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International Maritime Review

New technologies are needed to avoid disasters at sea

The shipping companies are preparing for low-carbon seafaring

Covid-19 crisis has hit the marine industry in various ways

– and cruise lines and shipyards alike have been struggling to cop

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AFTER THE STORM

Despite a challenging year in 2020, there is optimism on the horizon. According to brand new 2021 State of the Cruise Industry outlook by Cruise Lines International Association (CLIA), two out of three cruise-goers are willing to cruise within a year and 58% of international vacationers, who have never cruised, are likely to cruise in the next few years.

Covid-19 crisis was felt very much on the waves, as cruise ships infected with the virus turned into "escape rooms" in the minds of the people. Looking at industry unemployment alone, last year every 1% loss of cruisers resulted in a reduction of 9,100 industry-related jobs. Each day of suspension caused direct and indirect industry losses of 2,500 jobs.

Nevertheless, the foundations of a strong industry have not disappeared overnight. In 2019, for example, cruising sustained 1,166,000 jobs, equaling $50.53 billion in wages and salaries and $154.5 billion total output worldwide.

The industry has adjusted. From early July through mid-December 2020, there were more than 200 sailings with multiple layers of enhanced measures in place. CLIA contends that the success of these initial sailings demonstrates new protocols are working as designed – to mitigate the risk of Covid-19 among passengers, crew and the destinations cruise ships visit.

And what's in the cards for this year? CLIA anticipates the debut of 19 new ocean ships in 2021, resulting in a total of 270 CLIA Cruise Line ocean ships projected to be in operation by the end of the year. Looking ahead, this "Fleet of the Future" will feature enhanced health and safety cruise protocols for the resumption of passenger operations.

As the Covid crisis fades, we must renew our commitment to a cleaner, more sustainable future. So far, we've seen a staggering $23.5 billion investment in ships with new technologies and cleaner fuels to reduce carbon emissions. This, in itself, is a powerful statement that speaks volumes about the industry's desire to well and truly tackle climate change.

This means, for instance, that half (49%) of new build capacity on order will rely on LNG fuel for primary propulsion – and almost all (99%!) of new ships on order will have Advanced Wastewater Treatment Systems in place, bringing global capacity served by these systems to 78.5%.

Partnerships with local governments in key destinations are a big part of this green mindset. Ultimately, the cruise industry is committed to reducing its rate of carbon emissions by 40% by 2030 compared to 2008.

PETRI CHARPENTIER

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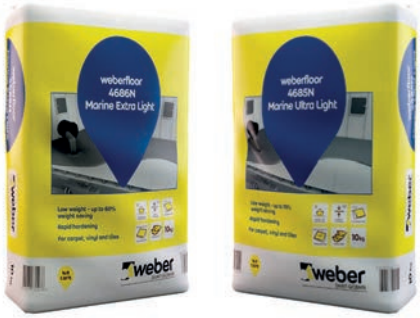

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Business as Unusual

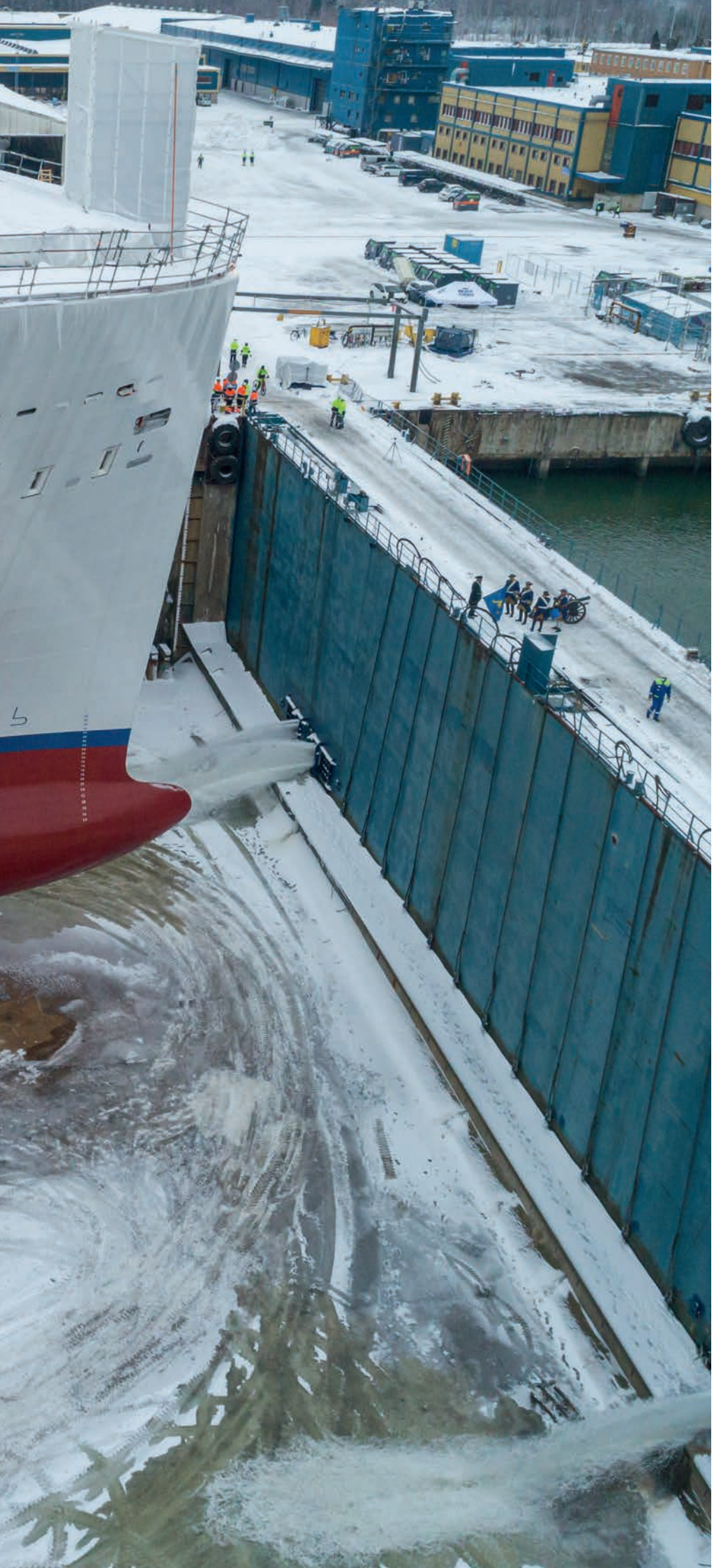
MEYER TURKU POWERS THROUGH A DIFFICULT YEAR

by: SAMI J. ANTEROINEN
photos: MEYER TURKU

Covid-19 crisis has hit the marine industry in various ways – and cruise lines and shipyards alike have been struggling to cope. Meyer Turku has been able, for the most part, to keep its eye on the ball and keep grinding, despite mounting odds.


472

"The Meyers see the value in rotating duties from time to time.



Turku also has the benefit of fresh energy in the corner office as Tim Meyer stepped in as the CEO of Meyer Turku shipyard in summer 2020. Being a family-owned company, the Meyers see the value in rotating duties from time to time; Jan Meyer, who led the shipyard for six years, is now the Managing Director of Meyer Werft, Germany. Tim Meyer was previously the managing director of Meyer Werft so the brothers are, in essence, changing jobs.

Last summer, the family patriarch Bernard Meyer commented that it's always been the plan to rotate the leadership at some suitable time in the future. According to Bernard Meyer, the handling of corona crisis will require and lead to major changes on all yards; and as these changes and new structures are implemented, it was now "good timing" to carry out a family internal leadership switch between Jan and Tim.

Additional goal of the switch was to ensure continuous improvement by changing perspectives and defining the future structure of the Meyer production network.

POWER OF THREE

Returning to Germany, Jan Meyer noted that the three yards in Papenburg, Turku and Warnemünde are already working closely together – the yards are constantly learning from each other and the company is seeing the benefits of this cooperation. The exchange of people between the locations is essential and "a success factor for the future," added Jan Meyer.

The new "number one guy" at the Turku shipyard, Tim Meyer, has expressed eagerness to work even more closely together with the shipbuilders and partners in Turku. In his mind, also, it is vital to encourage an exchange between the yards on all levels.

As Tim Meyer started his job, Meyer Turku succeeded in concluding a key agreement with its customers to stretch the fixed order book to reach 2026. According to the shipyard, this marks an important step to stabilize the entire Finnish cruise ship


Costa Toscana
ALUSTEN KIINNIOTTO VIISI METRIÄ
LÄHEMMÄKSI PORTTIA ON KIELLETTY
MINIMUM MOORING DISTANCE
FROM THE GATE FIVE METERS

"Costa Toscana is a sister ship to Costa Smeralda, delivered from Turku in 2019.

building cluster until the market situation for new orders recovers again.

COSTA TOSCANA FLOATED OUT

To start of the new – and hopefully better – year, Costa Toscana was floated out at Meyer Turku shipyard on 15 January 2021. The LNG powered, 185,000 GT cruise ship gives proof to the shipyard's resilience – to keep the operations moving even in the midst of a once-in-a-century pandemic.

At the time, Tim Meyer commented that the float-out is always "a very special" occasion for the shipbuilders, marking the start of the final stage of shipbuilding.

"In the coming months, she will be finalized at the pier and then tested and commissioned in the autumn for delivery", Tim Meyer laid down the timeline.

According to Tim Meyer, passengers will greatly enjoy cruising on this beautiful ship as the Covid crisis is finally vanquished: in fact, he believes Costa Toscana will enter service in a world where passengers will once again be able to fully enjoy the wonders of the seas.

In connection to the float-out, Mario Zanetti, Chief Commercial Officer of Costa Cruises, noted that the cruise line is already looking beyond the pandemic and focusing to complete the transformation of its fleet and operations into a sustainable model. In addition to LNG technology, this means that Costa is developing other innovative solutions, such as shore power and batteries. The ultimate goal is achieving zero emissions.

GREEN TO THE CORE

Costa Toscana is powered by liquefied natural gas (LNG) and has been designed with a circular economy concept. The use of LNG will eliminate all sulfur dioxide emissions and almost all particular matter emissions (95–100% reduction), while also significantly lowering emissions of nitrogen oxides (direct reduction of 85%) and CO_2 (up to 20%).

"The Finnish marine cluster needs to pursue innovations.

The ship also features an intelligent energy efficiency system, and 100 % of the ship's recycling materials (such as plastic, paper, glass and aluminum) will be carried out of the ship and recycled.

Costa Toscana is a sister ship to Costa Smeralda, delivered from Turku in 2019. Adam D. Tihany has curated the impressive design of the interior, as with Costa Smeralda.

MARDI GRAS SAILS AWAY

Just a month earlier, Meyer Turku delivered the 180,000 GT, LNG powered cruise ship Mardi Gras to Carnival Cruise Line. This occasion proved that the yard can, indeed, deliver in a tight spot, despite the Covid-19 raging in the background.

Delivery of Mardi Gras was also an important moral booster, given that the shipyard had to lay off 84 people in November, and 166 people already in August. However, the original estimation for the downsizing need – made in April – was 450 people, meaning that the hit wasn't quite as bad as feared initially.

Still, even in a toughest storm, one must keep scanning the horizon. One "ray of light" offered last year was the announcing of strategic partnership between Meyer Turku and University of Turku, with the objective of developing and strengthening education and research in engineering.

RESEARCH ANCHORS INNOVATION

The strategic partnership is an investment for the future: the Finnish marine cluster needs to pursue innovations – driven by strong research – in order to stay truly world-class. With this partnership, Meyer Turku also pursues more effective recruitment through closer student collaboration.

The Meyer family is confident that the Covid crisis, too, will pass – and that the company will meet the future eye-to-eye. Last year, as his sons switched executive chairs, Bernard Meyer remarked that if the company takes the right, bold steps – while taking into account change – it will emerge from this crisis stronger than before. ■

Rethinking Shipbuilding: Green Wave Rising

by: SAMI J. ANTEROINEN

photos: PIXABAY

Creation of more sustainable shipbuilding concepts is very much a concern for the key industry players. With carbon-conscious millennials filling more and more of the cruise ships during the 2020's, the shipyards and cruise lines are looking at all their processes with a critical eye: what can we do to make this greener?

As bringing down the carbon emissions of the ships has also societal reach, universities and research institutions are eager to lend a helping hand to the marine industry – and new programs and projects emerge to explore various facets of sustainability.

One recent example from Finland is a new project, Sustainable Shipbuilding Concepts (SusCon), which focuses on sustainability-based value-creation in the cruise ship industry. Coordinated by University of Turku, this is a joint effort by VTT, Royal Caribbean Group, Meyer Turku and the Finnish marine cluster.

The SusCon project wants to find new solutions and methods to boost sustainability already in the early building phases of the ship. In addition to launching greener ships upon the seas, SusCon aims to highlight the social responsibility issues of the marine clusters.

SETTING THE STANDARD

Head of the project, researcher Teijo Lehtonen from the University of Turku says that the common goal of the SusCon partners is to develop and test new kinds of working methods and routines – and to analyze the results from the viewpoint of sustainability as well as other relevant metrics.

"A simple example of this is the drop in traveling volumes which results from streamlining planning processes. This decrease, in turn, yields a positive climate impact," Lehtonen says.

Sustainability is nothing new in any industry – and Finnish marine cluster has

stellar references from the field, ranging from eco-efficient hull design to building LNG-powered cruise ships. A key part in the making of these success stories is transparency and certain kind of openness; for instance, best practices are able to spread across the supplier network better than in most countries.

EYE ON BUSINESS OPPORTUNITY

Project Manager, researcher Kaapo M. Seppälä from the University of Turku points out that in addition to boosting operative processes and work methods there is also the commercial angle: both cruise lines and cruise goers respond to green sales pitches if they assess them to be genuine.

"SusCon defines the playing field with regards to timing issues: what is the best phase in the project to engage in a commercial conversation? In a ship project, the details of construction are decided pretty early on, so it may be difficult to implement changes when you're already in the building phase," Seppälä says.

Funded by national business booster Business Finland, SusCon is part of Business Finland's Sustainable Manufacturing Finland program.

EU STRATEGY REDISCOVERS SHIPYARDS

Sustainable maritime is in the minds of the EU, too, as evidenced by European Commission's Smart and Sustainable Mobility Strategy. Published in December 2020, the strategy covers all modes of transport, including waterborne trans-

"SusCon is part of Business Finland's Sustainable Manufacturing Finland program.

port. What's new, however, is that for the first time, the strategy covers relevant points from the perspective of Europe's shipyards and maritime equipment industry.

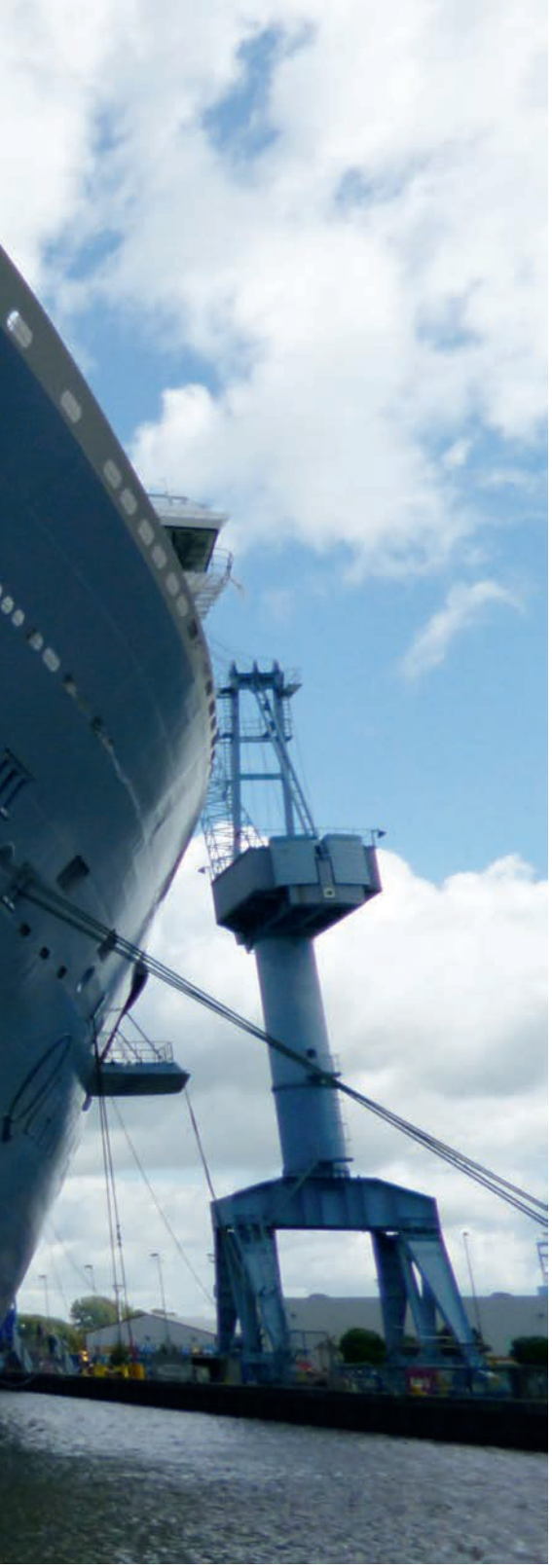
The mobility strategy focuses on policies to make waterborne transport a sustainable and smart mode of transport. These policies are in line with the ambitions from the European Green Deal and take into account the opportunities offered by digitalization, automation and autonomy in shipping, inland navigation, ports and the logistics chain.

The new mobility strategy also has proposals aiming at making waterborne transport more resilient in the aftermath of the Covid-19 crisis and pays attention to the challenges of the waterborne transport sector, including maritime technology, in terms of sectoral skills and competitiveness.

WANTED: GREENER TECH & FUELS

From the perspective of Europe's maritime technology sector, the new strategy contains a number of helpful proposals, such as contribution from the 'Zero-Emission Waterborne Transport' Partnership, adopted under Horizon Europe, in terms of acceleration of research and innovation in green technologies and sustainable fuels.

The strategy also includes a proposal to finance the modernization of



fleets, involving also retrofitting and fleet renewal schemes. The Commission recognizes that such support "will help to preserve a thriving manufacturing ecosystem in areas where Europe has a strategic technological advantage such as the vessel manufacturing industries".

In addition, waterborne transport equipment and solutions are acknowledged as the engine of European exports and that a sustainable and smart transformation of the sector is an opportunity for Europe's manufacturing industry to lead globally.

RENEWING THE FLEET

Unsurprisingly, the strategy paper has the backing of the European maritime industry; for instance, the industry association SEA Europe – representing close to 100% of the European shipbuilding industry in 16 nations – has applauded the new strategy.

Christophe Tytgat, SEA Europe's Secretary General, noted that Europe's shipyards and maritime equipment manufacturers are very much needed in the frontlines for Europe to realize numerous sustainable EU policies, including the European Green Deal and Digitalization Agenda. According to Tytgat, the Commission's acknowledgement that finance can be used to modernize fleets, inter alia through a fleet renewal scheme, is very much welcomed.

Furthermore, there is already an alliance – comprising key players within the European waterborne transport sector – proposing a new Research and Innovation Partnership over a period of seven years.

Strongly aligned with the EU's Green Deal, this Partnership's central objective is to provide and demonstrate zero-emission solutions for all main ship types and services before 2030, enabling zero-emission waterborne transport before 2050. ■

Ready for the ride?

DESPITE HISTORIC CHALLENGES, MEYER TURKU SHIPYARD DELIVERED MARDI GRAS ON SCHEDULE

by: SAMI J. ANTEROINEN

photos: MEYER TURKU

On December 18th, 2020, Meyer Turku delivered cruise ship Mardi Gras to the world's largest cruise ship operator Carnival Cruise Line. The timely "Christmas delivery" of the 180,000 gross tonnage, LNG powered cruise ship marked a very important step for the yard – especially under the extremely trying circumstances of the COVID-19 crisis. Mardi Gras is planned to enter service from Port Canaveral, Florida in April 2021.

Project Manager Jaakko Leinonen acknowledges that every ship project comes with its share of challenges, but, this time around, those challenged reached almost Biblical proportions.

"Covid-19 hit in March 2020 and we took all possible precautions, with masks and safety distancing and the works. At the same time, we kept hearing about shipyards in France and Italy shutting down due to the pandemic and had to wonder, can we keep this going?" Leinonen looks back at the harrowing experience.

> **"The pandemic was our biggest hurdle to cross and we were able to handle it.**

LIVING ON THE EDGE

With 5,000 workers coming through the yard gates on peak days during the summer, that left room for a whole lot of worry: what if Covid makes its way here, too? Add to that, lay-offs at the yard, problems in getting foreign workers on site, new CEO coming in and the first white-collar strike in this century and you can see that the project manager had his hands full. Still, the shipyard labored on to get the "end product" ready for December launch – and, finally, succeeded.

"In my mind, this is clear success story in this industry. The pandemic was our biggest hurdle to cross and we were able to handle it," he says.

"When the ship was inspected, there was a minimal number of notes given. It was as close to perfect as you can get in this business," says Leinonen, a 20-year industry veteran.


Carnival

FOURTH LNG CRUISE SHIP

As Mardi Gras sailed off for Rotterdam, it was time for celebration – while Celebration is, coincidentally, also the name of the follow-up sister ship, already in production at the shipyard.

Looking at Mardi Gras, the biggest thing from a tech perspective is the use of LNG propulsion and the sophisticated systems which support it; with this green-and-lean package, she will be perhaps the most environmentally friendly ship to sail the North American waters.

Leinonen explains that Mardi Gras is the fourth LNG powered vessel from Turku: Viking Grace and Megastar got the ball running, and the Excellence Class vessels – Costa Smeralda and Mardi Gras – represent the new generation of LNG cruise ships.

"Even as Smeralda and Mardi Gras are both Excellence Class and utilize the same platform, so to speak, they are both also prototypes of their own right," he adds.

> **Mardi Gras has classical ship lines and predominately blue hull.**

FASTEN YOUR SEATBELTS!

Mardi Gras has classical ship lines and predominately blue hull. The ship's centerpiece is a three-stories-high atrium in the middle of the ship, opening up to a floor-to-ceiling window and movable LED screens. From the atrium, passengers are able to enjoy a close connection to the sea and enjoy the scenery.

Still, atrium is not what everybody's talking about at the time of delivery. The real "showstopper" is Bolt, an industry-first in-ship rollercoaster – and clearly something quite unheard of until now. Bolt lets the cruise patron do the driving and control the speed of the ride with a top speed of 64km/h.

However, if designing and building a rollercoaster on solid ground is demanding enough – how on earth do you pull this off on a cruise ship? – Leinonen says that the initial idea of introducing a "rollercoaster on the waves" came from Carnival.

> **"We had to make it structurally so strong that it can cope with a hurricane, even.**

"The planning phase had already started, when we were approached with this idea. We modified our designs to accommodate for the rollercoaster – which, however, posed some challenges."

BUILT TO LAST

Initially, vibrations were the main concern – how do you make sure that the rollercoaster and the ship are able to "co-exist" safely and effectively at all times? – But, having solved that problem, an even bigger problem surfaced: since the ship will be making the rounds in the Caribbean it has to be able to withstand fierce storms, and to be, in essence, hurricane-proof.

"We had to make it structurally so strong that it can cope with a hurricane, even. This proved to be surprisingly difficult, but thanks to our great team, we got it done."

And, finally, seeing the Carnival representatives go on test runs on the roller-coaster – and come back with a big smile on their face – has been memorable for the project manager as well. "It was great to see that the customer really enjoys and appreciates what we've done here."

AS BIG AS IT GETS

For Leinonen, the building of Mardi Gras was special for a personal reason too: after being the project manager on 10 smaller vessels, this was the biggest ship under his watch so far.

"After all, the biggest ship classes out there are Oasis and Excellence – and it was great to be involved in making this one."

The focus now turns to the building of the sister ship, Carnival Celebration, which will be delivered in 2022 – just in time for Carnival's 50th birthday.

"The production of Celebration is under way and we're looking forward to making something special there, too." ■

MARDI GRAS FAST FACTS

Gross tonnage: 180,000
Passengers: App. 5,200
Length: 340 m
Beam: 42 m
Decks: 19
Crew: 2,000
Staterooms: 2,600
Suites: 180

Innovative technologies needed for maritime safety

by: ARI MONONEN

photo: PEXELS

photo: UNSPLASH

Shipping can be dangerous business. International safety standards and regulations for seafarers are helpful, but new technologies are also needed to avoid disasters at sea. For one thing, the increasing use of autonomous vessels will require highly efficient technical safety systems and devices.

photos: UNSPLASH

On the global level, the International Maritime Organisation (IMO) has developed numerous regulations that are followed by all shipping nations. Many of these regulations deal with maritime safety.

The Maritime Safety Committee is IMO's senior technical body on safety-related matters. The Sub-Committee on Ship Systems and Equipment (SSE) deals with a wide range of technical and operational matters related to systems and equipment on all types of ships. They include life-saving equipment, appliances and arrangements, and fire-safety systems.

The era of automation requires an even wider range of technologies for safety and security on the seas.

INTELLIGENT AWARENESS

As the technology of autonomous ships advances, some of the ships may be crewless in the course of the next few years. Many pilot projects for autonomous vessels have already been launched.

A number of safety systems form part of the ongoing development of autonomous ships, but such technology can also be useful in the existing shipping environment.

For instance, the Intelligent awareness (IA) systems are set to become the next generation of digital technologies to improve safety the maritime sector. They will utilise sensors, high-resolution displays, and intelligent software. In part, this technology is likely to support other mar-

"Some of the ships may be crewless in the course of the next few years.

itime innovations, including the autonomous vessels of the future.

The IA system will make use of sensor technology and software to minimise the risks that navigators face in constantly changing weather conditions, darkness, or in congested waters. Through data collec-

tion and information display systems, the IA system is expected to raise the standard of navigational safety as well as operational efficiency.

By producing a 3D map of the vessel, with the aid of light detection and pulsed lasers to measure distance, an external overview of the vessel's surroundings can be made. This will help to create an accurate bird's eye view of the area surrounding the ship.

Furthermore, the IA system can supplement the navigational tools already available from the electronic chart display & information system (ECDIS) and radar.

SMART DISPLAYS AND NAVIGATION SYSTEMS

The maritime electronics manufacturer Furuno Electric and Japanese carrier line Mitsui Osaka Lines have collaboratively developed Intelligent awareness (IA) information display systems using augmented reality (AR) technology which will support vessels at sea.

Such systems can assist in the development of autonomous ship operations. They are able to provide information on the presence of other ships in the vicinity around the vessel, as well as other landmarks and obstacles to be encountered during the journey.

photos: UNSPLASH

> **"Online training solutions make the training processes easier and faster.**

Data collected from the automatic identification system (AIS) can be displayed on tablets and other devices. Some devices may be able to display images taken from the bridge of the surrounding landscape. Moreover, images will build on AR technology to provide visual views to crew to assist with the surveillance of the ships.

Furthermore, the navigation manufacturer Raytheon Anschütz and Vard Electric AS have developed the Integrated Navigation System (INS). It is a combination of navigational data and systems interconnected to enhance safe navigation of the vessel.

Managing routes and charts, the INS will also share data across the network as well as controlling central tasks and services, including data handling and distribution, system monitoring, alerts and settings. According to Raytheon, the system has been designed for smart navigation through safe and simple operation.

VIRTUAL REALITY AND TRAINING

Training programs based on Virtual Reality (VR) are already on the market. Such programs can be utilised for developing new skills for the crews of hi-tech vessels.

Continuous training is essential for maritime safety. In addition to training, effective online training methods for the maritime industry can bring benefits of substantial value both for the company and the individual seafarers. Shipping is a demanding business area, with constantly changing training needs. Therefore, online training solutions make the training processes easier and faster.

Innovative distance e-learning solutions could allow seafarers to learn while they continue with their work, in order to continue to develop and improve the specific skills they will need.

To further enhance onboard crew safety, ship operators and owners are beginning to investigate developments in wearable technology. It can be used to monitor heart rates and other health-related data of crew members in real time, to ensure the continuous health of the crew on board.

Cyber security at sea is also becoming a crucial issue as automated ships and systems are utilised more and more frequently.

Identifying threats and vulnerabilities is important for preventing cyber-attacks. Risks should be assessed and protection methods developed to neutralise cyber security risks. ■

Data for this article has been collected from: Government Europa; IMO; Raytheon Anschütz GmbH; and Safety4sea.

RMC shipyard in Rauma keeps up the shipbuilding

by: ARI MONONEN

At Rauma Marine Constructions shipyard on the west coast of Finland, shipbuilding work has been going on throughout the first year of the coronavirus pandemic. Some minor obstacles have been encountered, and some of the work processes have had to be re-configured – but the ships will be built, no matter what.

Car and passenger ferry Aurora Botnia

photo: RAUMA MARINE CONSTRUCTIONS

At the present time, the Rauma Marine Constructions shipyard concentrates on building new ships.

"We have our hands full with newbuilds, so that no major service work is currently ongoing, apart from some small-scale repairs," says Mr. Jyrki Heinimaa, President and CEO of Rauma Marine Constructions (RMC).

"Wasaline's ship 'Aurora Botnia' is scheduled to be completed at the shipyard in the spring of 2021. Of course, the ongoing problems with Covid-19 virus may still affect the timetables."

While ensuring the health and safety of the shipbuilders is of paramount importance, it has also meant numerous limitations for the work procedures at the shipyard.

> **"We have our hands full with newbuilds.**

"Various groups of shipbuilders, as well as the employees of different subcontractors, need to be kept apart from each other. Additional hygiene and face masks are required at the workplace, plus occasional quarantines for seasonal workers. All this has made it more difficult for the shipyard to take up new shipbuilding projects," Mr. Heinimaa recounts.

ECOLOGICALLY DESIGNED CAR AND PASSENGER FERRY

The 'Aurora Botnia' car and passenger ferry was floated out at Rauma shipyard in early September of 2020.

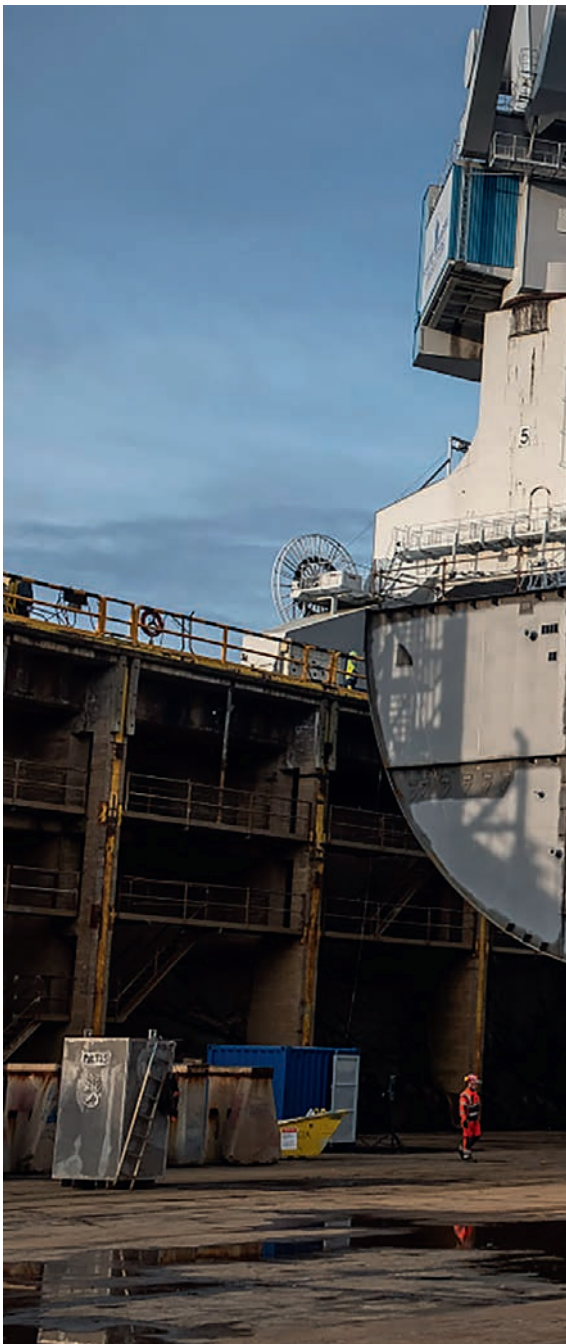
"Some minor delays have been recorded during the shipbuilding, particularly in the case of certain shipments of propulsion equipment."

photo: TALLINK GRUPP

photo: RAUMA MARINE CONSTRUCTIONS

"The 'Aurora Botnia' was floated out at Rauma shipyard in early September of 2020.

photo: TALLINK GRUPP



Since the hull of the vessel was completed, the equipment assembly and interior work has been ongoing, such as piping, insulation, ventilation and electrical installation. Furthermore, work around the engine rooms and the car deck has been continued.

The outfitting phase will be concluded with sea trials and commissioning for operation in spring 2021.

The 'Aurora Botnia' will be the first car and passenger ferry in the world with a Clean Design class notation. The four main engines of the ship will run on both liquified natural gas (LNG) and biogas. When approaching the harbour or departing, the ferry can operate utilising electrical power. Owing to these new technologies, the carbon dioxide emissions from the ferry will be quite low.

Another vessel currently being built at Rauma shipyard is Tallink's 'MyStar' shuttle ferry. Keel-laying for this ship took place on 18 September, 2020.

"This one is a big and fast ferry. At present, the hull is being assembled. The ship is expected to be launched in the summer of 2021. Delivery is scheduled for early 2022," Mr. Heinimaa notes.

When completed, the ferry will operate between Helsinki and Tallinn. For the shipyard, the shipbuilding project has provided more than 1,500 person-years of employment.

MULTI-PURPOSE CORVETTES FOR THE FINNISH NAVY

Among the shipyard's major current projects is the Finnish Navy's Squardon 2020 project, consisting of four multi-purpose corvettes.

photo: RAUMA MARINE CONSTRUCTIONS

"For this project, the main equipment procurements and the drafting of the final blueprints are now ongoing," Heinimaa says.

The most significant parts of machinery equipment in the multi-purpose corvettes are the gas turbine, the electric drive system along with the gear system that connects them to the propeller shafts, and the main diesel generators.

The electric drive system and the gear system will be supplied by the German company RENK AG.

The gas turbines for the corvettes will be supplied by General Electric. The LM2500 gas turbine is the world's most commonly used gas turbine in naval ships.

UNIQUE SOLUTIONS FOR HARSH CONDITIONS

In the building and design of the four multi-purpose Navy corvettes, there are additional important considerations of security.

> **"Another vessel currently being built at Rauma shipyard is Tallink's 'MyStar' shuttle ferry.**

"Details of materials or components cannot be discussed in teleconferences or other open communications lines," Mr. Heinimaa points out.

"Due to the coronavirus pandemic, it has also become more difficult to meet various suppliers of components in person abroad, with regard to the rapidly changing virus situations in different countries. Some phases of the work may yet have to be re-scheduled because of this."

photo: RAUMA MARINE CONSTRUCTIONS

President and CEO of Rauma Marine Constructions Jyrki Heinimaa

photo: TALLINK GRUPP

If no major delays are encountered, the actual building of the four Navy corvettes is expected to start in 2022. They will eventually replace seven older warships that are currently in service.

"These corvettes will be unique: the first corvettes in the world that are capable of operating in heavy ice conditions," Mr. Heinimaa emphasises.

After a relatively tough year of shipbuilding, he looks to the future with confidence.

"Overall, the pandemic has called for some new practices in shipbuilding, but things could have been much worse. Some shipyards abroad have had to close down altogether. Our professional and skilled shipbuilders, together with out network of responsible subcontractors, have helped to keep us afloat." ■

A bold new era of low-carbon shipping

by: ARI MONONEN

With the onset of new and stricter regulations for limiting carbon emissions of maritime vessels, the shipping companies are preparing for low-carbon seafaring. Meanwhile, new and innovative technologies for reducing CO_2 greenhouse gas emissions of ships are being constantly developed.

photo: UNSPLASH

On a global scale, ship emissions add up to approximately three percent of CO_2 greenhouse gases released to the atmosphere.

"Recently, new regulations and requirements have been drafted with regard to greenhouse gas emissions of maritime vessels," notes Mr. Olli Kaljala, Marine Chief Executive for Finland and Baltic States at Bureau Veritas.

"For one thing, European Union has published the MRV (Monitoring, Reporting and Verification) Regulation. Furthermore, International Maritime Organisation IMO has drawn up new goals for reducing CO_2 emission levels for ships."

STRICTER RULES WILL FOLLOW

The EU Commission's meaning was to create MRV to enable data collection and reporting of maritime emission data. The MRV regulation has been enforced since 2018.

"Data on ship emissions is to be reported annually and archived," specifies Kaljala.

The specific dates for annual reporting are coordinated. Once a year, a heap of reports arrives at the offices of Bureau Veritas and other classification bureaus for perusal and recording.

As things stand, the MRV regulation does not yet define the maximum level of CO_2 emission that is allowed for the ships. However, CO_2 emissions are juxtaposed with the amounts of transported goods, with the goal of improving the efficiency of maritime transports.

"Stricter regulations for emissions are to be expected in the near future. At that stage, vessels will be required to operate within permitted emission levels," Kaljala says.

"The shipping companies are preparing for low-carbon seafaring.

photo: MSC CRUISES

The data collected in accordance with MRV regulations can be helpful when practical applications for reducing maritime greenhouse gas emissions are contemplated.

The MRV regulation affects all maritime traffic to and from EU ports, regardless of the ship's flag country.

NEW SOLUTIONS AND TECHNIQUES

To minimise CO_2 emissions, ships will undoubtedly need new fuels and fuel technologies, as well as exhaust-gas cleaning devices.

"Additionally, ships may benefit from hybrid solutions, such as utilisation of wind turbines as secondary power units. A number of these types of solutions for low-carbon maritime traffic are already in use," Kaljala points out.

"IMO is set on reducing all maritime CO_2 emissions by at least 50 percent by the year 2050. This will require a wide range of different kinds of engineering feats, in the short and long term."

According to Mr. Kaljala, new technologies will be developed as new rules and regulations for low-carbon shipping keep emerging.

"Eventually, the best practices and techologies will become the standard. Some of them will be incorporated into future maritime regulations."

INNOVATIVE R&D AT UNIVERSITY OF VAASA

Various cruise lines have also started implementing Ship Energy Management Plans to reduce CO_2 emissions and to improve energy efficiency in seafaring. The plan aims at reducing carbon emissions by 30 percent by the year 2025.

On the engineering side, new technologies for low-carbon shipping are constantly being developed and tested.

A consortium led by the University of Vaasa – on the west coast of Finland – is engaged in a project to reduce shipping emissions by bringing low-carbon energy forms and various technologies to vessels, as well as developing the way vessels are designed and operated. These energy forms include hydrogen, wind power, electric batteries, heat-recovery technologies, plus air lubrication and new anti-fouling technology.

"Stricter regulations for emissions are to be expected in the near future.

The consortium is about to receive significant funding from the EU's Horizon 2020 programme for this research project called CHEK, with the stated aim of de-carbonising shipping by enabling key technology and innovative ship design.

In addition to the University of Vaasa, the participants are World Maritime University, Wärtsilä, Cargill, MSC Cruises, Lloyds Register, Silverstream Technologies, Hasytec, Deltamarin, Climeon, and BAR Technologies.

HIGH-RISING GOALS FOR LOW-CARBON SHIPS

The results of the project will eventually be field-tested on two vessels. One of them is the bulk carrier 'Cargill,' making use of wind energy by utilising a sail. Another vessel in the pilot tests is an MSC Cruises passenger ship to be equipped with a hydrogen-powered ship engine that will be designed during the project.

According to researchers, the use and symbiosis of new innovative technologies can reduce as much as 99 percent of greenhouse gas emissions, achieve energy savings of up to 50 percent, and also reduce black carbon emissions by more than 95 percent.

Such innovative technologies will not simply be stacked onto vessels. The project will also develop the Future-Proof Vessel (FPV) Design Platform for charting the design of future low-carbon and energy-efficient ships.

The new type of ship platform will provide the means to combine new technologies as favourably as possible so that they will be able to work together in the best possible way. ■

photo: MSC CRUISES

ISOVER is a great fit for cruise ships

by: SAMI J. ANTEROINEN
photos: SAINT-GOBAIN FINLAND OY

Insulation solutions in the marine industry is no small matter. For example, when a cruise ship is insulated, this can require up to 500,000 square metres of insulation, says Key Account Manager Herkko Miettinen from Saint-Gobain.

Since energy consumption related to HVAC (Heating Ventilation and Air Conditioning) systems constitutes a large part of the total fuel consumption of a ship (up to 35% for cruise ships), installing high thermal insulation in the decks, bulkheads and ducts has a significant impact on operating costs. The big industry players know this full well:

"Our ISOVER solutions are supplied to the major shipyards across the world, ranging from Meyer Turku to other key European shipyards," Miettinen says, adding that such recent releases as Viking Grace and Megastar rely heavily on ISOVER when it comes to insulation.

FIRE SAFETY FIRST!

As the world's leading insulation company, ISOVER has drawn attention to the importance of effective and sustainable insulation in Marine & Offshore. Here, effective insulation is not only needed to save energy, but also to provide fire safety, acoustical and thermal comfort.

"Fire safety upon the seas is always the starting point and the most important thing," Miettinen points out.

ISOVER's biggest hit product at the shipyards lately has been ULTIMATE mineral wool that is produced through a unique and patented fiberizing process.

"ULTIMATE is a high-performance mineral wool with excellent fire protection properties and a drastically reduced weight – up to 50% lighter – when compared to traditional stonewool solutions," explains Miettinen.

"When you utilize hundreds of thousands of square metres of insulation, it really makes a difference if you use a light product or not. With a lighter vessel, you can reduce fuel consumption significantly – thus bringing down the ship's carbon footprint," he says.

EYE ON CARBON

Carbon is reduced also during the logistics phase – as trucks make their deliveries at the yards, ULTIMATE makes for a lighter load. Also, one truck can deliver 50–75% more of ULTIMATE than traditional stonewool.

"Lightness of the product is also for the benefit of the shipyard installing teams: ULTIMATE is a joy to work with, allowing faster installation pace."

In addition, ULTIMATE products have excellent sound absorption properties.

"With ULTIMATE, there is no need anymore for high density products to achieve high performance in sound reduction," says Miettinen. ■

VARUNA SENTINELS BV IS SELECTED TO PROVIDE IHM MAINTENANCE SERVICES FOR HAPAG-LLOYD VESSELS

by: Varuna Sentinels BV

Photo: UNSPLASH

Houston, The Hague,Hamburg, New Delhi, Singapore |8February 2021 – Varuna Sentinels BV is proud to announce that it has been selected to provide IHM Maintenance Services for theHapag-LloydFleet using its "state of the art" Cloud based software(VSIMS) supported by inhouse team of Hazmat Experts. Starting from 31 December 2020, ships above 500 GT and flying the flag of an EU/EEA member state, or third-party flagged vessels calling at European ports, must carry an Inventory Hazardous Materials (IHM) certificate on board.IHM Maintenance includes maintaining of IHM by tracking on-board hazardous materials from on-boarding to off-boarding in compliance with International Maritime Organisation (IMO) guidance contained in Hong Kong Convention2009and European Union Ship Recycling Regulation (EU SRR) guidelines.TheMaintenance processalsoinvolves maritime suppliers to provide documentssuch as Material Declarations (MDs) and Suppliers Documents of Conformity (SDoCs)for select items whichhelps in keeping the IHM record updated.

ABOUT VARUNA SENTINELS BV

Varuna Sentinels BV consists of a team of young and experienced maritime professionals, experts in Fleet management, IHM and Sustainable Ship Recycling (SSR) with over 35+ years in experience across the globewith offices in The Netherlands,Singapore,and India.

Business through innovation is Varuna Sentinels' mantra. The company developsagile software keeping its client'srequirement at the heart of it. Varuna Sentinels strongly believesthat inculcating cloud computing, machine learning,and Artificial intelligence holds the key to reinvent its business processes with increased level of efficiency, sustainability andmake it future proof.

Varuna Sentinels' IHM maintenance server (VSIMS) is designed to help ship owners and managers comply with HKC 2009 and EUSRR regulations.

Varuna Sentinels'core is in staying a step ahead, using data and record collection in the simplest and most economical way possible without any disruption to the day-to-daymanagerial operations.

ABOUT HAPAG-LLOYD

With a total transport capacity of 1.7 million TEU, Hapag-Lloyd is one of the world's leading liner shipping companies. The company has around 13,200 employees and 388 offices in 129 countries. Hapag-Lloyd has a container capacity of approximately 2.7 million TEU –including one of the largest and most modern fleets of reefer containers. ■

Eurofins knows marine structures and materials

by: SAMI J. ANTEROINEN

photo: EUROFINS EXPERT SERVICES OY

Pushed by innovation and technological advances, marine industry is constantly evolving – and this is reflected by the new materials and structures that are featured on new vessels. However, as maritime requirements differ a great deal from regular construction, extensive testing is needed before new solutions are deemed seaworthy.

Eurofins Expert Services Oy has a wealth of knowledge in all testing and certification related to marine industries. Heli Välimäki from Eurofins Expert Services Oy says that fire testing, has been conducted for almost half a century in Espoo and organized seminars related to fire safety in ships.

"VTT, earlier owner of the Eurofins Expert Services Oy, was involved with developing of the previous Fire Test Code during the 90's in Espoo, Finland," she says.

Today, fire safety testing and approvals for materials and components used in ships, are a key part of the company's marine offering. Eurofins Expert Services offers testing of flame spreading properties, smoke production, non-combustibility, heat of combustion/calorific value, fire safety of curtain materials, upholstered furniture and bedding components as well as resistance to fire testing of marine constructions.

CHANGES COME SLOWLY

Regulations relating to the fire safety of ships are SOLAS-based, and the fire test procedures themselves are presented in Fire Test Procedure Code of International Maritime Organization (IMO).

"With regards to certification, things change slowly and new innovations, in form of structures and materials, take time to root," says Välimäki.

In Europe, materials and components are covered by the Marine Equipment Directive 2014/90/EU and must be affixed with Wheelmark. "We have offered wheelmark services for 20 years, since it became possible," says Välimäki.

Ville Grönvall from Eurofins is the expert who in charge of fire resistance testing of marine structures. He says that architects are keen on delivering a certain WOW effect aboard ships, and they often experiment with new types of structures to accomplish this.

"Frequently it is glass structures that add that visually striking element, and we must test them to make sure that they're safe in all regards."

3D PRINTING IS THE FUTURE?

Jere Heikkinen is a Eurofins materials expert who notes that as manufacturers come up with new materials they are naturally interested in finding marine applications for them.

"However, the fire safety requirements are so strict that not all new materials can make it," he says, adding that for instance 3D printed products still have their share of hurdles to overcome.

"For customers, it sometimes comes as a surprise how tough the marine regulations can be on materials." Still, the need for lighter, composite materials is evident on ships.

Aboard cruise ships, another factor is sound-proofing which has a lot of potential on the materials side, believes Heikkinen. ■

More information: www.eurofins.fi/expertservices/en/

Finnish Marine Industries

photo: UNSPLASH

ABB Oy
Adwatec Oy
Aker Arctic Technology Oy
Alfa Laval Aalborg Oy
Allstars Engineering Oy
ALMACO Group Oy
Antti-Teollisuus Oy
Apex-Marine Oy
AQ Trafotek Oy
Atexor Oy
Auramarine Oy
Beacon Finland Ltd Oy
Bertel O. Steen Power Solutions Finland Oy
Bluetech Finland Oy
Cadmatic Oy
Deltamarin Oy
EIE Maskin Oy
Elcoline Group Oy
Elomatic Consulting & Engineering Oy
Emmanoa Oy
Etteplan Oyj
E.U. -Adhoc Project Oy
Evac Oy
Foreship Oy
FSP Finnish Steel Painting Oy
Furuno Finland Oy
Groke Technologies Oy
Halton Marine Oy
Helkama Bica Oy
Helsinki Shipyard Oy
I.S. Mäkinen Oy
ISOVER (Saint-Gobain Finland Oy)
Insinööritoimisto Comatec Oy
Jalmare Oy
Jukova Corporation Oy
Kaefer Oy
Kavika Oy
Kemppi Oy
Koja Oy
KONE Hissit Oy
Koneteknologiakeskus Turku Oy
Kongsberg Maritime Finland Oy
Kvaerner Finland Oy
Laivasähkötyö Oy
Lamor Corporation Ab
Oy Lautex Ab
MAN Energy Solutions Sverige AB, Finland Branch
Marioff Corporation Oy
Merima Oy
Mesekon Oy
Metalliasennus Huuhka Oy
Metos Oy Ab
Meyer Turku Oy
Mobimar Oy
Napa Oy
Nora flooring systems Oy
Norsepower
Oy NIT Naval Interior Team Ltd
Oilon Oy
Onninen Oy
ORSAP Oy
Parmarine Oy
Paroc Oy Ab
Pemamek Oy
Piikkio Works Oy
Pinja Industry Oy
Pocadel Oy
Pori Offshore Constructions
Promeco Group Oy
Rauma Marine Constructions Oy
Rauman Meriteollisuuskiinteistöt Oy
Reddal Oy
R&M Ship Technologies Finland
RR Site Service Oy
Saajos Oy
S.A. Svendsen Oy
SBA Interior Oy
SeaKing Oy
Shipbuilding Completion Oy
SSAB Europe Oy
Steerprop Oy
Oy Stellio Ab
Suomenlahden Telakka Oy
TEVO Lokomo Oy
The Switch Engineering Oy / YASKAWA
Turun Korjaustelakka Oy
Uudenkaupungin Työvene Oy
Vallila Marine Oy
Valmet Oyj
VTT SenseWay Oy
Wiima Logistics Oy
Wärtsilä Oyj Abp

company directory

photo: MEYER TURKU OY

1 4 6 7

AB-MARINEL OY

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21260 Raisio
Finland
Phone +358 2 444 11
info@ab-marinel.fi
www.ab-marinel.fi

Contact Person
Tommi Niemi
Henry Lindström

Facts & Figures
Turnover: EUR 5 million
Personnel: 50
Established: 1986

Specialty Areas
- AB-Marinel Oy supplies comprehensive delivery of the electrical materials, -equipment and spare parts for all kind of ships and represents several manufacturer of the electrical control-, alarm and communication systems.
- Specialized in turn-key-deliveries for newbuilding ships, including design, installations, material and equipment.

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ABLEMANS OY

Härjänkurkuntie 46
FI-21250 Masku
Finland
Phone +358 2 439 6500
ablemans@ablemans.fi
www.ablemans.fi

Contact Person
Marko Ruostekivi
Managing Director
marko.ruostekivi@ablemans.fi

Facts & Figures
Turnover: EUR 5,0 million
Personnel: 10
Established: 1987

Specialty Areas
Steel and Aluminium structures.
Shipbuilding – Shiprepairing – Conversions – Outfitting.

1 2

ACM-TRADING LTD

Ketunleivänkuja 4
FI-21110 Naantali, Finland
Phone +358 20 799 1400
Fax +358 20 799 1409
firstname.lastname@acm-trading.fi
www.acm-trading.fi

Contact Person
Kari U. Laiho, +358 40 900 4060

Specialty Areas
Complete PUSHPIN®-ATB-Coupler System for Pusher Tug and Barge combinations. Available models 2 or 3 pin executions, with electro-pneumatic or electro-hydraulic controls with modern PLC controls. New Model! PUSHPIN®-SliderRig – Coupler enabling to be engaged during loading and discharging. Pin forces from 150 Tons up to 3 000 Tons, from River ATBs to Large Offshore ATBs, 15 systems in service. Concept design, Feasibility Studies and total installation engineering and supervision including class approvals with FEM-analysis. Electro-Hydraulic EHS Actuators for valve control and remote sounding systems with total BUSLoop systems for all kind of vessels. Cooling control systems for HT-, LT-, LO-, SW- etc. cooling circuits. Marine Pumps, Marine Butterfly valves in house already over 40 years experience.

2 6 7

AT-MARINE OY, AUTROSAFE

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01480 Vantaa, Finland
Phone +358 9 5494 2600
sales@atmarine.fi
www.atmarine.fi

Contact Person
Antti Pihlajamäki, antti.pihlajamaki@atmarine.fi
Jussi Kujanpää, jussi.kujanpaa@atmarine.fi

Specialty Areas
Services:
- Sales, maintenance, manufacturing, commissioning and planning.

Equipment:
- Navigation and communication systems.
- Machine and fire alarm systems.
- Engine room equipment, sound and light alarms, alarm panels and centers.
- Temperature and pressure sensors.
- Machine automation.
- Escape and emergency lighting including special signs for exterior and interior decks.
- LED lamps, searchlights and window wipers.
- iquid Handling Equipment.
- Special Electronic Devices.

1

ILS Ltd

Puutarhakatu 45, FI-20100 Turku
Hitsaajankatu 22, FI-00810 Helsinki
Finland
Phone +358 2 417 2200
ils@ils.fi
www.ils.fi

Contact Person
Jyrki Lehtonen
Kristian Lehtonen
Niklas Rönnberg

Specialty Areas
Design of:
- Icebreakers and ice-going ships
- Special Vessels
- Tugs
- Ferries

2 6 7

KOJA MARINE

P.O. Box 351 (Lentokentänkatu 7)
FI-33101 Tampere
Finland
Phone +358 3 282 5111
marine@koja.fi
www.koja.fi

Contact Person
Esko Nousiainen, Director
esko.nousiainen@koja.fi

Facts & Figures
Turnover: EUR 60 million
Personnel: 232
Established: 1935
Parent Company: Koja Group

Specialty Areas
- Air conditioning systems, air conditioning units.
- System design and material delivers.
- Cargo ventilation systems.
- Air Conditioning turn-key deliveries, HVAC electrical / automation systems.

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

3 9

LAIVAKONE OY

Uranuksenkuja 1 C
FI-01480 Vantaa, Finland
Posenerstr. 1 a
D-23554 Lübeck, Germany
Phone +358 20 763 1570
Fax +358 20 763 1571
laivakone@laivakone.fi
www.laivakone.fi

Contact Person
Harri Elonen

Facts & Figures
Personnel: 20
Established: 1969

Specialty Areas
Ship engine repairs and services.
In-Situ machining.

4

OY LAUTEX AB

Ojakkalantie 13
FI-03100 Nummela, Finland
Phone +358 9 224 8810
sales@lautex.com
www.lautex.com

Contact Persons
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Jukka-Pekka Tuominen, Sales Manager
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Facts & Figures
Turnover: EUR 11 million
Personnel: 60
Established: 1951
Parent Company: Teknoma Oy

Specialty Areas
Ceilings for ship accommodation and public spaces, such as metal panels, profiles, tiles and gratings in aluminium or steel. The product range includes also B-0 and B-15 fire classified ceilings, domes, beams and special ceilings. All ceiling materials are possible to coat on different materials.

2 3 6 7

MARINE DIESEL FINLAND OY

Eteläkaari 10
FI-22420 Lieto
Finland
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Fax +358 2 253 9121
marine.diesel@wihuri.fi

Contact Persons
Jukka Uitto
Mika Aaltonen

Facts & Figures
Turnover: EUR 6 million
Personnel: 48
Established: 1992

Specialty Areas
Main- and auxiliary engine repair and service. Total overhaul of all type of engines. Turbocharger service and repair. On-site machining. Fuel injector testing also for solenoid operated devices. Well-equipped workshop in Lieto. John Deere authorized service and repair, Kemel seals and bearings

3

OILON OY

P.O. Box 5
FI-15801 Lahti
Finland
Phone +358 3 857 61
Fax +358 3 857 6239
www.oilon.com

Contact Person
Jani Kurikka
jani.kurikka@oilon.com

Facts & Figures
Turnover: EUR 70 million
Personnel: 360
Established: 1961

Specialty Areas
Oil & gas burners for marine applications

4

ONNINEN OY

P.O. Box 109
FI-01301 Vantaa
Finland
Phone +358 20 485 5111
Fax +358 20 485 5500
www.onninen.fi, www.onninen.com

Contact Person
Martti Lehti, Area Sales Director
martti.lehti@onninen.com

Facts & Figures
Personnel: 3000
Established: 1913

Specialty Areas
Onninen provides comprehensive materials services to contractors, industry, public organisations and technical product retailers. Onninen is member of Kesko Group. We have 3 000 employees in our Finnish, Swedish, Norwegian, Polish, Russian and Baltic operations.

3

PARKER HANNIFIN MANUFACTURING FINLAND OY

Salmentie 260
FI-31700 Urjala As. Finland
Phone +358 20 753 2500
Mobile +358 40 740 2394
filtration.finland@parker.com
www.parker.com

Contact Person
Tarmo Mäkelä
tarmo.makela@parker.com

Facts & Figures
Personnel: 65
Established: 1964
Parent Company: Parker Hannifin

Specialty Areas
Filtration: Lubrication oil filtration, fuel oil filtration, hydraulic filtration, gas filtration. Condition Monitoring

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

4

PAROC OY AB

P.O. Box 240 (Energiakuja 3)
FI-00181 Helsinki
Finland
Phone +358 46 876 8000
technical.insulation@paroc.com
www.paroc.com

Contact Person
Tommi Siitonen
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Subsidiaries & Representatives
In 2018, Paroc joined Owens Corning.

Specialty Areas
Stone wool insulation products for fire, heat and sound insulation to shipbuilding and offshore industries

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PEDRO OY

Tehdastie 4-6
FI-15560 Nastola
Finland
Phone +358 3 873 900
Fax +358 3 873 9010
info@pedro.fi
www.pedro.fi

Contact Person
Juha Lehtonen
Managing Director
juha.lehtonen@pedro.fi

Facts & Figures
Established: 1988

Specialty Areas
PEDRO has 30 years expertise of furniture to luxury cruisers, hotels and homes. Theatre seats and sofas to cruisers AIDA, Carnival, Color Line, Costa, Hapac Lloyd, RCCL & TUI Cruises

2 9

POCADEL OY

Korpelantie 229
FI-21570 Sauvo, Finland
Phone +358 50 435 2638
pocadel@pocadel.fi
www.pocadel.fi

Contact Person
Maria Perrakoski
maria.perrakoski@pocadel.fi

Facts & Figures
Established: 1997

Specialty Areas
Light weight B15 – A60 fire rated glass doors and partitions for marine and offshore use. Product range includes hinged doors, sliding doors, extra wide tandem doors, glass walls and partitions.

2 7

PORKKA FINLAND OY

p.o. Box 127
FI-3310 Tampere, Finland
Phone +358 20 555 512
contact@porkka.com
www.porkka.com

Contact Person
Petri Hiilloste
petri.hiilloste@porkka.com

Facts & Figures
Turnover: EUR 30 million
Personnel: 170
Established: 1962
Parent Company: Festivo Finland Oy

Specialty Areas:
Provision stores. Walk-in rooms in galleys/pantries. Insulated doors. Insulated fire doors A60, for cold stores. Marine cold cabinets and counters.

1 4 5 7

RENOTECH OY

Sampsankatu 4 B
FI-20520 Turku, Finland
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rt@renotech.fi
www.renotech.fi

Contact Person
Bob Talling, +358 50 558 1806
bt@renotech.fi

Facts & Figures
Turnover: EUR 1,5 million
Personnel: 10
Established: 1994

Specialty Areas
MED Certified products, B + D. GRG decorative wall and ceiling elements, mouldings and sculpture work. DGG light-weight gypsum board. Renopur decorative surface finishes, paint effects, marbling, wood graining, gilding, paintings and art work. Stonemix textured mouldings and finishes. Renofix non-combustible glues. Fireshield acoustic and fire proofing. RenoImage silk printing and 3-D release films. Acoustic flooring and floor screeds.

2

SAAJOS OY

Puistokatu 21
08150 Lohja, Finland
www.saajos.fi
Tomi Riittiö, Sales Manager
M. +358 400 811 591

Facts & Figures
Turnover: EUR 7 million
Personnel: 30
Established: 1949

Specialty Areas
A-class fire doors, A60 and B15 sliding doors, Saajos Oy
B- and C-class fire doors, Saajos AS

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2 4 9

SBA INTERIOR LTD

Hangontie 940
10300 Karjaa, Finland
Phone +358 19 3277 1
www.sba.fi

Contact Persons
Thomas Pökelmann, Sales Manager, thomas.pokelmann@sba.fi
Johan Fagerlund, Technical Director, johan.fagerlund@sba.fi

Facts & Figures
Turnover: EUR 19 million
Personnel: 100
Established: 1985

Specialty Areas
SBA Interior is specialized in accommodation panelling and different types of beds for marine applications.
Latest development is an only 16mm B-0 class panel and a 50 mm A-60 class light weight box; wall and ceiling as well as a B-15 class Extension Screen. Digital printed panels available.
Another branch of SBA is subcontracting for metal industry.

1 2 7

SEAKING LTD

Valimotie 13b B, FI-00380 Helsinki, Finland
Phone +358 9 350 8840
Fax +358 9 3508 8422
sales@seaking.net

Contact Person
Pasi Suvanto, VP Sales, pasi.suvanto@seaking.net

Facts & Figures
Personnel: 400
Established: 1985
Parent Company: SeaKing International AG

Subsidiaries & Representatives
SeaKing France, SeaKing GmbH, SeaKing Italy, SeaKing Poland, SeaKing Inc.

Specialty Areas
Established in 1985, SeaKing is the Industry's leading provider of functional catering systems to cruise liners and other high-class passenger vessels. SeaKing supports its customers throughout the ship's life cycle with basic design, consulting, equipment deliveries, training, maintenance and upgrading of the catering systems. SeaKing has a large production facility in Poland specialised in stainless steel (including refrigerators, service counters, ventilation hoods and pre-fabricated pantries) and a second production facility in Ft. Lauderdale, aimed at responding to the Industry's growing renovation and repair activities.

7

SEASIDE INDUSTRY PARK RAUMA

Suojantie 5
FI-26100 Rauma, Finland
www.seasideindustry.com

Contact Person
Timo Luukkonen
+358 40 550 1942
timo.luukkonen@seasideindustry.com

Specialty Areas
Seaside Industry Park is the hub of the maritime cluster in Rauma. Successful principal companies in shipbuilding and marine production with wide and efficient supplier network operate in the park. The region is utilizing versatile infrastructure and comprehensive common services. Seaside offers an efficient manufacturing environment and cooperation network that also enables smaller companies to participate in major projects and achieve competitive advantages and added value.
Additional information: www.seasideindustry.com

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S.A. SVENDSEN OY

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Fax +358 9 6811 1768
www.sasvendsen.com

Contact Person
Kimmo Räisänen
Managing Director
kimmo.raisanen@sasvendsen.com

Facts & Figures
Turnover: EUR 5,7 million
Personnel: 5
Established: 1981

Specialty Areas
Complete turnkey deliveries for cruise ships and ferries. Interior materials and custom made interior modules. Refurbishments and refits for cruise ships and ferries

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TEBUL OY

Luumäentie 2
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Phone +358 50 540 6031
sales@tebul.fi
www.tebul.fi

Contact Person
Jussi Uusitalo
Managing Director
sales@tebul.fi

Specialty Areas
TEBUL OY has been designing and manufacturing watertight bulkhead sliding doors since 1961. Our self-tightening 24VDC fully electric watertight bulkhead sliding door is a fourth-generation product. The primary self-tightening is based on metal to metal contact with rubber seals for initial tightening. The higher the pressure, the larger the force exerted on the door. Tebul doors are approved to be installed into A-60 bulkheads.
Tebul doors are available also in the Eex-version, for Explosion Hazardous areas.

2 4 6 7

TELESILTA OY

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Phone +358 2 848 5500
telesilta@harjuelekter.com
www.telesilta.fi

Contact Persons
Joonas Puustelli, CEO
Jarkko Myllyniemi, Rauma Site Manager

Facts & Figures
Personnel: 30
Established: 1978
Parent Company: Harju Elekter (listed)

Specialty Areas
Marine industry electrification works.
Challenging turn-key projects for the electrical and navigation systems including design, system deliveries, project management, installation, commissioning and maintenance.
Expertise in working with every major shipyards in Finland.

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

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