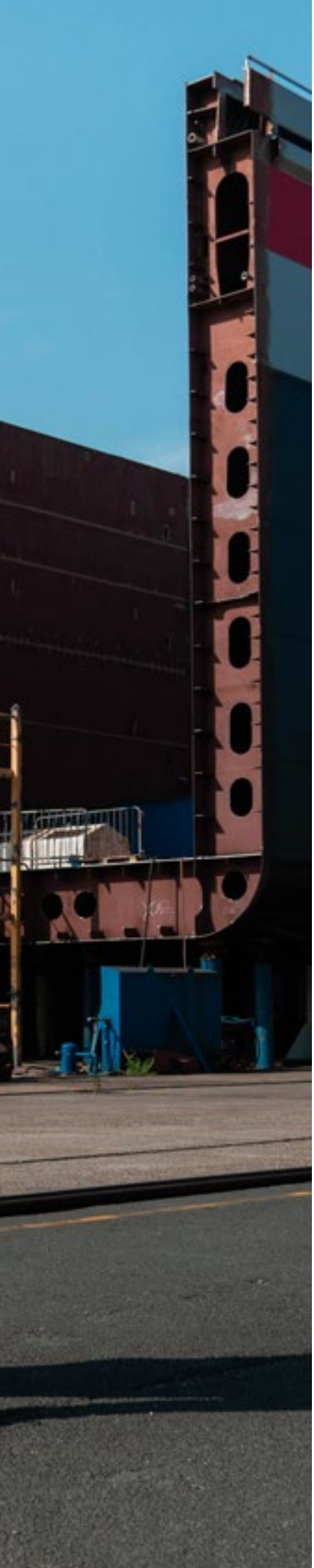
Of course, ideals are beautiful here, but if you really want to achieve results, a plan must be practicable. *"We now know for sure that the concept is safe, realistic and practicable and because of the mode of transport it can also compete commercially with existing concepts for transporting CO2, such as pipelines."*

GROUNDBREAKING COLLABORATION

Fizzy Transition Ventures is currently working on a detailed design and specifications of the transport container, pushboat and mooring system. *"Of course we cannot do this alone. Involvement of parties from the entire chain is essential for the success of the concept. That is why we are pleased that we have a strong consortium with partners such as Wagenborg, Niestern Sander, Petrogas, Imodco and Bureau Veritas,"* says Haije Stigter.

The collaboration between Stigter, Wagenborg and Niestern Sander is not new. *"In my role at Shell, since 2013, I have been closely involved with the development of the Kroonborg. With this first walk-to-work ship we jointly introduced a groundbreaking new ship concept for maintenance of offshore platforms at sea. And this is exactly where my motivation is: looking at how we can do things better, smarter and more efficiently. I am convinced that with this concept we can make a major contribution to achieving the climate objectives on time."*

Haije Stigter (left) and Ludo van Hijfte offer companies the opportunity to drastically reduce their CO2 emissions within a few years.



GLOBAL SUPPORT

The men have noticed that the world has changed over time, partly due to the climate agreement. Van Hijfte: *"When we started, there were no concrete plans in the Netherlands for storing CO2, and certainly not in empty gas fields. The CO2 capture and storage projects in Barendrecht and Rotterdam were stopped, CO2 emission prices were low and no one seemed to believe that a conclusive business case could be made. There is now huge political support for combating climate change. This translates into higher prices for CO2 emissions and concrete actions and initiatives at local, European and global level, such as the subsidy we received for developing our concept."*

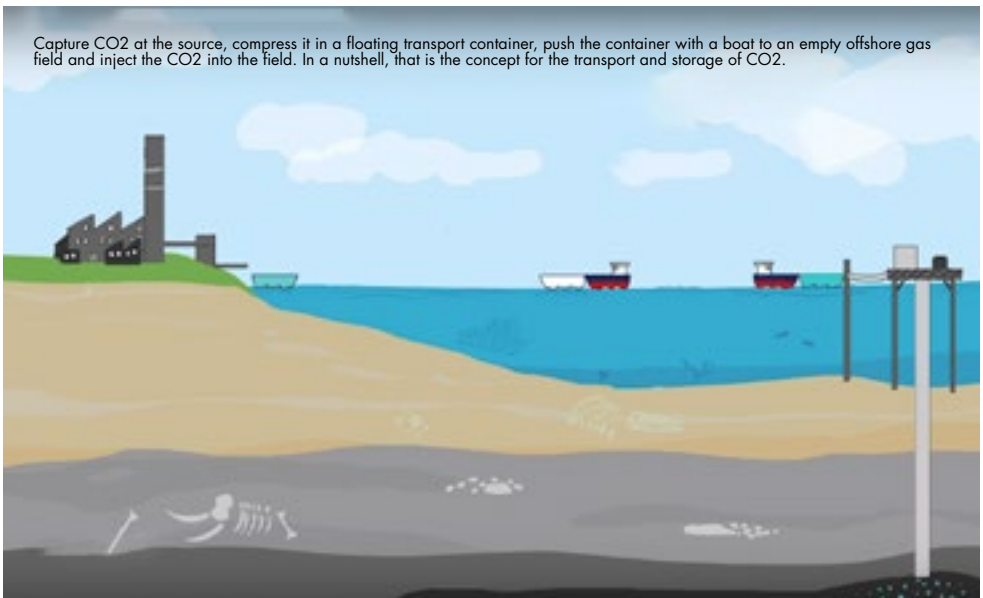
IMMEDIATE RESULTS POSSIBLE

To date, only a handful of CO2 storage projects have been realized, partly due to a lack of available storage locations. The gentlemen are convinced that empty offshore oil and gas fields are essential to drastically reduce greenhouse gas emissions in the short term. *"The majority of the available worldwide storage capacity is unused, while CO2 emissions continue unabated. At the same time, dismantling offshore locations ensures that a considerable number of suitable CO2 storage locations are permanently closed off; capital destruction if you ask us",* says Stigter.

The latest UN climate report concludes that unless we lower global energy demand below its current level (despite an increase in the global population by 2 billion people in 2050), the maximum 1.5-degree warming target can only be achieved if we implement CO2 storage on a global scale. *"By transporting CO2 directly from the source to an empty offshore field at sea, we simplify the logistics of CO2 transport, making it modular and scalable. By utilizing more of the available storage capacity in empty oil and gas fields at sea, we can quickly start the process of CO2 storage. Slow innovation in the industry to reduce CO2 emissions is no longer an excuse; we offer the possibility of immediately reducing emissions, while the transition to more sustainable production methods is being developed,"* concludes Van Hijfte.

Ludo van Hijfte (49) has built up a varied career following a university education in the field of mining. He started as an engineer at a Canadian mining company, later became a research analyst at a Canadian investment bank and afterwards gained more than 15 years of experience in various roles in the areas of corporate strategy, business planning, new business development and business improvement. Since 2017, he holds the position of general manager at Fizzy Transition Ventures.

Haije Stigter (58) has a maritime background as a marine engineer in addition to his technical engineering studies. After having sailed for the Holland America Line, he made the switch to Shell. He has played various roles in 22 years. In the meantime, Stigter has been involved in America as a global business consultant in improvement processes for (petro) chemical operations. In the past 12 years, the emphasis has been on operational (supporting) tasks with a focus on making offshore operations more sustainable. Since 2017 he holds the position of technical director at Fizzy Transition Ventures.



Capture CO2 at the source, compress it in a floating transport container, push the container with a boat to an empty offshore gas field and inject the CO2 into the field. In a nutshell, that is the concept for the transport and storage of CO2.

ELECTRIC HYDROGRAFIC RESEARCH VESSEL UNDER CONSTRUCTION

In April 2019, Royal Niestern Sander and Geo Plus B.V. signed the contract for the construction of a hydrogafic research vessel "Geo Ranger". The ship was designed together with Conoship International B.V. and will be launched by Geo Plus from the spring of 2020.

July 2019
First delivery of steel

September 2019
Keel laying ceremony

With ships equipped with sensitive sensors, Geo Plus supports globally operating dredgers, cable laying companies, wind turbine builders and marine researchers. *"They could not even do their work without the eyes under water of the Groningen company"*, says director Patrick Défilet.

The Geo Ranger, the sixth Geo Plus ship, is still scattered in parts in the immense halls of Niestern Sander. Mid-September was the keel laying and April next year the 42-meter long and 8.70 meter-wide diesel-electrically powered ship will be launched. *"Sideways, as we do in Groningen. As the first ship in our fleet. We were able to hoist the previous one, the Geo Ranger is too big for that."*

But with the euphoria about the Geo Ranger there is also the pressure and the sense of responsibility with regard to the investment of millions. *"This must be a success,"* says Défilet. *"I am well aware that so many people now work on the fleet, with at least 200 people dependent on their families."*

Nevertheless, there is great confidence in the success of the operation. The market for the activities of Geo Plus has recovered after a few difficult years and is also growing thanks to the construction of, among other things, offshore wind farms.

With the new ship and successor to the 34-meter-long Geo Focus, Geo Plus is getting a new toolbox filled with the most modern instruments to accurately map the seabed. The ship under construction can also continue to work well in heavy weather.

The approach and working method of Geo Plus makes the company rather unique and keeps the competition at bay. *"We now profile ourselves more as a specialized shipping company that rents survey vessels, equipped with high-tech equipment and possibly with our own crew of survey specialists. We have increasingly become an extension of the survey companies. We have the ships with which their specialists can take measurements."*

The Geo Ranger has become a ship that was created entirely within the Northern Netherlands shipbuilding sector. *"It has been a deliberate choice to develop and build it here,"* explains Défilet. *"We see it as part of our responsibility to stimulate the economy locally."*

"There is so much quality and knowledge here in shipbuilding. It is a shame that we are so modest about it. We never shout it from the rooftops, but if you look at it from a distance, we should be able to show it more."

October 2019
Installation bridge deck

November 2019
Section building in progress

PERFECT COOPERATION: **WAGENBORG-COMPANIES MOBILIZE WAVEWALKER**

On the Wagenborg quay in Eemshaven, Wagenborg has mobilized the "WaveWalker" jack-up vessel in preparation for a Prysmian pipeline project.

The WaveWalker had to be equipped with a "cantilever deck". Sounds simple, but in practice many Wagenborg companies were involved, each with its own expertise. Wagenborg Agencies took care of all customs matters for all deliveries and was responsible for full coordination. Wagenborg Stevedoring made the quay available and assisted with a foreman, harbor crane and other work on the quay side. Engineers from Wagenborg Nedlift developed and calculated all constructions and also supplied various mobile cranes up to 500 tonnes during the mobilization and transported the cantilever deck on the quay with Self Propelled Modular Trailers (SPMTs).

After this successful installation, the mobilization came to an end and the WaveWalker left the Eemshaven.


NEXUS
Van Oord

1

FROM THE FLEET

2

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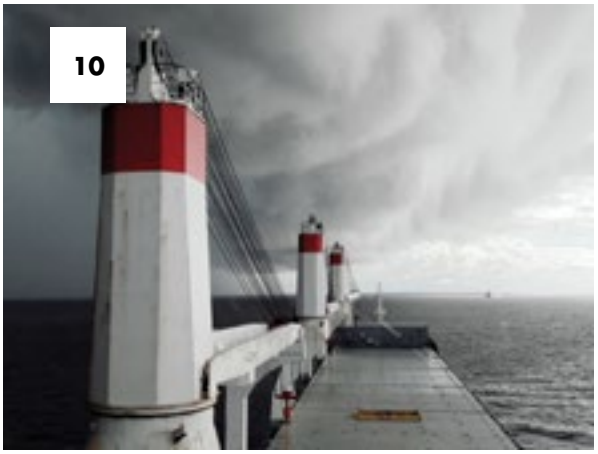


1 Morgenstond II in the port of Montrose - photo: Glyn Lewis
2 The MV Sydborg loads SBPP in Delfzijl - photo: Guus van der Linde
3 Eemsborg at the Corinth Canal - photo: via Holland Hellenic
4 Reggeborg in Noorway - photo: Quincy Vermue
5 Taagborg loads yachts in Port Everglades - photo: Niels Groen
6 Volgaborg near Detroit - photo: Bill Boswell
7 Taagborg loads a project cargo in Windsor, Canada - photo via crew Taagborg
8 Americaborg loads paper in Baie Comeau
9 Beatrix under the Blue Water Bridge in Canada - photo: Julie Horning
10 Tropical storm approaches the Nassauborg in Rio Para, Brazil - photo: Leo de Jong
11 Lauwersborg loads paper in Kemi - photo: Mark Admiraal
12 Taagborg passes in Costa Rica - photo: Joop Verloop

THE KNOWLEDGE CENTER IN THE FIELD OF THOUGHTFUL ENGINEERING SOLUTIONS

Wagenborg Engineering is the place to go for sophisticated engineering solutions in the heavy transport and hoisting industry. But what exactly does Wagenborg Engineering offer its customers and what makes Wagenborg Engineering so strong? We spoke with Thijs Nieuwenhuis, Head of Engineering at Wagenborg Engineering.

"Wagenborg invests in well-trained engineers as well as in hardware and software to be able to perform and offer its engineering services at a distinctive level. You can think of both drawing and calculation work," says Thijs Nieuwenhuis. *"The more complex the material, the more interesting we become for our customers. We always stand for the right solution."*

But what makes Wagenborg Engineering unique?
"That is the special combination between practical experience and specialist professional knowledge. That can be called unique in our world. In addition, our engineers have good knowledge of the market and recent market developments, which is also an advantage," explains Thijs. *"This includes matters such as familiarity with globally recognized applicable norms and standards."*

What kind of questions do customers come to Wagenborg Engineering?
"That is very different. This mainly concerns hoisting and transport engineering issues in the broadest sense of the word for which we offer total solutions. In other words, A to Z solutions. In particular, where our customer really can't solve it and needs a solid party that analyzes the entire issue and offers an overall solution, we come to the fore. The result can be a specially customized hoisting or transport construction, but also a route study or a feasibility study. We do not offer standard solutions, but only offer customized solutions. Every question from every customer is therefore different and challenging in its own way."

What does the collaboration between the customer and the engineers look like?
"In short: direct and personal. We always sit down with our client

to discuss and define the problem in detail. In this way we ultimately arrive at the most suitable solution. We have a pleasant one-to-one contact with all our customers. That is the basis of collaboration. And trust. In both us as engineers and in the solutions that we offer. That is an important added value for our customers in choosing Wagenborg Engineering."

What makes working at Wagenborg Engineering so interesting for you?

"I find the great variety in the various projects interesting. And I think it's really nice to see projects that you think up in advance that are executed in practice. Personally, I think it is the greatest challenge to be able to offer a solution to an issue that is impossible in the eyes of the customer. Take the problem completely out of your hands and solve it. That appeals to me the most in my position. "

Contact

Do you want to know more about what Wagenborg Engineering can do for you? Then contact our experts without obligation:

www.wagenborg.com/engineering
Tel .: +31 (0) 88 050 5100

IN CONVERSATION WITH PROJECT MANAGER BART OUDE OPHUIS

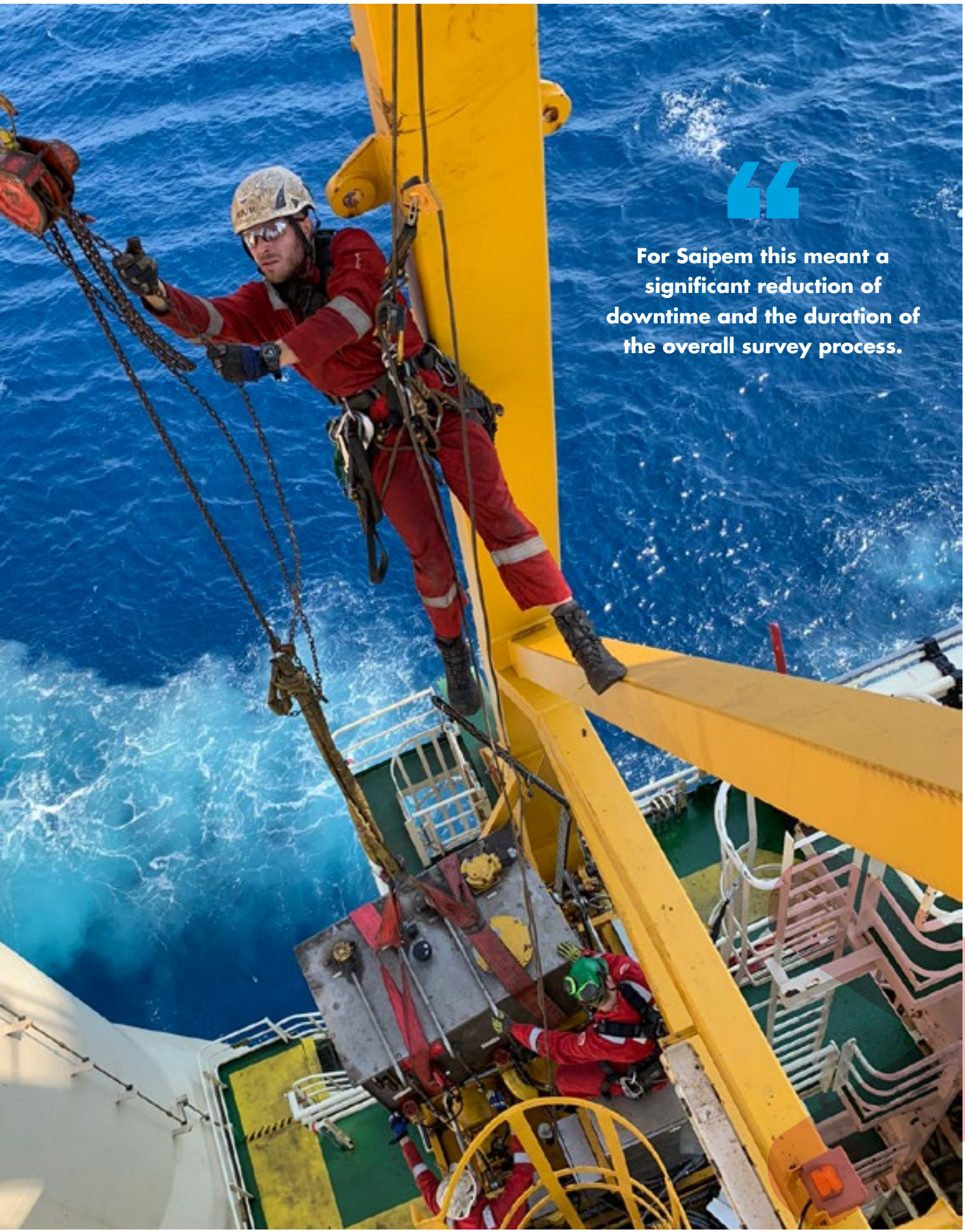
WAGENBORG FOXDRILL CONTRIBURES TO TIME-SAVING SPECIAL PERIODIC SURVEY ON BOARD DRILL SHIP SAIPEM 12000

For many years Wagenborg Foxdrill has been a trustworthy partner of the Italian offshore firm Saipem. Having worked together on a variety of drilling asset related projects in all corners of the world, a solid relationship has been formed between both companies. This partnerships continues after an enquiry from Saipem's Offshore Drilling team early 2019: the Saipem 12000, a 6th Generation ultradeepwater drill ship, was due for a Special Periodic Survey and required specialised support. We talk to project manager Bart Oude Ophuis about this project.

A SIGNIFICANT REDUCTION OF DOWNTIME

A combined scope was prepared to maximise the added value of Wagenborg Foxdrill's presence and involvement in the preparations for the Special Periodic Survey. Bart Oude Ophuis explains: *"After careful considerations and a risk assessment, we planned a large part of the activities to take place during the sea voyage of the Saipem 12000 from offshore Pakistan to Port Elizabeth in South Africa. For Saipem this meant a significant reduction of downtime and the duration of the overall survey process. However, our team on board faced a challenging feat: most of the inspection activities involved working at height while the drillship was sailing across the Arabian sea."*

The scope of the first part of the project included a full visual derrick inspection, a bolt tightness survey as well as a Dropped Object Survey. Bart continues: *"For this phase, a first team of specialists - led by supervisor Bart Poorthuis – was mobilized to Karachi. They completed their journey with a 20 hour sea voyage to reach the drillships location, 370 nautical miles offshore. Before the team arrived at the drillship, I made sure the specifically selected equipment set was already on location. For this, we airlifted all equipment from Netherlands to Karachi and transported it to the drillship. Upon arrival, our team could start immediately with the various planned inspections and surveys."* Foxdrill team members Bart Poorthuis, Frank Groeneveld, Ferry Snijders, Peter Bornebroek utilizing rigging techniques and rope access to remove and lower the crane's cylinder. By using rope access and while adhering to strict safety measures, this first part of the scope was completed in time and before arrival at Port Elizabeth. All three activities are part of risk reduction efforts and the maintenance strategy of the Saipem team.



For Saipem this meant a significant reduction of downtime and the duration of the overall survey process.

ABOUT SAIPEM

Saipem is a leading company in engineering, drilling and construction of major projects in the energy and infrastructure sectors. It is "One-Company" organized in five business divisions (XSIGHT, dedicated to conceptual design, Offshore E&C, Onshore E&C, Offshore Drilling and Onshore Drilling). Saipem is a global solution provider with distinctive skills and competences and high-tech assets, which it uses to identify solutions aimed at satisfying customer requirements. Listed on the Milan Stock Exchange, it is present in over 70 countries worldwide and has 32,000 employees of 120 different nationalities.

With the completion of the recertification activities of the drilling equipment of Saipem12000 and with the ship now in operation, I take the opportunity to thank Foxdrill Team for the great work done and for the spirit that has distinguished this project so important for us. It has been not easy, surely challenging but having prepared the activities in advance and with the right approach has contributed significantly to achieving the desired result. Anyway, without the willingness of everyone to participate actively and with interest in the project this result would not have been possible. The professionalism, the attitude and the experience of the climbers team have been important for us during all the SPS phases and the positive approach to the project has surely contributed to achieve the expected positive result.

Fabrizio Bonifacio – Saipem Drilling Offshore

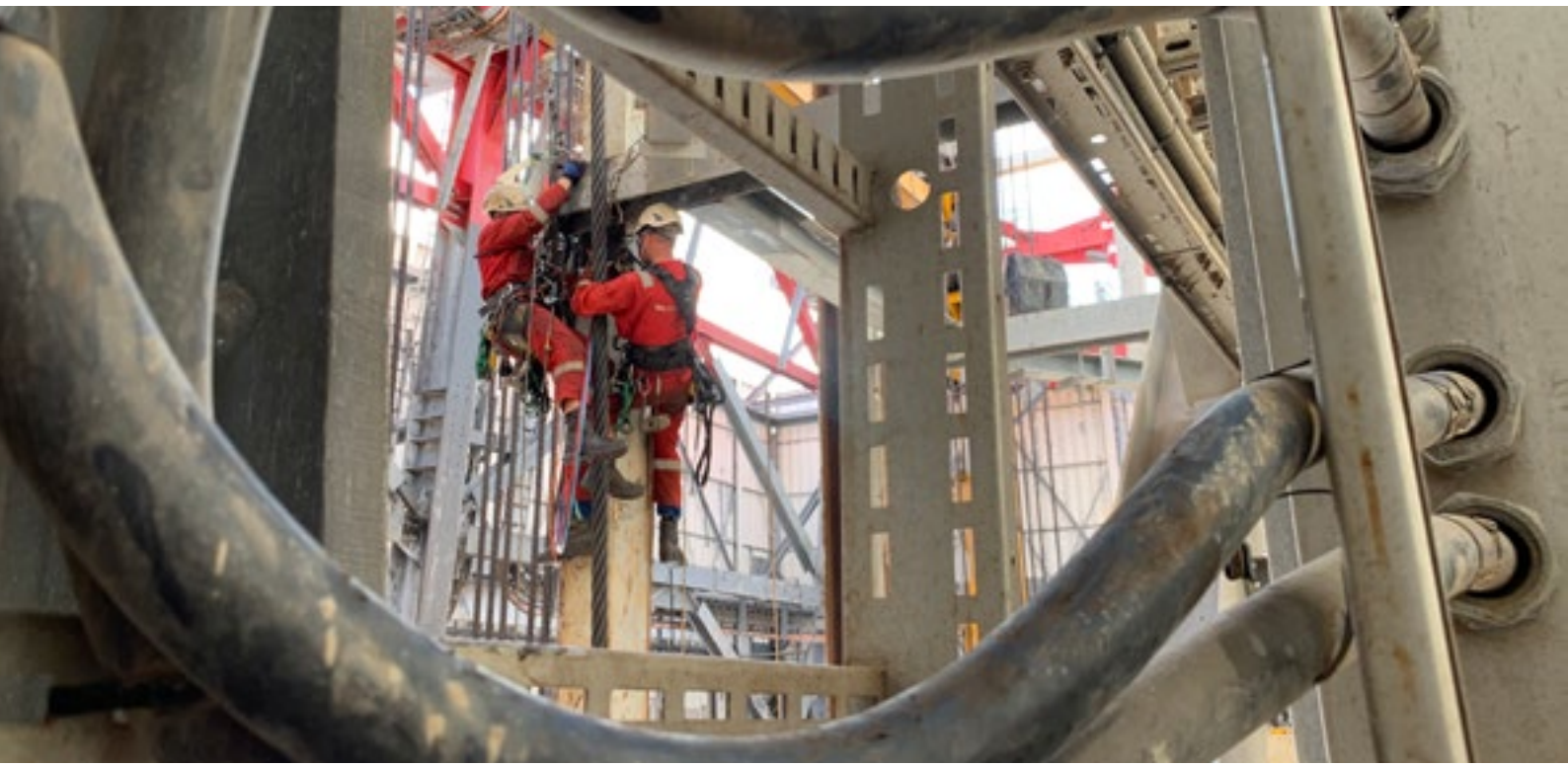
> One of the essential components was the accumulator, weighing over 8 ton, installed at height of 100 meters above sea level!

DISASSEMBLY AND REMOVAL OF EQUIPMENT

Upon arrival in Port Elizabeth the first Foxdrill team was relieved by a second team. *"In the second phase of the project, the new team – led by rope access team leader Sander Hilbrink - started with partial disassembly and removal of various equipment pieces"*, Bart continues. *"One of the essential components was the accumulator, weighing over 8 ton, installed at height of 100 meters above sea level! This component is part of the system which keeps the drill string isolated from the ships heaving during drilling operations. We also removed the crown block, gripper heads of the BOP guide system, mainboom and valves of the knuckle boom crane. The team also removed sizable hydraulic cylinders from the ships knuckleboom crane, to allow for close inspection and replacement of seals. To conclude this second phase, the Wagenborg Foxdrill team assisted with removal of the topdrive . Upon completion it was prepared for inspection ashore."* After the various pieces of equipment were removed and lowered, the Wagenborg Foxdrill team was demobilised. Various OEM's and other parties were involved to carry out detailed maintenance and overhaul of the drilling equipment ashore. This took several weeks to complete at specialised facilities in Port Elizabeth.

REINSTALLATION AND RECOMMISSIONING

Once the equipment was again ready for service and brought back on board. Bart explains: *"Wagenborg Foxdrill mobilised a third team to take care of lifting, rigging and reinstallation of the equipment. This third phase involved a rope access team of four man working in dayshift, led by supervisor Bart Poorthuis. Over the course of a two week period and in close cooperation with Saipem crew and OEM specialists, a variety of cylinders, pipe handling equipment, drilling equipment and other key components were reinstalled and recommissioned."*



Upon completion of the third phase, the Saipem 12000 Drillship set sail for its next drilling campaign at an offshore location at a significant distance off the coast of Mozambique. *"During this sea voyage, the team - led by Patrick Brookhuis - carried out an inspection to verify closeout of finding from the earlier performed Dropped Objects Survey. Foxdrill inspects and reports according the global DROPS guidelines"*, tells Bart. DROPS is essentially a Global Work Group, represented by 200 operators, contractors, service companies and industry bodies, all sharing commitment and for the common goal of preventing any (potentially harmful) dropped objects.

PRIORITY

Later on, during this fourth and final phase, Wagenborg Foxdrill was contacted by the Saipem project team with a priority request. *"Saipem wanted us to provide support in aligning the derrick's guide tracks"*, Bart continues. *"These tracks support lateral movement of drilling equipment in the derrick and absorb the torque exerted by the ships topdrive on the drill string. This can extend up to several 1000 meters through ocean and into the earths subsea surface. We were able to mobilize a specialised surveyor within a couple of days. With measurements carried out in cooperation with the rope access team and by installing shim plates where required, it was assured that the structure was fully aligned once again, thereby supporting accurate drilling and reducing wear and tear in the installation."*

Upon arrival at the new drilling site, Saipem and Foxdrill had successfully completed the planned scope of work and the drillship Saipem 12000 was ready to commence drilling for its client ENI.

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THE NUMBER 1

The most viewed, shared, and liked picture of last months. The MV Egbert Wagenborg leaving the port of Delfzijl to load alumina in San Ciprian.

MARITIME LOGISTICS

With the broad (Dutch) public, Wagenborg is mainly known for the ferry services to the Wadden Islands Ameland and Schiermonnikoog. However, Wagenborg is more than that. With a fleet of approximately 250 units, including dry cargo vessels, offshore vessels, tugboats and various pontoons, Wagenborg supplies various maritime logistics services to 3,000 employees worldwide. We like to show you the diversity of our company on our social media channels.

ARE YOU A FAN OF US?

Tag #Wagenborg in your most beautiful pictures of our ships, impressive cargoes, projects or environments. We are happy to share them on our social media channels with other Wagenborg fans. Everyone can enjoy this on the world. How nice is that!

Of course you can also mail!
Mail: **times@wagenborg.com**

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DID YOU SPOT US SOMEWHERE? | Share on Facebook or Instagram

130 YEARS OLD AND STILL GREEN

-65%
CO2 emissions
compared to her peer group

130 YEARS OLD, BUT STILL GREEN

Growing old is inevitable. As the years pass one is expected to assume an increasing number of responsibilities, particular toward the environment. Since Egbert Wagenborg started sailing in 1888, Wagenborg has led the way in investing in people, quality, technique and the environment. Wagenborg was one of the first shipping companies in the world to gain ISO 9001, ISM Code and ISO 14001 certifications in addition to a Clean Shipping Index registration. Naturally, we are proud of our success in this field, but that does not mean we are complacent. Far from it. We regard our achievements as merely being steps in the right direction. For us the environment is top priority, not only today but for the future – and for the generations to follow. We like to think ourselves as flexible as far as our customers are concerned, but on green issues we do not compromise. No matter how old we become.

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ISO 9001 ISO 14001 ISM Code

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