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Michael Meyer
Deputy Chief Editor

A year of »Zeitenwende«

Almost exactly one year ago, we wrote here: »What a year for the shipbuilding industry!«. Well, what can we say: Today, this sentence can be repeated easily: »What a year«! Even more: What a change of times (to borrow a quote from the German Chancellor Olaf Scholz: »Zeitenwende«)

The sentence has lost none of its actuality. On the contrary, anyone who thought 2021 would have been a turning point was proven wrong in 2022.

Covid? Not yet done, but fortunately, with less dramatic effects. Green technologies? By now, an all too well-known and much-discussed topic that the entire shipping industry, and the German shipbuilding industry have to face up to – and is facing up to with no minor success, as innovative new projects with alternative forms of propulsion or ship designs prove. But politics does not stand still and pushes environmental regulation – EU taxonomy, to name just one example. Thus, shipowners will continue to rely on the know-how of the shipbuilding industry.

However, major impacts still had to be absorbed in 2022. First, the MV Werften group with sites in Wismar, Warnemünde, Stralsund and Bremerhaven, filed for insolvency because the Asian owner Genting had run into financial difficulties. This was a bitter blow for the German shipbuilding industry. A good signal, however, was how things were to continue: Unlike for the former Fosen shipyard in Emden, new owners were found for the sites, such as the German Navy or ThyssenKrupp Marine Systems.

The biggest break, however, came with the start of the Russian war against Ukraine. This was followed by sanctions and severing trade relations in many areas – but also by comprehensive political measures in Europe, including Germany: Chancellor Scholz called for a turnaround, including an – initial – €100 billion investment package for the German armed forces. The navy is likely to be affected, and new material ordered. Foreign navies are also to be modernized and expanded. So orders are beckoning for the shipyards.

First, however, the war marked a turning point. So the challenges did not diminish in 2022, yet the German shipyards continue to hold their own in the market. They continue to enjoy a very good reputation, particularly in segments where a great deal of shipbuilding know-how, engineering expertise, and innovative capability are absolutely essential. Accordingly, the order book includes naval vessels and mega-yachts or cruise ships, and special and research vessels. It is a newbuilding from the latter segment that will receive our »Ship of the Year« award: the methanol-powered »Uthörn« from the Fassmer shipyard. Read more about the newbuilding as well as the activities of the shipyards, their order books and projects on the following pages. By the way, the newly appointed maritime coordinator of the German government also gives us exclusive insights into his views and plans for working for and with the industry..

Enjoy reading!

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This is maritime made in Germany!

While the world is joining forces to accelerate global efforts to fight against climate change, also shipping has embraced that there is no alternative to climate neutrality as fast as possible.

And yet the German maritime industry is world renown for a wide range of high-end solutions, from sophisticated components and machinery to state-of-the-art turn-key systems and complex ships. Customers trust the long tradition of excellent engineering and turn to German makers and yards for their high-quality products. It is here, where innovation drives performance, where striving for nothing less than perfection is in our genes.

In the highly competitive shipping sector, the cheapest solution is sometimes preferred over the best solution. We believe, efficiency answers to both!

In a rapidly changing maritime world, efficiency will be more than ever the key success factor. Energy cost will increase as the world gradually turns away from fossil energy sources. This development will impact every corner of the economy and the full value chain.

It will establish new trades and require new business models. In shipping, not only fuel cost will rise. Input prices from raw material to processed metal, from single components to complex ship-systems are bound for a significant increase. Superior product design with optimised properties enables reliable technology at the lowest life cycle cost. This has been the stronghold of German Industry ever since.

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Dieter Janecek
Federal Government Coordinator
for the Maritime Industry

On the way to the future

At the beginning of 2023, I was appointed as the Federal Government's coordinator for the maritime industry. I look forward to providing powerful political support to this industry, which is so important for the future, in the coming years.

I am convinced that the maritime industry is a key sector for meeting the major challenges of the near future, but also for the coming decades. Both the short-term supply of secure and affordable energy and the achievement of greenhouse gas neutrality by the middle of the century can only succeed through and with the seas. This places high demands on the industry but also offers enormous opportunities. My goal is to create the political conditions to use of these opportunities and manage the transformation towards climate neutrality.

Russia's attack on Ukraine has shown in all clarity that we need to put the energy supply in Germany and Europe on a new foundation. We need alternatives to Russian gas. Liquefied natural gas is one such alternative that is quickly available. The rapid development of an LNG infrastructure and the supply of LNG that is now possible makes it clear what a central role the seas and the maritime industry play in the functioning of the German and European economies. It is good news for the industry that it is now more in the focus of public attention again and that additional economic opportunities are opening up.

Liquefied petroleum gas will be of great importance in the coming years. But as a fossil fuel, it will only be a bridge to the decarbonised era that we want to achieve in Germany by 2045. By then, we will have completely converted the energy supply to renewable energies. An important pillar of a greenhouse gas-neutral energy supply is offshore wind energy. We must significantly accelerate offshore expansion to achieve our ambitious climate policy goals. The associated construction and operation of new wind farms at sea is a great opportunity for the offshore industry. The coastal regions will distinguish themselves as energy regions and open up new potential for value creation.

The ports will also benefit from this development. Our goal is to develop the ports into energy hubs that will handle the clean energy sources of the future. We need these in large quantities to decarbonise not only the energy supply but also industry and transport by 2045. The focus here is on green hydrogen and its derivatives. But the transport of captured CO_2 also offers new possibilities while, at the same time, placing new demands on the infrastructure. In the next few years, we can anticipate all these requirements and make the ports and their connections fit for the new tasks.

The maritime industry, the offshore industry and shipbuilding, therefore, have key functions in achieving important political goals of the Federal Government. My task is to ensure that the industry receives the right framework conditions to be able to fulfil this function. It is also important to me to support the companies and industries in the upcoming decarbonisation of their sector. This refers to the decarbonisation of production processes, which in some cases requires high investments, and to developing and establishing new technologies that make the decarbonisation of shipping possible.

All these opportunities and challenges are the hallmark of an extremely exciting time in the maritime industry, and I look forward to being able to contribute to shaping the upcoming transformation on behalf of the Federal Government. ■

Shipbuilding in the wake of politics – more than ever!

New topics, new challenges – but also new opportunities, provided the right course is set in the political arena. The year 2022 brought some significant developments and cuts for the German shipbuilding industry

Like (almost) all global industries, the German shipyard sector has to work with the effects of the Russian war of aggression against Ukraine, the energy crisis, and the energy transition.

»Looking back on a year that has passed, the impression is given that it was a remarkable year, special in many respects – no wonder in our industry, which is constantly evolving and where there is never a dull moment. However, 2022 has brought us a dynamic of change that we have not experienced for a long time,« says the German Shipbuilding and Ocean Industries Association (VSM). The term that no review of the year can avoid is »Zeitenwende« (»turning point«) – already inseparably associated with Olaf Scholz's chancellorship. A whole series of fundamental, rather comfortable assumptions not only of German politics but of society as a whole no longer stood up to reality.

»The term that no review of the year in Germany can avoid is »Zeitenwende«

The German shipbuilding industry has had to adapt to rough times since the beginning of the Covid pandemic. Hardly any other industry was hit as hard as the cruise sector, which had hitherto been spoilt for success. European shipbuilding's most important civilian market segment experienced a sudden total loss. Most cruise shipping companies nevertheless managed to raise sufficient liquidity on the capital market to avoid costly cancellations of ordered ships. The shipyards and suppliers reacted to the demand by adjusting their construction programmes and looking for new market segments.

For the Genting Group, however, the lack of sales could no longer be shouldered. And so, the year 2022 was marked by a severe low blow for German shipbuilding right at the beginning: The four large shipyard locations of the MV Werften Group announced insolvency. The news came on the day of the VSM's inaugural visit to the newly appointed Maritime Coordinator of the Federal Government, Claudia Müller.

Instead of exchanging ideas for the new legislative period, the focus was now on the acute situation. »Intensive media coverage of the disaster proved helpful,

as the focus was predominantly on the importance of shipbuilding, not only regional, and the great need for political action,« said the VSM. The Minister of Economic Affairs, Robert Habeck, who also comes from the Green Party, took the same line. Unlike his predecessor, he brought a strong personal connection to the maritime industry with him to his new office.

The German Navy took over the Rostock site of the MV Werften. In future, naval ships will be repaired there. Thyssenkrupp Marine Systems is settling in Wismar. In addition, the Eppendorf company took over the MV Werften cabin production facility (also in Wismar). In future, laboratory consumables made of functional high-tech plastics will be produced there. At the former MV Werften site in Stralsund, the municipality is developing a maritime business park where companies are locating to, or some have already settled. The city took over the shipyard site after insolvency. The company Ostseestaal subsequently leased part of the area. In addition to Ostseestaal, the Norwegian Fosen Group had also signed a lease, including for the large shipbuilding hall. At almost the same time, insolvency proceedings were filed for the previous shipyard location in Emden.

New coordinator

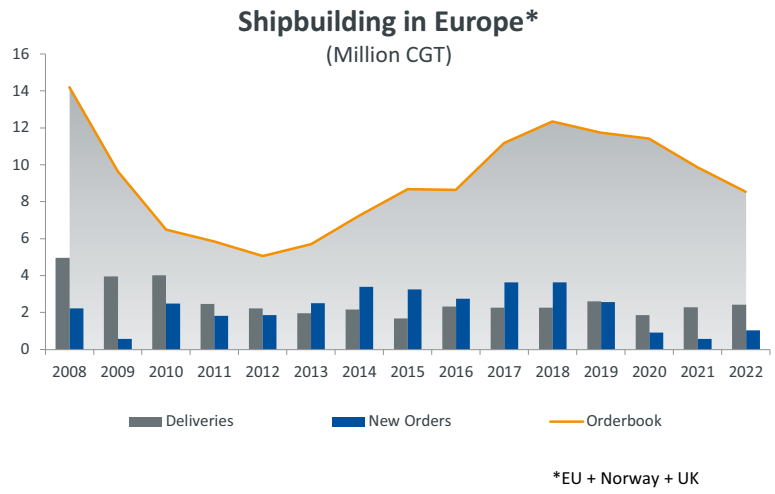
By the way: the »new« maritime coordinator is already no longer the contact person for the industry. Claudia Müller announced her move to the Ministry of Agriculture towards the end of the year. After a few days of uncertainty, her successor was announced: Dieter Janecek, a Bavarian politician who also comes from the ranks of the Greens. As economic policy spokesperson of the Bundestag parliamentary group, he explained the parliamentary group's central positions. These include a clear position on securing economic sovereignty and reducing dependencies on China.

On the occasion of the change, the VSM thanked Müller for her commitment and welcomed Janecek: »Energy imports by ship, the expansion of the offshore wind industry, the maritime energy transition, China's increasing influence on the maritime economy and, last but not least, the protection of maritime infrastructure on the seabed – the importance of the maritime economy has become the subject of more public attention than ever in the last year. It is good that the German government has swiftly filled the important post of Maritime Coordinator again.«

The maritime industry already had a very good experience with a Maritime Coordinator from Bavaria. With the Munich MP Janecek, he said, it was an excellent opportunity to once again focus strongly on the fact that the maritime industry is indeed not only at home on the coast but throughout Germany.

What a start in 2022!

Back to spring 2022: After the demise of the MV Werften Group, it was not to be long before other dire news with far more severe repercussions drew everyone's attention, and even the still rampant pandemic faded into the background. Death and devastation as a result of a criminal war of aggression returned to



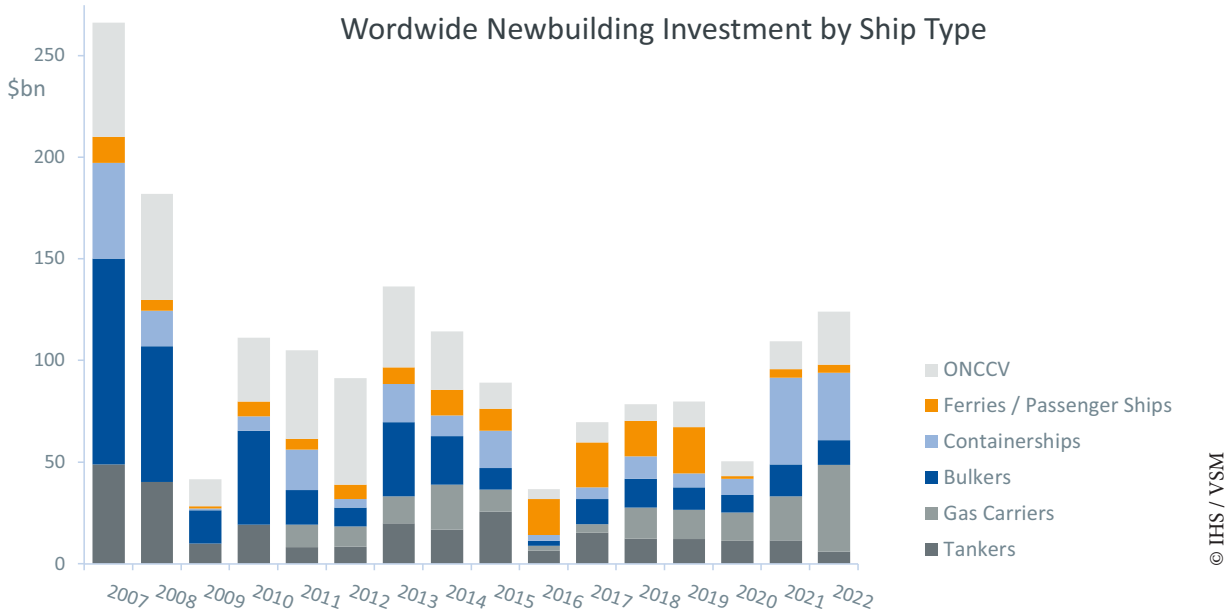
Europe. The European security architecture turned out to be a house of cards, and decades of peace dividends were a strategic misperception.

The Chancellor's government statement continues to reverberate three days after the Russian invasion. Apart from the buzzword of the year, most people probably remember the €100 billion special fund for the Bundeswehr.

Huge defence and naval expenses planned

A shock for some. A breakthrough from the point of view of others. The VSM pointed out early on that given the high cumulative savings in the defence budget of the past years, the amount at best addresses known capability gaps of the Bundeswehr, but in no way represents an upgrade. The results of the budget discussions for the coming year proved to be even more sobering. Especially from the perspective of the navy and its partners, not much has changed for the better. It is clear that the existing deficits cannot be eliminated overnight. In this respect, hope remains that the Chancellor's second promise will be fulfilled: »From now on, we will invest more than two percent of the gross domestic product in our defence every year.« In 2023, that much seems clear, Germany will probably once again fall well short of this target.

Unfortunately, the indirect effects of the war are not limited to the arms budget. The extensive sanctions had to be implemented and also affected the maritime industry in many ways. The consequences for companies in yacht building for Russian customers were particularly serious. Not only did an important clientele fall away literally overnight, but complicated and costly legal questions arose: What to do with a ship in the shipyard for which services may no longer be performed and paid for, but which is the property of third parties and must be maintained and which at the same time blocks the shipyard's facilities for other customers?



Instead, over the following months, other events achieved something that the maritime community had only inadequately succeeded in doing despite intensive efforts over many years of work: the strategic importance of the maritime industry entered the public consciousness nationwide.

Suddenly, maritime terms like LNG tanker or FSRU became part of general education. The acts of sabotage on the undersea Northstream Pipeline made it clear how much critical infrastructure can be found on the seabed, not only for energy supply but also for global communication networks. People learned that only functioning sea routes can enable the grain export from Ukraine and that the basic supply of millions of people around the world depends on it. And finally, a comparatively small transaction by the state shipping company Cosco in the port of Hamburg became a symbol for the sell-out of critical infrastructure to China. It will be interesting to see to what ex-

Suddenly, maritime terms like LNG tanker or FSRU became part of general education.

tent these important results stick and, above all, to what extent they influence political framework conditions.

»The daily dire images from the war zone will, in any case, keep security policy concerns high on the agenda. Unlike in the past, the good equipment of the Bundeswehr and increasing arms expenditure now find the support of a substantial majority of the population. As an industry that plays a significant role in optimally equipping the Navy, we welcome this development,« says the VSM. Unfortunately, the industry's important role is still not sufficiently recognised by the public. »It would be desirable,» the association continues, »if those responsible in politics but also in the armed forces made it clear in all clarity that effective armed forces are only possible with an effective domestic defence industry.«

In addition to the conflict situation with Russia, other geopolitical tensions have come into sharper focus. In the process, awareness of dependencies and what consequences can result from them has increased. The rapidly rising energy prices were not the only reason for this. Suffering experiences with supply bottlenecks for consumer goods and primary products such as microchips or raw pharmaceutical materials were made even before the outbreak of war.

»The military muscle games in the matter of Taiwan, an errant Corona policy and the ›People's Congress Theatre‹ should have made it clear to everyone that dependencies, especially on imports from China, could have fatal consequences in a flash«

Against this background, the developments in China are highly worrying from the VSM's point of view. While many economic actors are trying to maintain business as usual for as long as possible, the Chinese leadership is pursuing an ever-sharper course towards system rivalry. The proclamation of the borderless partnership with Russia, which seemed like a declaration of consent a few days before the invasion of Ukraine, marked a high point for the time being.

»The military muscle games in the matter of Taiwan, an errant Corona policy and the ›People's Congress Theatre‹ including the final synchronisation of the Politburo should have made it clear to everyone that dependencies, especially on imports from China, could have fatal consequences in a flash. The maritime industry plays a central role in all these developments,» the association continues.

The enormous state funds of over €200 billion for the expansion of the Chinese shipbuilding industry also serve military goals. It is ultimately these subsidies that have made orders as well as technology transfer from Europe so attractive. And still do: According to Clarksons Research, 95 % of newbuilding orders from German shipowners were placed in China in the first 10 months of 2022.

© ISH / VSM

A new China strategy of the German government is in the works. The European Union has also launched initial measures to quickly provide appropriate responses the next time China attacks an EU member state economically, as happened in the case of Lithuania. The USA has already given its response in the form of an Inflation Reduction Act. A coordinated joint response by the West would certainly have been more effective from the point of view of German shipbuilding. Now the EU will have to follow suit, probably with grumbling.

The EU has given the maritime industry work to do in 2022, especially in the field of climate policy. Taxonomy was the keyword that caused the most excitement among VSM members. The taxonomy is only supposed to define reporting requirements on sustainability targets for the financial sector and large companies – a huge undertaking with enormous im-

plications, as it turned out. The mere announcement of preliminary considerations of corresponding requirements with reference to the armaments sector led to the first credit institutions saying goodbye to the market. With regard to the technical criteria in the maritime sector, at least some technical mistakes could be corrected with a lot of effort in the course of the year. But the process remains laborious.

EU regulation »not optimal«

In any case, the benefits of the maritime energy transition are not apparent. On the other hand, one can expect this from some other measures. FuelEU Maritime, for example, will stimulate the demand for renewable fuels. The inclusion of shipping in emissions trading is also expected to stimulate maritime climate protection. »These and other instruments are not optimal and contain partly contradictory passages. However, climate protection and transformation are not a sprint, but a marathon. We will continue to work on improving weak points in the coming years,« says the VSM. Just as they did in the summer of 2022 with the supplier association VDMA with the presentation of the »PtX Roadmap« for the Maritime Energy Transition.

While the fuel issue is discussed everywhere in the maritime community, the topic of efficiency improvements is often neglected in the opinion of shipbuilders. Renewable fuels will remain a scarce commodity and, therefore, expensive for quite some time. Saving energy, not only in operation but above all through optimised technology, must become much more important.

New market deep sea mining?

This is also necessary because another aspect of the energy transition has yet to be discussed enough so far: the scarcity of raw materials. The demand for raw mineral materials to produce batteries, generators, electrolysers, fuel cells, etc. will rise sharply. Initial meta-studies have concluded that the currently known deposits and mining methods on land need to be more suitable to cover the demand. This result also holds true if recycling processes are maximised.

Two consequences are foreseeable for the shipbuilding industry: 1. efficiency becomes the key to success more than ever. 2. using raw material deposits below sea level will give rise to a new market. Against this background, VSM and the Deep-Sea Mining Alliance have launched a close cooperation just in time.

Habeck spread a certain spirit of optimism

The year 2022 had some drastic events in store for German shipbuilding. This gives rise to homework as well as chances. The industry is counting on support from the government – apparently with good chances. The new year was not yet old when Minister Habeck and the new coordinator Janecek spread a certain spirit of optimism at the VSM Parliamentary Evening in Berlin: The Green Minister of Economics assured the industry of support.

Record for Alternative Fuel Orders in 2022

61 % of tonnage ordered was »alternative fuelled«

35 % of ships ordered was »alternative fuelled«

>50 % of orders = LNG dual-fuel

7 % of orders = Methanol

1.1 % of orders = LPG

1.2 % of orders = Battery hybrid

10 % of orders = Ammonia ready

© Clarksons

The rapid installation of LNG terminals on the German coast, supported by all parties, has raised hopes and expectations. This is a »symbol of German ability to act« for VSM President Harald Fassmer, who would also like to see stronger support for the German maritime industry following this blueprint.

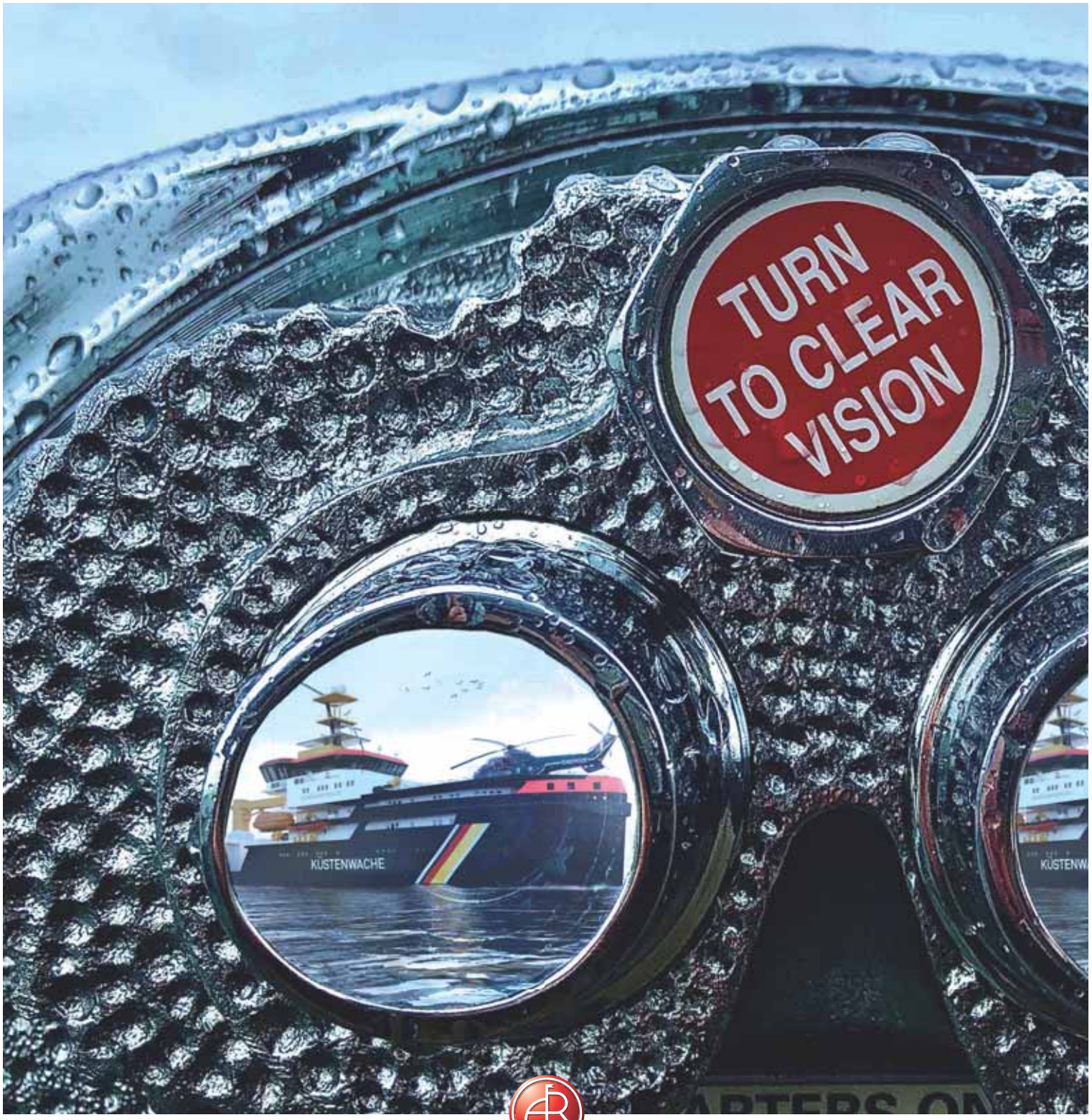
The energy turnaround, in particular, is a mammoth task. It offers many opportunities for the industry – if politicians provide reliable guidelines, the right framework conditions and, above all, orders for the domestic shipyards. Germany could play a pioneering role in the conversion to environmentally friendly technologies and ships if it received the necessary support.

The appeal reached a prominent guest that evening. And he listened: Habeck had brought a message with him: it must succeed those contracts paid for with German tax money lead to a fair share of value creation in the own country, said Habeck. »We have been taking another close look at the funding programmes from this point of view«.

He said that the state must ensure the necessary planning security, reliable targets and the right framework conditions for their implementation. This also applies to future tendering procedures. Where markets are redistributed, where there is a strategic interest in building up know-how and creating resilience, »large guarantee programmes should be set up to also secure financing,« Habeck said.

The politically desired expansion of offshore wind energy, which has only recently been laid down in an area development plan, offers such a growth market: by 2045, 70 GW of capacity is to be installed at sea, and in the whole of Europe, the figure is as high as 300 GW. According to VSM estimates, around 100 new ships of various types will be needed by 2030 for the construction and operation of the German wind farms alone. In addition, there will be transformer and converter platforms.

»It must then also be possible for the orders to go to German companies in compliance with WTO and OECD rules,« Fassmer claimed on behalf of the VSM. The example of the three LNG bunker ships that are being built at FSG in Flensburg with funding from the Ministry of Economics shows that this is possible. *MM*



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MEYER WERFT

Construction of second Silverseas ship with fuel cell started

Meyer Werft has started building the cruise ship »Silver Ray« for Silversea Cruises. Like its sister ship »Silver Nova«, which is already under construction, the ship is expected to set new standards.

With a host of innovations, the ships are to be »by far the most sustainable in their class,« according to the Papenburg shipyard. The »Silver Nova« is scheduled to enter service in August 2023, with the »Silver Ray« to follow in summer 2024.

»Like the ›Silver Nova,‹ the ›Silver Ray‹ represents a milestone on the road to climate-neutral cruising with its innovative propulsion concept and other significant technical improvements. I am sure that both ships will delight their passengers from day one,« says Jan Meyer, Managing Director of Meyer Werft.

Roberto Martinoli, president and CEO of Silversea Cruises, said, »As the second ship in our groundbreaking Nova class, Silver Ray – like her sister ship Silver Nova – will further extend our leadership in ultra-luxury cruising by introducing technological innovations that support our mission to show our guests the world, mindfully, respectfully and with unprecedented comfort.«

Thanks to an innovative fuel concept using LNG, a fuel cell system for all hotel operations, and batteries, the new ship has several measures in place to reduce emissions. According to the shipyard, the newbuilding already exceeds the IMO's highest requirement, which will only apply in the future, by 25 % in the Energy Efficiency Design Index (EEDI).

Complementing the LNG engines, the fuel cell system with a capacity of 4 MW will be the first major installation of its kind in the cruise industry to supply power to the ship and will power the entire hotel operation. This completely eliminates pollutant emissions while the ship is in port. In addition, a battery system increases the overall efficiency of the ship by absorbing peak loads, thus reducing fuel consumption. A newly developed Micro Auto Gasification System (MAGS) converts waste on board into thermal energy in the spirit of the circular economy, further increasing the ship's efficiency.

© Meyer Werft

For the first time at Silversea, Nova-class ships will feature a »horizontal layout and innovative asymmetrical design,« with public spaces and suites spanning the entire length of the ship. »As a result, guests will experience an unprecedented open layout of the ship to the water and destinations,« the shipyard states. ■

ABEKING & RASMUSSEN

Minehunter for Indonesian Navy out for sea trials

Almost exactly four years after the contract was signed, the first minehunting vessel built by Abeking & Rasmussen for Indonesia has set sail on its first sea trial in January 2023.

The future »Pulau Fani« has now set course for the North Sea from the shipyard at Unterweser. A sister ship, the »Pulau Fanildo«, is currently still in the shipyard's large shipbuilding hall. Both units had already been christened in October last year.

The order for the two 60-meter-long and 12-metre-wide minehunters is worth $ 204 million. Both units are to be handed over to the Indonesian Ministry of Defense before the end of the first half of the year. They will replace older Pulau Rengat-class mine countermeasures vessels.

The design of the newbuilds harkens back to the German Navy's Frankenthal class of twelve units built in the 1990s by Lürssen, Kröger Werft and Abeking & Rasmussen.

A minehunting boat scans the seabed with sonar in advance for suspicious objects. These are then identified either by divers or remotely operated underwater robots (ROV) and destroyed if necessary.

No details have yet been provided by the shipyard on the equipment for the two current contracts. However, it can be assumed that modern sonar equipment will be available, as well as drones for mine countermeasures. Non-magnetizable steel will be used for construction, and A&R is one of the few shipyards in the world capable of processing this special steel. A&R also used the modern 3D laser welding system developed in-house, which produces high-precision as well as particularly reliable and resilient welds.

MAN Energy Solutions is one of the important suppliers. The engine specialist supplied the complete hybrid drive package, consisting of two MAN 12V175D-MM engines with an output of 2,220 kW, a MAN Alpha CPP twin-screw propeller system with Alphatronic drive control, as well as an AKA hybrid PTI system for low-noise pure electric drive during the mine search. ■

THYSSENKRUPP MARINE SYSTEMS

Double launch of submarines for the Republic of Singapore

Two state-of-the-art submarines for the Republic of Singapore were launched in a festive ceremony at the Thyssenkrupp Marine Systems shipyard in Kiel in December 2022. Among the 350 guests invited to the event were German Chancellor Olaf Scholz, Singapore's Prime Minister Lee Hsien Loong, Minister for Defence Ng Eng Hen and other high-ranking representatives of Germany and Singapore. Lady Sponsor of both vessels was Ho Ching, wife of the Prime Minister. At the push of a button, she launched both boats simultaneously, giving them the sonorous names »Impeccable« and »Illustrious«.

The »Impeccable« and the »Illustrious« are the second and third boats in a series of four Type 218SG submarines ordered by the Republic of Singapore Navy. They are among the most modern diesel-electric submarines in the world and feature numerous customized solutions and new technologies. They are designed with a low acoustic signature. The external air-independent propulsion system allows the boats to remain under water for a longer duration. With a length of approximately 70 meters and a displacement of around 2,000 tons, they are currently the largest submarines ever built at Marine Systems. Once further intensive trials have been conducted, the »Impeccable« and the »Illustrious« will be handed over from 2023 onwards. Following the double naming ceremony, Thyssenkrupp Marine Systems and Singapore-based ST Engineering signed a teaming agreement. It formalizes and strengthens the long-term cooperation between the two companies. The agreement covers both warranty services as well as in-service support for the four Invincible-class submarines, ensuring that they are well maintained in Singapore during their operational lifetimes. ■

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NOBISKRUG

New superyacht contract signed after takeover

© Nobiskrug

As the first newbuilding project after the takeover of Nobiskrug by FSG, the shipyard has signed a newbuilding contract in September 2022 for project 799: a 83-meter superyacht with six decks. Nobiskrug managing director Philipp Maracke closed the deal with global superyacht broker Burgess and Harrison Eidsgaard Design. Both the »exceptional exterior design and stylish interior« are by London-based Harrison Eidsgaard Studio.

The 83-meter yacht project »Orkan« (»hurricane«) will be »individually tailored to the owner's high expectations of a relaxed life on the water,« the shipyard says in a statement. The vessel will also include a helipad. Spacious outdoor living areas, including an expansive beach club, will flow seamlessly into the yacht's interior.

Project »Orkan« is said to feature a hybrid propulsion system with batteries that significantly reduces fuel consumption, as well as an electronic anchoring system designed to protect sensitive underwater areas. As the naval architect, Nobiskrug is responsible for all engineering across all disciplines. ■

ABEKING & RASMUSSEN

Record breaking yacht launched

Abeking & Rasmussen has launched its largest vessel built to date in the shipyard's more than 115-year history. Sales Director Till von Krause is also thrilled when he sees the black beauty standing on the pontoon. »This yacht impresses with its iconic and clear design. Furthermore, the experts from Joseph Dirand Architecture in Paris, who were responsible for the exterior and interior design, have come up with numerous details.« For example, on starboard side there is a Neptune lounge with a 3.40m x 1.30m underwater window that provides a unique view into the world below sea level. In order not to interrupt the sleek, elegant black silhouette of the hull, the exterior design has deliberately avoided anchor pockets; instead, the yacht features underwater anchors on the keel of the yacht. »A perfect observation experience can be enjoyed from the crow's nest at the foot of the mast. Another unique place on board is the large marble-clad fireplace with a generous round sofa on the forward sundeck,« says von Krause. A special challenge was the construction of the large 16-meter hatch for the tender garage on port side, behind which a large day boat is located. In addition, the yacht with the eye-catching black hull features a fully certified helicopter pad on sky deck. The North American owner chose Cornelsen & Partner based in Germany to execute the project management and owners representation on his behalf. ■

© Abeking & Rasmussen

FASSMER

Research vessels for German Navy under construction

Keels for two new boats for the German Navy have been laid in Kleipeda, Lithuania. The contractor for the project is Fassmer. The two SVK (sea trial coast) will cost a combined € 95 million. They are to replace the Class 745 multipurpose boats »Breitgrund« and »Mittelgrund«, which date from the 1980s, and the more than 50-year-old barrage test boat »Wilhelm Pullwer«.

The order went to Fassmer, but the hulls are being built at Western Baltija Shipbuilding. This will be followed by the transfer to Berne on the Weser. Completion and handover of the first boat is scheduled for June 2023. The second boat will follow in November 2023.

The boats were designed according to civilian standards, but take into account the special requirements of defence research and testing, the Navy now announced. For this purpose, the 50 metre long and 11 metre wide units will be equipped with, among other things, a crane and a stern gallows. They will each have two rudder propellers that can rotate 360 degrees and two bow thrusters. Two 20-foot containers can be placed on the main deck at the stern. These are used to hold the equipment, which varies depending on the mission and the purpose of the trials. This allows a simple, flexible and individual configuration of the required capabilities.

The new boats will be deployed primarily in the North Sea and Baltic Sea, e.g. to secure and recover torpedoes during trials. They will also support the deployment of autonomous underwater vehicles as well as divers. ■

© Fassmer

MEYER WERFT

New life for cruise vessel »Global Dream«

After months of negotiations, a buyer has been found for the unfinished cruise ship »Global Dream«. The Disney Group took over the »Global Dream« from the insolvency estate of MV Werften. This means that the scrapping of the ship, which is about 75 % complete and has cost $ 1 bn so far, has been averted.

Meyer Werft, which has already built three ships for Disney and has two more on its order book, will rebuild and complete the »Global Dream« (208,000 GT) at the shipyard in Wismar for the U.S. market. According to the Disney announcement, among other things, the engine system will be converted for the future use of green methanol as fuel. Adjustments will also be made in the passenger area. The casino, planned by Genting for Asian clientele, will be dismantled, and the facility will be designed with American tastes in mind. Capacity will drop from a maximum of 9,000 to 6,00 guests plus about 2,300 crew members. And of course the ship, which will have the hull painting typical of Disney, will also get a new name. In Wismar, around 900 former MV staff are employed in a transfer company. Some of them will be deployed by Meyer Werft for the project, it is said. From 2025, the ship is to be put into service and deployed outside the U.S.. The shipping company, which also operates vessels in Europe and the South Pacific, had only recently announced plans to attract guests in Australia and New Zealand for the first time from late 2023.

The parties have agreed not to disclose the purchase price. The amount of the conversion costs has also not yet been quantified. Disney Cruise Line only let it be known that it had received the ship »at a favorable price and within the investment costs stated in its most recent profit announcement.« The state of Mecklenburg-Vorpommern, which had granted guarantees to the previous owner Genting Hong Kong, will probably have to plan for € 260 million in losses.

FLENSBURGER SCHIFFBAU-GESELLSCHAFT

FSG to build LNG bunkering vessels

© Titan

The German Federal Ministry of Economics is providing a total of € 62 million in funding for the construction of three bunker ships at the Flensburg shipyard FSG. Federal Minister Robert Habeck handed over the corresponding grant notices to Nordic Hamburg this morning. The Hamburg-based shipping company developed the design for the bunker ships in close cooperation with LNG supplier Titan Clean Fuels. Project coordinator was the managing director of Wessels Marine, Christian Hoepfner.

»I am pleased that, thanks to the efforts of all those involved in the project, it has been possible to realize the funding of three new innovative bunker ships this year," Habeck said at the meeting in Flensburg. The maritime energy transition and the associated switch to alternative fuels in shipping are a huge task, Habeck said. This requires investments in the expansion of the infrastructure.

Flensburger Schiffbau-Gesellschaft (FSG) is to build the three bunker ships – but Nordic has not yet officially awarded the contract. „Construction in Flensburg is an important contribution to strengthening Germany as a shipbuilding location,« Habeck said. A significant part of the value creation will then be provided by the German maritime industry, he added.

»I see this project as a key building block in the decarbonization of shipping. With this project, FSG is demonstrating its outstanding expertise in the field of alternative fuels and innovative ship concepts,« said Philipp Maracke, managing director of FSG-Nobiskrug Holding. The units, each 110 m long, will have a tank capacity of 4,500 m^3. Initially, they are to ensure bunker supply with LNG in German and European ports; in the future, after conversion, they will also be able to refuel seagoing vessels with ammonia or methanol.

Thanks to their dimensions and facilities, the ships can also be used in relatively shallow waters and for refueling cruise ships. The intended area of operation is the North Sea and Baltic Sea, but the LNG refueling ships can also be used in all other European coastal regions.

»The vessels set new standards for sustainability and operational efficiency for the refueling of ocean-going vessels with LNG and possible other future fuel alternatives,« said Richard Grube, managing partner at Nordic Hamburg Shipmanagement.

The basis for the federal government's grant notification is the funding program for the construction of refueling vessels for LNG and sustainable renewable fuel alternatives in shipping (Refueling Vessel Directive). The new bunkering infrastructure will initially be used to make fossil LNG, bio-LNG and, in the further course of development, synthetic SNG and CO_2-neutral fuels available to ocean-going vessels. ■

GERMAN NAVAL YARDS

New corvette design presented

© German Naval Yards

German Naval Yards from Kiel has presented its its new corvette design for the first time at SMM 2022. The design was created in close cooperation with the team from sister shipyard CMN Naval. Compared to the naval vessels already built, it is a completely new development, GNYN announced. The »Seaguard 96« is an innovative high-end corvette capable of performing the full range of naval operations, it said. It is equipped with the latest generation of operational systems, including a 3D radar and a full range of weapon systems and sensors for air and sea target defense that can be customized.

The hull form was developed from proven CMN Naval Group design lines with an innovative slim bow to improve seaworthiness and efficiency. The superstructure features a modular stealth design, an integrated main mast and a helicopter platform with hangar. The »Seaguard 96« corvette is 96 m long and has a beam of 13.5 m with a displacement of approximately 2000 tons and accommodations for 60 personnel. The propulsion and power generation system is based on two main diesel engines and CPP propellers, as well as four diesel generators, allowing a maximum speed of 28 kn and a range of over 4,000 nm. ■

TAMSEN MARITIM

STS boats for the German Navy

Tamsen Maritim from Rostock has been a partner of the German Navy for many years. Smaller and medium-sized naval vessels are regularly maintained and repaired at the shipyard. At the end of 2021, it succeeded in winning a newbuilding order from the navy for the first time.

Tamsen Maritim had specially designed a 20-metre-long STS boat (securing, transport, towing) of the 744 class for the Wehrtechnische Dienststelle 71 in Eckernförde. Two of these workboats are currently being built at the SET shipyard in Tangermünde, Saxony-Anhalt, in a cooperation based on the division of labour.

© SET Tangermünde

The keels of the newbuildings were laid in 2022 and they will be delivered to the Navy in 2023. The 5.5-metre-wide STS boats with a draught of 1.5 metres can reach a speed of ten knots. They are each equipped with an on-board crane and will be used in the future to set buoys, recover torpedos and deploy divers, among other things. ■

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FLENSBURGER
SCHIFFBAU-GESELLSCHAFT

www.fsg-ship.de

THYSSENKRUPP MARINE SYSTEMS

Egyptian Navy accepts first frigate from TKMS

ThyssenKrupp Marine Systems handed over the first-of-class MEKO A-200 EN to the Navy of the Arab Republic of Egypt in 2022. A total of four ships were ordered, with the first three units produced in Germany and the fourth vessel built by Alexandria Shipyard in Egypt. At a ceremony in Bremerhaven, the frigate »Al-Aziz« was accepted by the Egyptian Navy after only 38 months of the contract becoming effective.

Besides the handover ceremony, the celebrations included the naming of a second MEKO A-200 EN frigate for the Egyptian Navy. The Chief of Staff of the Egyptian Navy, Vice Admiral Ashraf Ibrahim Atwa, named the warship »Al-Qadeer«.

Vice Admiral Ashraf Ibrahim Atwa: »I am grateful to the friendly Republic of Germany for the constructive relationship which sets the example to be followed by others. Germany always supports Egypt with the up-to-date technology needed to enhance our naval capabilities. We have a longstanding and successful history of cooperation, as reflected in the highly efficient 209 submarines. Our cooperation was not limited to only building new ships, but was also extended to cover advanced training for our crews to absorb the new advanced technology.«

After short but intensive negotiations that started in May 2018, the contract for the four frigates was signed in September 2018, with the project work formally starting in August 2019. First steel cutting was already in September 2019 and the launching of the first-of-class took place in April 2021. In July 2021 »Al-Aziz« was named, and then finally today she was handed over.

© TKMS

Oliver Burkhard, CEO of thyssenkrupp Marine Systems: »This record timeline was possible only because the Egyptian Navy and thyssenkrupp Marine Systems have such a long and trustful partnership. The strategic programme is based on an open and collaborative dialogue with our customer and we are thankful for their tireless efforts in contributing to the success of this project.«

In its class, the MEKO A-200 EN is one of the most powerful warships in service today, the shipyard states. The four ships ordered by the Arab Republic of Egypt are identical in construction. »Al-Aziz« will start her journey to her homeport in Alexandria in a few days. ■

LÜRSSEN

Project 1601 and megayacht »Luminance« unveiled


© Lürssen

In February 2023, Lürssen Yachts launched Project 1601, a 90-meter displacement Motor Yacht. The exterior design is by Monaco based studio Espen Oeino International, while the Interior design was created by Dölker & Voges Design from Hamburg. Owners team project management is by Cornelsen & Partner. 1601 will undergo sea trials in the coming months and is expected to be delivered in the spring.

Also in February, Lürssen unveiled project Luminance (a 130m plus yacht). The yacht is currently scheduled to be tested and completed in 2023. The yacht's design also comes from Espen Øino. »Luminance« will now continue to be fitted out at the pier during the next few months. Above all, final work on the wooden outer deck but also on the cladding is still to be done. Delivery will probably not take place until the end of the year. ■

FERUS SMIT

Erik Thun oders two four-vessel series

© Ferus Smit

The Erik Thun shipping company and the Dutch-German shipyard group Ferus Smit are continuing their long-standing cooperation. The latest project is two newbuilding series for the MPP segment.

Erik Thun has already received 40 ships from Ferus Smit. The shipbuilding company has sites in Westerbroek and Leer in East Frisia. In the past, newbuilding work was often divided between the two locations – depending on the workload.

The Swedes have been working on fleet modernisation for some time, both in the dry and tanker business. 2022 marked the 10th anniversary of Thun Tankers, and this year the holding company Erik Thun AB celebrates its 85th anniversary. The company believes it has a »bright future« ahead of it, it says, referring to its newbuilding activities.

The contracts now signed are for four 5,100 tdw ice class 1B multipurpose vessels, the next generation of »Troll Max« freighters suitable for use in the Trollhätte Canal and on Lake Vänern in Sweden.

In addition, four coastal tankers with a deadweight tonnage of 7,999 t were ordered for Thun Tankers. They are to complement the two R-class tankers ordered previously. All eight newbuildings are part of our fleet renewal programme and are scheduled for delivery from October 2024.

»We have a long tradition of building, owning and operating tankers and MPP vessels of various sizes and trading ranges, always with a high focus on resource efficiency while focusing on our customers' needs,« said Henrik Källsson, deputy managing director at Erik Thun. ■

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
Abeking & Rasmussen Schiffs- und Yachtwerft, Lemwerder | www.abeking.com												
6507	Yacht					118.20						2023
6508	Mine Hunting Vessel		Republic of Indonesia			62.00						2023
6509	Mine Hunting Vessel		Republic of Indonesia			62.00						2023
6510	Multipurpose Vessel		Federal Waterways and Shipping Administration Germany (WSV)			104.60						2024
6511	Multipurpose Vessel		Federal Waterways and Shipping Administration Germany (WSV)			104.60						2025
6512	Multipurpose Vessel		Federal Waterways and Shipping Administration Germany (WSV)			104.60						2025
6515	Offshore Research Vessel					105.00						2025
6514	Yacht				5,000	120.00						2025
Schiffswerft Hermann Barthel GmbH, Derben | E-Mail: info@barthel-werft.de | www.barthel-werft.de												
	Work Boat		WSA* Spree-Oder									
	Survey Vessel		WSA Regensburg									
	Catamaran					20.00				electric		
* WSA = Waterways and Shipping Authority												
Schiffswerft Bolle GmbH, Derben | E-Mail: info@bolle.de | www.schiffswerft-bolle.de												
222	Pram	OP 4339	WSA Duisburg-Meiderich			26.00	5.91					09/2022
242	Pram	DP 4343	WSA Elbe			20.00	5.00	1.00				10/2022
239	Work Catamaran	James Hobrecht	Senat Berlin			14.00	4.35		2 x 35	Inline Thruster, electric		10/2022
238	Work Boat	E-Spatz	Federal Waterways and Shipping Administration Germany (WSV)			16.00	4.50	1.10	2 x 85	electric		2023
240	Ice Breaking Vessel	Altenrheine							154	RP		Q2/2023
241	Ice Breaking Vessel	Crange							154	RP		Q2/2023
243	Passenger Vessel	Anna Carolina	Prague Boats			32.00	9.60		2 x 75	Inline Thruster; electric		05/2023
244	Work Boat	Gieselwerder	WSA Weser			25.90	8.90	0.95	2 x 195	Navigator / RP		2024
245	Work Boat	Celle	WSA Weser			25.90	8.90	0.95	2 x 195	Navigator / RP		2024
Erlenbacher Schiffswerft Maschinen und Stahlbau GmbH | E-Mail: Info@Erlenbacher-Schiffswerft.com | www.die-schiffswerft.com												
no current orders												
Fr. Fassmer GmbH & Co. KG. Berne/Motzen | www.fassmer.de												
8090	Multipurpose Vessel*	MPV70	Astinave E.P.		1,850	80.60	13.00	3.90				2022
1980	Research vessel	Uthörn	Alfred-Wegener-Institut			36.00	9.00	2.20	2 x 200	methanol	10.00	2022
8400	Patrol Vessel		German Federal Police			86.00	13.40	6.60	2 x 4,080	2 x Wärtsilä 12V26 +2 x 600 kw electric	21.00	2023
8010	Multi Purpose Vessel		German Navy			50.00	11.00		2 x 770	diesel-electric	14.00	2023
8020	Multi Purpose Vessel		German Navy			50.00	11.00		2 x 770	diesel-electric	14.00	2023
8050	Multi Purpose Vessel		German Customs			65.00			5.968	LNG	23.20	2024
8160	Research Vessel**	Meteor IV	German Federal Ministry of Education and Research (BMBF) + Federal Waterways Engineering and Research Institute (BAW)		10,000	125.00			6.800	diesel-electric		2026
* Material package ** in cooperation with Meyer Werft												

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
Ferus Smit Leer GmbH, Leer | www.ferus-smit.nl												
462	Tanker*	Thun Britain	Erik Thun Group		4,250	79.90	15.00	5.50	1,950			Q3/2022
	Dry Cargo Vessel*	Nordic Crystal	Erik Thun Group	6,380		99.00	13.35	7.00	1,950			04/2022
460	Multipurpose Vessel*	Symphony Atlantic	Symphony Shipping		12,500	114.00	18.00		3,300			11/2023
461	Multipurpose Vessel*	Symphony Arctic	Symphony Shipping		12,500		180.0		3,300			2023
* in cooperation with Westerbroek site												
Schiffswerft Fischer | schiffswerft-fischer@t-online.de | www.schiffswerft-fischer.de												
	Deck Pram		WSV	100		26.00	5.10					Q1/2022
FSG Nobiskrug Holding GmbH												
Flensburger Schiffbau-Gesellschaft mbH & Co. KG. | www.fsg-ship.de												
782	RoRo Vessel*	Tennor Ocean	IVP Ship Invest	32,770	11,820	209.79	26.00	6.80	2 x 9,600	2 x MAN 8L48/60CR	21.30	2023
784	RoRo Vessel		SeaRoad PTY Ltd	12,183	43,100	210.00	29,30	6,35	2 x 10,300	2 x 9L46DF	22.50	2024
	3 x LNG Bunker Vessels**		Nordic Hamburg Shipmanagement**			110.00						
* option for a second vessel ** final order tbc												
Nobiskrug GmbH | www.nobiskrug.com												
793	Motor Yacht	Black Shark		Reg Part A	2,080	77.10	12.75					2023
795	Motor Yacht	Miza		Reg Part A	<2,000	70.00						2023
798	Motor Yacht	Bullseye		Reg Part A	>2,000	80.00						
799	Motor Yacht	Orkan		Reg Part A	>2,000	83.00						
Fosen Yard Emden* | www.nordseewerke.com												
	Half-Ring for Salmon Farm		Norway Royal Salmon									2022
* closed due to insolvency												
German Naval Yards GmbH, Kiel | www.germannaval.com												
	Conversion Salvage Tugs	Abeille Normandie	Les Abeilles	3,978		91.00	22.00		20,800			2022
	Conversion Salvage Tugs	Abeille Méditerra-née	Les Abeilles	3,978		91.00	22.00		20,800			2022
	Corvette K130*	F268 Augsburg	German Navy		1,840	89.00	13.00	4,20				06/22
	iMERZ (integrated Save & Rescue Center hospital) for EGV	Frankfurt am Main										2022
	Corvette K130*	Lübeck	German Navy		1,840	89.00	13.00	4,20				2023
	5 x Corvette K130**		German Navy			89.00						2002-24
	4 x Frigate F126***		German Navy			166.00						2025-tbc
* in cooperation with NVL **in cooperation with NVL and TKMS ***in cooperation with B+V / NVL												

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
Hitzler Werft GmbH, Lauenburg | E-Mail: info@hitzler-werft.de | www.hitzler-werft.de												
834	Levelling Vessel	Chicago	Flotte Hamburg			22.00	8.00	2,10	2 x 500	2 x Cat 18 C	19.00	09/2022
835	Pilot Boat		Wallaby Boats	12		18.00	8.00	2,70	2 x 515	Volvo	25.00	2023
836	Crew Transfer Vessel		Wallaby Boats	12		18.00	8.00	2,70	2 x 515	Diesel	25.00	2024
837	Research Vessel	Coriolis	Helmholtz-Zentrum Hereon	12	<240	29.00	8.00	1,50	2 x 400	diesel-electric + fuel cell	12.00	2024
Kötter Werft GmbH | E-Mail: info@koetter-werft.de | www.koetter-werft.de												
no current orders												
Lloyd Werft Bremerhaven GmbH owend by Rönner-Zech-Gruppe | www.lloydwerft.com												
no current orders												
Lübecker Yacht Trave Schiff GmbH | E-Mail: info@luebeckyacht.de | www.luebeckyacht.de												
258	Pontoon		private			13.50	4.50					2022
259	Pontoon		private			13.50	4.50					2022
Fr. Lürssen Group | www.luerssen.com												
Blohm + Voss Shipyards. Hamburg | www.blohmvoss.com												
ARGE	Frigate F 125*	F 225 Rheinland-Pfalz	German Navy			149.50	18.80	5.00	31,600	MTU 20V4000 + MTU GE LM 2500 (29,000 kW)	26.00	07/2022
* in cooperation with TKMS and German Naval Yards												
Fr. Lürssen Werft GmbH & Co. KG. Bremen-Vegesack												
	Yacht	Blue			15,320	160.00	21.00			2 x diesel-electric		07/2022
	Expedition Yacht	Icecap			6,500	107.00	17.50		4.50	3 x Wärtsilä engines		2023
	Yacht	Jag				122.00	17.80	4.80				2023
	Yacht	Luminance				145.00	20.00					2023
	Yacht**	Opera			11,999	146.00	20.00					2023
	Yacht*	Cap d'Ail				62.00				diesel		2024
	Yacht	JassJ				103.00						2025
	5 x Corvette K130***		German Navy									2022-25
	Multipurpose Vessel****		Bulgarian Navy									2025
	Multipurpose Vessel****		Bulgarian Navy									2026
* former Project 794 at Nobiskrug | ** replacement for the burned »Sassi« | *** in cooperation with TKMS and German Naval Yards | **** to be built at MTG Dolphin in Varna, Bulgaria												
Lürssen-Kröger Werft GmbH & Co. KG. Schacht-Audorf												
	Yacht	Project 1601				90.00	14.70					2023
	Yacht	Kali			4,850	110.00						2023
Peene-Werft, Wolgast												
No current orders known												

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
Lux-Werft und Schiffahrt GmbH | E-Mail: info@lux-werft.de | www.lux-werft.de												
226	Passenger Vessel	Möwe	Municipal Utilities Haltern	270		36.25	7.54	1.00	182	electric		07/22
227	Passenger Vessel	NN	Rainer Abicht Elbreederei GmbH	250		41.00	7.60	1.05	326	diesel		Spring 2023
228	Passenger Vessel	NN	Rainer Abicht Elbreederei GmbH	250		41.00	7.60	1.05	326	diesel		Spring 2023
Werftgruppe Meyer | www.meyerwerft.de												
Meyer Werft, Papenburg												
705	Cruise Vessel	Disney Wish	Disney Cruise Line	2,500	144,256	341.10	39.00	8.60		LNG		06/2022
716	Cruise Vessel	Arvia	Carnival Cruise Line	5,200	185,581	344.08	42.00	8.80	61,760	LNG	21.50	12/2022
719	Cruise Vessel	Silver Nova	Silversea	728	54,700	243,60	29.60	6.85	25,440	LNG	18.70	2023
717	Cruise Vessel	Carnival Jubilee	Carnival Cruise Line	5,300	182,800	345.45	42.00	8.80	61,760	LNG	17.00	2023
718	Cruise Vessel	Disney Treasure	Disney Cruise Line	2,500	143,660	340.90	39.00	8.60		LNG		2024
720	Cruise Vessel	Silver Ray	Silversea	728	54,700	244.50	29.60	6.60	25,440	LNG	18.70	2024
706	Cruise Vessel		Disney Cruise Line	2,500	140,000	340.00	39.00	8.30		LNG		2025
721	Cruise Vessel	Asuka III	NYK Cruises	744	52,200	230.20	29.80	7.00	27,840	LNG	18.50	2025
	Apartment Vessel*	MY Njord	Ocean Residences		84,800	289.30	33.50			LNG	21.00	2025
	Cruise Vessel**	Global Dream	Disney Cruise Line									
* LOI signed **the construction was carried out at MV Werften. It is now being converted by Meyer Wismar												
Neptun Werft GmbH & Co. KG | www.neptunwerft.de												
726	Research Vessel*	Meteor IV	German Federal Ministry of Education and Research (BMBF) + Federal Waterways Engineering and Research Institute (BAW)		10,000	125.00			ca. 6,800	diesel electric		2024
573	Fuel Supply Tanker		German Federal Ministry of Defence	20,000		170.00	24.00	9.50			18.00	2026
574	Fuel Supply Tanker		German Federal Ministry of Defence			170.00	24.00	9.50			18.00	2027
* in cooperation with Fassmer Werft												
Meyer Turku Shipyard Oy | www.meyerturku.com												
	Cruise Vessel	Carnival Celebration	Carnival Cruise Line	5,374	182,8000	344.00				LNG		11/2022
1400	Cruise Vessel	Icon of the Seas	Royal Caribean International		250,000							2023
1404	Cruise Vessel	Mein Schiff 7	TUI Cruises	2,900	111,500	315.70	35.80	7.90	48,0000	4 x Wärtsilä		2024

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
1401	Cruise Vessel	tba	Royal Caribean International		250,000							2025
1402	Cruise Vessel	tba	Royal Caribean International		250,000							2026
1406	Offshore Patrol Vessel	tba	Finnish Government									2025
1407	Offshore Patrol Vessel	tba	Finnish Government									2026
MV Werften: Rostock-Warnemünde GmbH*, MV Werften Wismar GmbH, MV Werften Stralsund GmbH*** | www.mv-werften.com**												
MV Werften have been closed due to insolvency * has been taken over by the German Navy and is now a naval arsenal ** has been taken over by Thyssenkrupp Marine Systems *** the city of Stralsund had bought the shipyard and is developing a maritime business park. Fosen Yard and Ostseestaal, for example, have rented space there.												
125	Cruise Vessel*	Global Dream	Dream Cruises	6.000	208.000	340.00	45.00	9.20	96,000	MAN		2025
126	Cruise Vessel**	Global Two	Dream Cruises	6.000	208.000	340.00	45.00	9.20	96,000	MAN		
* will be completed by Meyer Wismar, a Meyer Group company **the hull already started was scrapped and sold												
Neckar Bootsbau Ebert GmbH | E-Mail: info@nebo.de | www.nebo.de												
2020	Fire Fighting Boat	HLB Bingen	Ministry of Interior Rheinland-Pfalz			15.00	5.10	0.80	2 x 588	2 x MAN D2676LE423	21.60	11/2022
2090	Police Boat	SPB 6	Police Baden-Württemberg			17.40	4.10	1.00	2 x 412	2 x MAN D2676 LE432		Q1/2022
	Police Boat	WSP 1	Police Rheinland-Pfalz									05/2022
2100	Fire Fighting Boat		City of Lübeck			19.60	6.40	0.80	2 x 588	2 x Volvo Penta, Typ D13–800 IMO III	21.60	2023
	Fire Fighting Boat	Chiemsee	County of Traunstein	10.00		13.00	13.75		2 x 242	FPT N60-400	25.00	2023
Neue Oderwerft GmbH | E-Mail: e.ruchatz@neue-oderwerft.de | www.neue-oderwerft.de												
No current orders known												
Neue Ruhrorter Schiffswerft GmbH | E-Mail: info@nrsw.de | www.nrsw.de												
868	Push Lighter	Veerhaven 114	ThyssenKrupp Veerhaven			70.50	11.48					Q1/2022
869	Push Lighter	Veerhaven 115	ThyssenKrupp Veerhaven			70.50	11.48					Q1/2022
Ostseestaal (Ampereship) GmbH & Co. KG | E-Mail: ingo.schillinger@ampereship.com | www.ostseestaal.com / www.ampereship.com												
13			Zürichsee-Schifffahrts-gesellschaft	61		22.50	3.80	0.85	2 x 50	electric	16.00	06/2022
14	Passenger Vessel		Zürichsee-Schifffahrts-gesellschaft	61		22.50	3.80	0.85	2 x 50	electric	16.00	2023
15	Passenger Vessel		Zürichsee-Schifffahrts-gesellschaft	61		22.50	3.80	0.85	2 x 50	electric	16.00	2023
	Passenger Vessel	Insel Mainau	Bodensee-Schiffsbetriebe	300		33.00	9.00	1.26	2 x 75	solar-electric	15.00	07/2022
	Yacht Section		Dutch Shipyard			28.00	9.00					07/2022
	Electric Ferry		Municipal Utilities Lübeck	300 Pax/ 18 cars		37.00	13.50		2 x 231	Voith electric propulsion	14.00	1Q/2023

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
Pella Sietas GmbH | www.pellasietas.com *												
	Hopper Dredger**		German Federal Waterways and Shipping Administration			132.00	23.40	6.90	14,000	diesel-electric	13.00	2024
	Ferry***	Fährschiff 14	Municipal Utilities Konstanz	700 Pax/ 60 cars						LNG		2023
1320	Ice Breaking Vessel****		Rosmorport	14,800		119.80	27.50	8.50			17.00	2023
* Pella Sietas filed for insolvency **the shipyard Blohm+Voss will complete the construction work as a subcontractor of the insolvency administrator *** will be completed by Stadtwerke Konstanz **** fate unknown												
Rönner Verwaltungsgesellschaft mbH | www.hr-gruppe.de												
SET Schiffbau und Entwicklungsgesellschaft Tangermünde mbH | E-Mail: mail@set-schiffbau.de | www.set-schiffbau.de												
203	Dredger	Wesergrund	German Federal Waterways and Shipping Administration			47.05	10.50	1.30	2 x 323	diesel-electric	6.50	05/2022
205	Work Boat	Rheinau	Rhein-Neckar-Hafengesellschaft Mannheim mbH			23.90	5.75	1.30	2 x 285	diesel-electric	10.80	11/2022
206	Push Boat with 2 Folding Barges	Düsseldorf	District government Düsseldorf						1 x 200	Volvo Penta D4–270A-G	6.50	02/2022
207	Work Boat*	Schleswig	Tamsen Maritim			20.10	5.50	1.40	1 x 368	MAN D2676LE497	10.00	02/2023
208	Work Boat*	STS 2	Tamsen Maritim			20.10	5.50	1.40	1 x 368	MAN D2676LE497	10.00	02/2023
209	Work Boat	AB Bodensee 1	Regional Council Tübingen			15.00	5.62	0.65	1 x 165	Iveco N67ENTVP	4.30	09/2023
210	Work Boat	AB Bodensee 2	Regional Council Kempten			15.00	5.62	0.65	1 x 165	Iveco N67ENTVP	4.30	09/2023
211	Work Boat	AB Bodensee 3	Regierungspräsidium Freiburg			15.00	5.62	0.65	1 x 165	Iveco N67ENTVP	4.30	09/2023
212	Passenger Boat	tba	Hadag AG	250		33.40	8.00	2.00	2 x 160	diesel hybrid	11.30	02/2024
213	Passenger Boat	tba	Hadag AG	250		33.40	8.00	2.00	2 x 160	diesel hybrid	11.30	05/2024
214	Passenger Boat	tba	Hadag AG	250		33.40	8.00	2.00	2 x 160	diesel hybrid	11.30	08/2024
215	Water Monitoring and Oil Recovery Vessell	tba	Lower Saxony Agency for Water Management/ Central Command for Maritime Emergencies (Havariekommando)		ca. 500	40.65	9.50	2,00	2 x 375	diesel hybrid	19.00	07/2024
* subcontract from Tamsen Maritim												
Stahlbau Nord | E-Mail: sbn@sbn-bhv.de | sbn-bhv.de												
Frigate*	Type MEKO	Egyptian Navy			120.00					29.00	2024	
Frigate*	Type MEKO	Egyptian Navy			120.00					29.00	2024	
Frigate*	Type MEKO	Egyptian Navy			120.00					29.00	2024	
* subcontract with Thyssenkrupp Marine Systems												

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
Siemer Jachtservice Hunte-Ems GmbH | E-Mail: info@siemer-jachtservice.de | www.siemer-jachtservice.de												
	Patrol Vessel		Police Nordrhein-Westfalen			17.30	4.40	1.25	2 x 331	2 x FPT Marinem. C87ENTM	50.00	05/2023
	Patrol vessel		Police Nordrhein-Westfalen			13.80	4.00	1.10	2 x 257	2 x FPT Marinem. N67ENTM	45.00	06/2023
Tamsen Maritim GmbH | E-Mail: info@tamsen-maritim.de | www.tamsen-maritim.de												
TM 2001	Customs Vessel		General Customs Directorate,Germany		92.00	23.00	6.30	1.20	1,764	MAN	37.04	2023
TM 2002	Customs Vessel		General Customs Directorate, Germany		92.00	23.00	6.30	1.20	1,764	MAN	37.04	2023
TM 2101	SAR Vessel		German Maritime Search and Rescue Service (DGzRS)			10.10	3.60	0.95	279	Cummins QSB 6,7	35.19	2023
TM 7690	Work Boat*		German Navy			20.00	5.50	1.50	376	MAN	18.52	2023
TM 7691	Work Boat*		German Navy			20.00	5.50	1.50	376	MAN	18.52	2023
TM 2201	Fishery Inspection Boat		State Office for Agriculture and Fisheries Mecklenburg-Western Pomerania (LALLF M-V)			16.50	5.00	1.20			55.56	
* subcontract to SET												
ThyssenKrupp Marine Systems GmbH | www.thyssenkrupp-marinesystems.com												
TKMS Kiel and Hamburg												
ARGE	Frigate F125*	F 225 Rhein-land-Pfalz	German Navy	149.50			18.80	5.00	31.60	MTU 20V4000 + MTU	26.00	Jan./2022
	Submarine Dolphin AIP	Drakon	Israel Navy									2024
	Submarine	Invincible	Singapore Navy		2,000	72.00				diesel-electric + AIP		
	Submarine	Impeccable	Singapore Navy		2,000	72.00				diesel-electric + AIP		
	Submarine	Illustious	Singapore Navy		2,000	72.00				diesel-electric + AIP		
	Submarine		Singapore Navy		2,000	72.00				diesel-electric + AIP		
	Submarine HDW Class NTSP (214TR) *******	TCG Pirireis	Turkish Navy									2023
	Submarine HDW Class NTSP (214TR) *******	TCG Hizirreis	Turkish Navy									2023ff
	Submarine HDW Class NTSP (214TR) *******	TCG Muratreis	Turkish Navy									2023ff
	Submarine HDW Class NTSP (214TR) *******	TCG Aydinreis	Turkish Navy									2023ff
	Submarine HDW Class NTSP (214TR) *******	TCG Seydialreis	Turkish Navy									2023ff
	Submarine HDW Class NTSP (214TR) *******	TCG Selmanreis	Turkish Navy									2023ff
	Corvette K130***		German Navy									
	Corvette K130***		German Navy									
	Corvette K130***		German Navy									

Deliveries & orders

Yard-No	Type	Name	Owner	dwt / t / Pax	GT	Loa (m)	Beam (m)	Draft (m)	kW / HP	Engine Type	kn	Delivery
	Corvette K130***		German Navy									
	Corvette K130***		German Navy									
	MEKO A-200 Frigate ****	Al-Aziz	Egyptian Navy									2022
	MEKO A-200 Frigate ****	Al-Qahhar	Egyptian Navy									2023
	MEKO A-200 Frigate ****	Al-Qadeer	Egyptian Navy									2023
	MEKO A-200 Frigate ********	Al-Jabbar	Egyptian Navy									2025
	4 x MEKO A-100 MB Corvettes*****		Brasilian Navy									2025-28
	Submarine HDW Class 212A NFS******		Italian Navy									2029
	Submarine HDW Class 212A NFS******		Italian Navy									2030
	Submarine HDW Class 212CD		German Navy									2032
	Submarine Type U212CD											2034
	Submarine HDW Class 212CD		Norwegian Navy									2029
	Submarine HDW Class 212CD											2031
	Submarine HDW Class 212CD											2033
	Submarine HDW Class 212CD											2035

* Subcontract to B + V Shipyards; bow sections to be built by NVL ** subcontract to German Naval Yards *** in cooperation with Lürssen Group and German Naval Yards **** Steel sections will be built at Bremerhavener Stahlbau Nord. ***** Tamandaré class being built in Itajai, Brazil, in cooperation with Embraer ****** main contract to Fincantieri ******* built by GNSY in Gölcük ******** Material packages, ship to be built at Alexandria Shipyard

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»SHIP OF THE YEAR« 1982 – 2022

Year	Ship type	Name	Yard
1982	Polar research vessel	»Polarstern«	HDW/ WN
1983	Reefer vessel	»Helene Jacob«	Flender Werft
1984	Train ferry	»Railship I«	SSW
1985	Container vessel	»Norasia Susan«	HDW
1986	Cruise ship	»Homeric«	Meyer Werft
1987	Conversion cruise ship	»Queen Elizabeth II«	Lloyd Werft
1988	Container vessel	»President Truman«	HDW
1989	Yacht cruiser	»Seabourn Spirit«	SSW
1990	Mega yacht	»Lady Moura«	Blohm + Voss
1991	Mega yacht	»Eco«	Blohm + Voss
1992	Container vessel	»DSR Baltic«	Bremer Vulkan
1993	Baltic Sea ferry	»Silja Europa«	Meyer Werft
1994	Container vessel	»Norasia Fribourg«	HDW
1995	Cruise ship	»Century«	Meyer Werft
1996	Cruise ship	»Costa Victoria«	BV/ Lloyd Werft
1997	General cargo ship	»Cathrin Oldendorff«	FSG
1998	Cruise ship	»Superstar Leo«	Meyer Werft
1999	Reefer container ship	»Dole Chile«	HDW
2000	Fast cruise ship	»Olympic Voyager«	Blohm + Voss
2001	Cruise ship	»Radiance of the Seas«	Meyer Werft
2002	Frigate	»Sachsen«	Blohm + Voss
2003	Freight ferry	»Tor Magnolia«	FSG
2004	Navy research ship	»Planet«	Nordseewerke
2005	Cruise ship	»Pride of America«	Lloyd Werft
2006	ConRo ferry	»Pauline«	FSG
2007	Cruise ship	»Aida Diva«	Meyer Werft
2008	Cruise ship	»Celebrity Solstice«	Meyer Werft
2009	SWATH pilot vessel	»Elbe«	A & R
2010	Mega yacht	»Eclipse«	Blohm + Voss
2011	Freight ferry	»Seatruck Progress«	FSG
2012	LNG tanker	»Coral Energy«	Meyer Werft
2013	Mega yacht	»Azzam«	Lürssen
2014	Research vessel	»Sonne«	Meyer Werft
2015	Multipurpose vessel	»Murman«	Nordic Yards
2016	RoRo vessel	»Searoad Mersey II«	FSG
2017	Mega yacht	»Aviva«	A & R
2018	Cruise ship	»AIDAnova«	Meyer Werft
2019	Research vessel	»Atair«	Fr. Fassmer
2020	SAR vessel	»Hamburg«	Fr. Fassmer
2021	Mega yacht	»Nord«	Lürssen
2022	**Research vessel**	**»Uthörn«**	**Fr. Fassmer**

2022 award goes to Fr. Fassmer

Berne-based shipyard Fr. Fassmer wins the 38th edition of HANSA's prestigious »Ship of the year« award

Located in Berne on the Weser River, the Fr. Fassmer shipyard has built up a very good reputation in the construction of special ships over the years. And one such special unit is being honoured this year by HANSA as »Ship of the Year«. It is representative of the shipbuilding know-how and work of the shipyard that was founded in 1850 by Johannes Fassmer in Bardenfleth, which now has branches in Lemwerder (Germany), Poland, the USA, Singapore, Taiwan and China. In the meantime, it also covers product areas of shipbuilding, boats and davits, plant engineering, wind power and fibre composite technology.

The »Uthörn« follows the mega-yacht »Nord«, which won the award last year and was built by the Lürssen shipyard group.

The new »Uthörn« is the successor to the research cutter of the same name, which has been in service for the Alfred-Wegener-Institute (AWI) in Bremerhaven since 1982. The newbuilding is the first German seagoing vessel to be equipped with a particularly low-emission methanol propulsion system.

For the Fassmer shipyard, however, it is not the first research vessel to be honoured as »Ship of the Year« by HANSA. In 2019, the shipyard received the award for the »Atair« – a prestige project and one of the »early movers« for newbuildings with LNG propulsion. The following year, the award also went to Berne: for the SAR ship »Hamburg«, which has since been in service for the DGzRS, the German Maritime Search and Rescue Service.

Politics also recognized the relevance of the »Uthörn« project early on: The German Federal Ministry of Education and Research (BMBF) is funding the new coastal research vessel with 14.45 mill. €. It will be able to stay at sea for up to five days with a crew of five and four researchers on board, covering a distance of 1,200 nm. ■

Methanol powered research cutter »Uthörn«

© Fassmer

»Uthörn« enables green research

The German research vessel fleet is becoming greener with every newbuilding. The Alfred Wegener Institute's new research vessel »Uthörn«, is Germany's first methanol-powered seagoing ship – and this is not the only innovation on board

The new propulsion system, heat pump water, hydraulically controlled pitch propeller – so many firsts in one vessel. The »Uthörn« is the new research vessel that the German Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) will use for coastal research. It replaces the 1982-built, old »Uthörn«. After a two-year construction phase, German Federal Minister of Education and Research Bettina Stark-Watzinger christened the cutter on 1 November before handing it over to the AWI.

The 35 m long ship with a price tag of € 14.45 million is the first seaworthy German ship powered by methanol, setting new standards for sustainability in German shipping. In shipping, methanol is still a new fuel and largely untested. However, there have been successful forerunners on which the two modified diesel engines used in the new »Uthörn« are based. With a combined output of 600 kW via the Leroy Somer generators, they provide electricity for the ship's two electric motors that were delivered by SER Schiffstechnik.

Harald Fassmer, Managing Director of the Fassmer shipyard, said: »The christening of the new Uthörn marks a substantial contribution to future-ready, climate-friendly shipping. At the same time, introducing new propulsion technologies entails considerable challenges. For example, when we first received the tender, neither the relevant regulations in their entirety nor the required permit specifications for the planned drive-system components were available. As such, we are proud to lead the way once again in the implementation of innovative, environmentally friendly propulsion systems and to put our expertise in the construction of highly complex research vessels to the test.«

The old »Uthörn« research vessel used 76tonnes of diesel oil per year on average, accounting for 243tonnes of CO_2 emissions. The new vessel uses methanol than can be produced from green electricity and biomass. Batteries for direct use of green electricity were no option for the small research cutter. Making the vessel fully electric with the same range and capabilities would have required large and heavy batteries, which would have resulted in a ship more than double the size. Using a fuel cell was also ruled out due to the lower efficiency compared to the methanol combustion engine.

Together with Bremerhaven-based partners from research and industry, AWI has readied a proposal for a synthetic methanol production facility in Bremerhaven. In a pilot project, renewable electricity from a wind turbine would be used to split water into hydrogen and oxygen via electrolysis. In the next step, this »green« hydrogen and CO_2 from a nearby sewage treatment plant could be used to synthesise »green« methanol, which, when burnt, only releases the amount of CO_2 captured during its production.

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A proud Harald Fassmer after the naming of the newbuilding

»From a shipbuilding perspective, the methanol propulsion system was the biggest challenge. Using methanol as a fuel affects not only the engine and the fuel system but also safety and fire protection on board and in

many other areas. In principle, the methanol propulsion system affects the design of the whole vessel,« Harald Fassmer, Managing Director of Fassmer shipyard, told HANSA.

Due to the lower energy density of methanol, the ship's fuel tank is twice the size of a diesel tank on a conventionally powered comparable vessel. An epoxy coating protects the tank against the corrosive fuel. The fuel, and all other areas where methanol could be released are ventilated via a 15 m high vent mast. The mast's height ensures that methanol fumes are diluted to the point where they are not ignitable anymore. The centrepiece of the vessel clearly is the engine room with its two converted diesel engines. When the »Uthörn 2« project was launched and put out to tender in 2019, ScanDiesel developed an initial concept as an alternative to a fuel cell. After Fassmer was awarded the contract in 2020, the engines were produced in Sweden and received a DNV »case by case« approval and IMO III certification in 2021.

The basic engine is a Scania DI16 marine diesel engine that ScandiNAOS has developed into a methanol combustion engine, as Rainer Dierks, Managing Director of ScanDiesel, the distributor of ScandiNAOS in the D-A-CH region, explains. The Bremen-based company played a decisive role in the certification of the engines by DNV in Germany and Sweden. In addition, the gen-

The 15 m high vent mast channels off any methanol fumes

»Uthörn« is powered by converted diesel engines

set and engine management and the gas-safe control and alarm system, were developed and supplied by ScanDiesel.

In the conversion process, the engine received a new engine control unit with new software. Due to the different energy contents of the fuels and the deviating flame speed, the engine efficiency map and the injection times were significantly changed compared to diesel operation. All parts that come into contact with fuel have been replaced, i.e. pistons, piston sealing rings, various seals, injectors, etc. The new parts must withstand the »more aggressive methanol«, as Dierks explains. Some parts came directly from Scania, which are used in ethanol operation.

»The engine still works on the same ignition principle as the base engine, i.e., as a compression ignition engine with a common rail system with a pressure of up to 2,400 bar. No external ignition source is required. However, an ignition improver is used to ensure very even and clean combustion. Without it, the engine would have a hard time starting, and load changes could lead to misfiring,« says Dierks. Furthermore, a lubricant additive is used, since methanol, unlike diesel, has no lubricating properties. This is supposed to counteract engine wear and extend the life of the engine. As Dierks explains, the fuel consists of 97 % methanol and 3 % additives.

From the perspective of the engine room crew, the engine behaves like a diesel combustion engine. Due to the monitoring and alarm system, the engine works

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The Scania engines were converted by ScandiNAOS

according to a »gas-safe principle«, as Dierks explains: »Any leaks or problems are detected immediately. The fuel must be handled with care and protective measures for eyes and skin, as methanol is incompatible with humans in direct contact. Apart from that, not much changes for the crew.«

Methanol as a fuel is also new territory for engine experts. »It is exciting to be the first and to go ahead«, says Dierks. Due to the lower energy density, there are limitations in engine power, but on the other hand, the engines will not have thermal problems as a result. »IMO specifications can be achieved without an exhaust after treatment system, which is a huge advantage in terms of installation space and costs, especially when you are operating in the low-load range and exhaust aftertreatment would make this more difficult,« says Dierks. He is proud that ScanDiesel was the first on the market to equip a newbuilding with this technology, and he is looking forward to continuing to support this project in long-term operation with service.

Methanol is still new territory for the engine experts

So much for the engines. Another innovation can be found in the ship's propeller. For the first time at a German shipyard, variable pitch propellers with water hydraulics of the type PCP (Piening Controllable Pro-

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Piening delivered water-hydraulic CP propellers

peller) from Piening Propeller in Glückstadt were installed on the Uthörn. These propellers are characterised by the fact that they are operated with water hydraulics and thus run completely oil-free. This means that there is no risk of environmental damage in the event of damage to a seal during hydraulic operation, and there is no waste oil to dispose of during regular servicing.

On the »Uthörn«, two specially designed five-bladed »PCP 5–300« with a diameter of 1,300 mm and a hub made of special stainless steel are used in order to keep the propeller size as small as possible. This optimises the interaction between the ship and the propulsion system in all respects, as Piening Propeller CEO Mathias Pein explains to HANSA.

For the first time on a vessel, the »Uthörn« uses a water-to-water heat pump delivered by Möhring for heating and cooling purposes. This new system uses only a fifth of the energy required by a traditional boiler system. When at berth, the vessel uses shore power. Alphatron was also among the suppliers. The company equipped the vessel with a full range of navigation and communication systems, ranging from an echosounder, compass, and radar to ECDIS and autopilot.

Cranes, A-frame – fitted with everything researchers need

The hull is coated with non-toxic paint

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Besides its environmentally friendly propulsion features, »Uthörn« is also a state-of-the-art research vessel. In addition to a large working deck with dry and wet laboratories, the new Uthörn features two derrick booms for trawling nets and water samplers, a multi-frequency echosounder for detecting and identifying schools of fish, and an anti-roll tank, which can stabilise the ship on choppy seas. Accordingly, it offers marine researchers of all disciplines a platform to learn the tools of their trade – which is also one of its core functions. Like its eponymous predecessor, the ship will not only make valuable contributions to coastal research but also offer students cruises on the North Sea, giving them the opportunity to familiarise themselves with the heavy gear used in field research. Antje Boetius, Director of the Alfred Wegener Institute, comments: »As a central pillar of coastal research at the AWI, the Uthörn regularly monitors the physical, chemical, and biological status of the North Sea in the German Bight and near Helgoland. By doing so, the ship provides us with valuable and critical long-term data, allowing us to gauge better climate change and its impacts on the marine environment. I very much look forward to new cruises with students and young investigators from Germany and abroad, who will have the chance to learn the practical basics of marine research on board the Uthörn.« *fs*

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Approvals

DNV · LR · ABS · BUREAU VERITAS · ClassNK · CCS · RINA

GFDO_AD_00111_EN (01.23)

»Another important reference in the field of sustainable fuels«

Fassmer shipyard has delivered 2022's Ship of the Year, the »Uthörn«. Managing Director, Harald Fassmer, talks about the challenges involved in the costruction of the methanol powered research cutter and the opportunities it opens up

© Fassmer

Harald Fassmer

The »Uthörn« is the first German seagoing ship with a methanol propulsion system. What was the challenge with this newbuilding from a technical point of view during design and construction?

Harald Fassmer: The planning of technically demanding special ships is complex and involves many risks. This is particularly true when alternative fuels are considered, as is the case with this newbuilding. The relevant regulations still need to be completed in some cases and leave room for interpretation, which can repeatedly lead to discussions, postponements, and cost changes, especially in the case of smaller special ships. In the case of the »Uthörn« with methanol propulsion, we have had to orient ourselves by the provisional guidelines of the IGF Code.

In addition, the availability of methanol-suitable and especially methanol-approved engines and system components is a particular challenge. Construction-related type approvals had to be considered, in addition to very extensive sensor technology and a complex monitoring and alarm system.

Apart from the methanol drive, what else is technically outstanding about the ship?

Fassmer: For example, a water-to-water heat pump was installed on the »Uthörn« for the first time. It generates heat and cold simultaneously via a refrigerant circuit, and it is environmentally friendly and significantly more energy-efficient than a conventional boiler. The ship is driven by a controllable pitch propeller system, which is powered by fresh water instead of oil hydraulics. The newly developed clean seawater system is also worthy of mention. This system is used to supply seawater for scientific purposes while the ship is at sea. Here, special material requirements, permissible temperature gradients and flow controls must be considered throughout the piping system. Finally, the »Uthörn« has multifunctional research areas, extensive research equipment with various special winches and hoists, and spacious equipment areas with a very compact overall design. In general, the latest »Blue Angel« requirements for ship design had to be implemented.

How was the cooperation with the AWI as the client during development and construction?

Fassmer: We experienced a very good and trusting cooperation with the Alfred Wegener Institute. The AWI scientists and the operators of the »Uthörn« contributed many good details and suggestions during the design phase and during construction, which we were happy to take into account.

What are the implications of the construction of the »Uthörn« for future projects? Is methanol now part of the Fassmer portfolio, or will there be further cooperation in the field with Scandinaos and ScanDiesel?

Fassmer: On the way to climate-friendly shipping, methanol will become an increasingly important fuel. With »Uthörn«, we now have another important reference in the field of sustainable fuels that will certainly help us in future projects of a similar nature. With this experience, we can also significantly reduce the otherwise usual risks of a new

development for the benefit of our customers. In fact, we are currently working on several projects where methanol is an alternative fuel. Repeated cooperation with Scandios and ScanDiesel is quite possible, depending on the required power.

For which types of ships can you imagine comparable propulsion concepts, and where do you see limits for methanol as a marine fuel?
Fassmer: The »Uthörn« has a methanol-electric propulsion concept that was specially designed for this newbuilding. Similiar propulsion concepts would, in principle, be conceivable for other similarly sized research and special ships. A limiting factor is currently still the availability of approved methanol propulsion engines. Since the power density of methanol is only about half that of diesel, the fuel tanks must be correspondingly larger for the same range. Apart from the availability of methanol – especially synthetically produced methanol – we see no limits for methanol as a marine fuel.

Has the delivery of the Uthörn already generated interest among potential customers?
Fassmer: Absolutely. Interest in special ships with sustainable propulsion technologies is growing strongly. Here we benefit from the fact that we have done a lot of development work in the construction of new LNG and methanol-powered special ships and therefore have the necessary know-how and references.

What projects is your shipyard currently developing or building?
Fassmer: We are currently working on various civil and paramilitary projects in Germany and abroad. The order backlog includes, among others, another 86-meter operational vessel for the German Federal Police, two 50-meter multi-purpose vessels for the German Navy/WTD 71, a 65-meter operational vessel with LNG propulsion for the customs administration, a 70-meter multi-purpose vessel (MPV70) for the Navy of Ecuador, a 105-meter research vessel for a foreign customer, and a 125-meter research vessel that we are building in a consortium with Meyer Werft for the German Federal Ministry of Education and Research.

What impetus do you expect from the national efforts in terms of the energy transition and the »turning point« proclaimed for the defence sector after Russia's invasion of Ukraine?
Fassmer: Both topics involve urgently needed changes in Germany, and there is a lot of work for the maritime industry in both areas. The German expansion targets for offshore wind energy by 2030 alone can only be achieved by investing billions in converter platforms and a fleet of around 100 units of various types of ships. The European targets are almost five times as large – a huge business potential for the shipbuilding industry.

The »turning point« has not yet generated any additional business in naval shipbuilding. It has, however, strengthened the perception of the major deficits of the German Army and led to a completely different public discussion. I am convinced that the German Navy will also benefit from this and that this will also lead to a noticeable strengthening of its fleet in the medium term.

What are your expectations of the German government's new Maritime Coordinator, Dieter Janecek?
Fassmer: Mr. Janecek made extensive use of the opportunity to talk to many industry representatives at the Parliamentary Evening of the German Shipbuilding and Ocean Industries Association VSM and made a very positive impression. The list of topics is long. He will have to do a lot of convincing in parliament and the cabinet to ensure that Germany takes advantage of the opportunities associated with a strong maritime industrial base. A new, truly ambitious Maritime Agenda could be one of the instruments for this. *fs*

Quality and reliability

Germany has a centuries-old shipbuilding industry with a traditional and large naval sector. Made in Germany has become a symbol of quality – from everyday objects to industrial equipment and, of course, ships

German naval vessels were coveted around the world. Of course, the roots of quality can be found in the building programmes of the world wars, but to this day, German naval shipbuilding is synonymous with quality and reliability.

Have you ever been on board a Class 125 frigate? Don't look at the weapons systems or the technology; just look at the ship: it gives you a sense of security and radiates precision and skill. This is what we have been used to for decades, the indestructible ambience of our submarines, minesweepers, and auxiliary ships. No wonder German ships sail all over the world, be it OPVs in South America, frigates in North Africa or mine countermeasures in Asia.

However, the German Navy has benefited less than it might have wished from the belt-tightening of recent years. The downsizing of the armed forces, and the reduction of the German Navy to its current small size of less than 50 units, has left its mark on the shipbuilding industry. It is vital for the German industry to be able to export, as this is the only way to maintain capacity and know-how. Even if the German Navy only renews its types every 30 to 40 years, the innovation cycle must continue in the meantime – and that depends to a large extent on exports.

Ultimately, however, the world will only buy »Made in Germany« if the Germans have confidence in their own product and use it themselves. The navy is still the most important customer for German shipbuilding. And not just on the coast, but all over Germany, as the order for the F 126 from the Damen shipyard shows. The entire German supply chain is on offer.

Russia's attack on Ukraine has put the navy in a new light. Germany, says VSM managing director Reinhard Lüken, was not prepared for this either. In the coalition agreement of 2021, the intention was to present a comprehensive national security strategy under the leadership of the Federal Foreign Office. Since the outbreak of the war, security policy has taken on a completely different significance in public perception, with a high level of presence and media attention.

The current alarming developments in the global security situation must therefore be considered in German foreign and security policy. As an industrial and trading nation, Germany is dependent on the use of sea routes. This is not just about consumer goods but also the import of raw materials and the export of German products. The disruption of supply chains now affects us all. The German Navy is a guardian of this process by protecting the sea lanes. This is also an international contribution to NATO and Europe. This requires a navy that is operationally ready and capable. An overview of current procurement projects:

- The 125-class frigate has finally joined the Navy. The last unit, »Rheinland-Pfalz«, will be commissioned in 2022 and is now being prepared for deployment.
- The second batch of 130-class corvettes has been under construction since 2020. In 2022, the corvette »Cologne« was christened in a highly publicised ceremony, with delivery expected in 2023. The second ship, »Emden«, will be christened in the first half of the year, and the last newbuilding, »Lübeck«, is scheduled for delivery in 2025.

- Construction of the successors to the tankers »Rhön« and »Spessart« is also expected to start in 2023.
- Construction of the F126 frigate is also scheduled to start in 2023; this series will be built by Damen Shipyards together with NVL, the naval branch of Lürssen in Germany. At €5.27 billion, this is the largest single shipbuilding project in the Bundeswehr's history. Numerous German suppliers are involved in technical systems such as propulsion, steering and nautical equipment.
- Two 212 CD submarines will be built in German-Norwegian cooperation and delivered by 2026. This has been confirmed in the special budget approved for the Bundeswehr.
- The F 124 and F 123 frigates will undergo extensive modernisation.
- The fleet's Class 424 service boats will be replaced. The construction contract will be signed in 2022. The ships will enter service in 2027.
- A decision has been taken to build several new support vessels for the Defence Technical Services.
- The requirement for multi-purpose combat boats has been approved. Procurement has not yet started. Nor is it clear whether there will be a European solution or whether they will be built in Germany. The requirement for 20 amphibious assault boats has been formulated.
- The »Next Generation Frigate« (F 127) is entering the design phase. Six units are to replace the Class 124 frigates from 2032. Again, there will be German-Dutch cooperation.
- Following the decommissioning of the navy-owned multipurpose tugs, new units will be purchased on the second-hand market. The decision is imminent.

The Federal Government's financial commitment of July 2021 was a major step towards maintaining the operational capability of the German Navy. However, this is not an upgrade, but merely a renewal. The number and size of the Navy will not change. It was only with Chancellor Olaf Scholz's »turnaround« speech and the announcement of the special fund that naval shipbuilding received a temporary boost.

For the time being, the corvette construction programme will not be continued, the Navy will receive only four ships of the 126 class, and no further projects will be realised for the time being. This, by no means, changes the Navy's continuing needs:

- The German Navy's minesweepers are to be modernised again, and the successors must be built before the end of this decade.
- The 404-class tenders are also in their third decade of service, and Medium Support Units (MUs) are needed to replace them.
- Auxiliary and operational vessels still need to be replaced, despite the decision in favour of multi-purpose tugs.

In addition, Germany has no landing craft or dock ships, no sea transport capacity of its own, and no hospital ships for humanitarian missions. A holistic national approach is conceivable for the Navy in order to be better prepared for one's own crisis management and to support friends and allies in an emergency. ■

Silver lining on the horizon

Shipping and shipbuilding for inland navigation are still facing hard times. Nevertheless, German shipyards have a lot of capabilities and expertise to deliver sophisticated newbuildings and quality-proven repair projects

Like many other sectors of the economy, coming from a prolonged COVID-19 crisis, German inland shipyards continue to struggle with varying levels of capacity utilisation, recruitment problems of young talents, sluggish order intake in some cases, a declining order book and a subdued market outlook. In addition, in some locations, there are increasing problems with competition for waterfront areas due to planned residential development.

Nevertheless, domestic yards continue to offer high quality, flexibility, broad experience, and technological competence. The 50 or so inland waterway shipyards, employing some 2,000 people directly, are mostly family-run businesses with a long tradition, and are committed to maintaining their position in a demanding and competitive market. They are indispensable service partners for the environmentally friendly transport mode of inland navigation, for the waterways and shipping authorities and all other activities on the waterways and in the ports, contributing to the smooth operation of ships with their maintenance and repair services.

It should be noted, however, that the order backlog continues to decline sharply. After falling to €145 million (63 units) in 2020 – the lowest level for 10 years – it dropped again last year by no less than 46 % to € 78 million (49 units). The difficult situation becomes clear when looking at deliveries by German yards in 2021. Fifty-five newbuildings worth € 122 million were handed over to their owners, which is again significantly less than the €222 million for 45 units in 2020. In terms of orders, 36 new ships worth € 46 million were booked, compared to 46 units (€ 39 million) in the previous year.

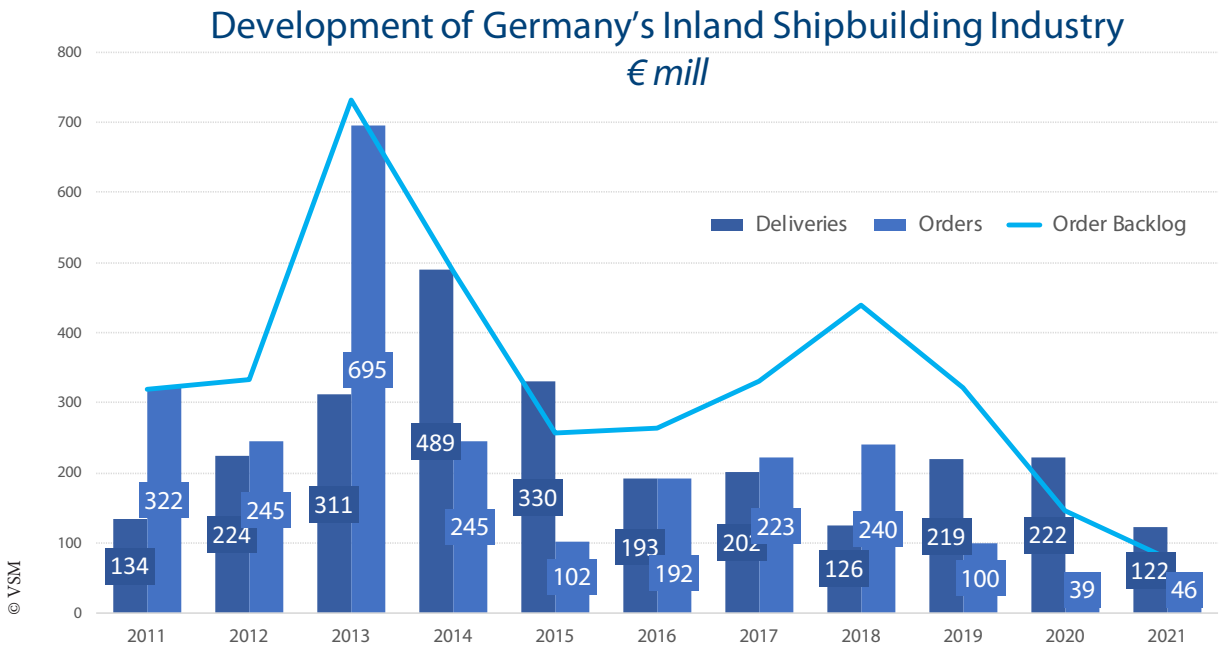
But there is a silver lining on the horizon, such as a new order of a river cruise ship by the US company Viking at Neptun Werft. It is the first order after a 62 vessels series ended two years ago. Another flagship project was the delivery of the world's first hydrogen and fuel cell-powered tugboat. The »Elektra«, built at the Barthel shipyard on the River Elbe, was christened in May and is now undergoing long-term trials before being used to transport turbines over long distances from Berlin to Hamburg. And there are many more examples of the excellent craftsmanship of German yards.

For shipping companies and shipyards, the electrification of waterborne transport has become a key issue strongly promoted by the Federal government through enhanced funding. One of the highlights completed in 2022 was the levelling vessel »Chicago«. This newbuilding, commissioned by the Hamburg Port Authority (HPA) from the Hitzler shipyard, can be operated for up to two hours in an emission-free and silent battery mode. The rest of the time, it runs on low-emission GTL fuel. In the future, the propulsion system could also be converted to climate-neutral e-fuels.

Schiffbau- und Entwicklungsgesellschaft Tangermünde (SET) has been awarded the contract for three new ferries for Hamburg-based Hadag. These ferries will be equipped with plug-in hybrid propulsion and batteries. The ships will also be »H2-Ready«.

Public funding programmes

Investments in technological innovation are supported by two important funding programmes of the Federal Ministry of Transport (BMDV). The »Programme for the Sustainable Modernisation of Inland Navigation«, was approved in the summer of 2020, and originally provided around € 95 million over three years. The funding has since been increased to € 50 million per year. All measures that can improve the efficiency of inland navigation or reduce its environmental impact are eligible. The total funding rate of 90 % applies to all-electric propulsion, the use of alternative fuels, the installation of fuel cells, emission reduction systems or the conversion of the stern or bow to improve shallow draft capabilities. In addition, digital and navigational systems such as collisi-



on avoiding applications are also eligible for funding, as are semi-automatic lock passages, if they increase safety and reduce GHG emissions. This package only includes propulsion systems that do not use fossil fuels. Conventional combustion engines are therefore excluded. Therefore, a second funding programme adds subsidies to the retrofitting of diesel engines and retrofits of exhaust after-treatment systems such as Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and fuel-water emulsion systems.

Generous subsidy

The German Shipbuilding and Ocean Industries Association (VSM) points out that this is the most generous subsidy ever granted in Germany for retrofitting low-emission engines. Depending on the size of the company, the subsidy amounts to 40–60 % of the expenditure, plus the costs of removal and installation. This is significantly higher than the effective subsidy rate of 15–20 % under previous programmes, which only covered the additional investment costs. Up to € 200,000 will be paid per inland waterway vessel. Both programmes are expected to generate new orders for German shipyards in the newbuilding and repair sectors.. *KF*

The zero-emission push boat »Elektra« in its home port of Berlin

First of its kind

»Elektra« is the world's first zero-emission push boat. The vessel features a battery electric propulsion system combined with hydrogen and fuel cells, this unique newbuilding can serve as a blueprint for a variety of barges and coastal vessels

This newbuilding is proof of German shipbuilding capabilities. The »Elektra« was built over 2.5 years at the shipyard Hermann Barthel and features battery-electric propulsion system combined with hydrogen and fuel cell technology, reportedly the world's first for a push boat.

The basis of the newly developed hybrid system is the battery package, consisting of 242 DNV-approved GO 1050 modules with a total capacity of 2.5 MWh, delivered by EST-Floattech, and three maritime fuel cell systems (NT-PEMFC, 100 kW peak power each). Although the battery and fuel cells will be used together to power the electric motors for complete redundancy, the two powertrains are independent systems. On hydrogen, it can travel a minimum of 100 km over a 16-hour day or longer. The 20-m-long pusher with a beam of 8.2 m and a draft of 1.25 m will deliver an electric power capacity of 21,200 kWh for a round trip from Berlin to Hamburg.

Christened by godmother Franziska Giffey, the Mayor of Berlin, in April 2022, the »Elektra« is the product of a partnership between eight dedicated firms. Under the project management of the Department of Maritime Systems Design and Operations at the Technical University of Berlin, BEHALA – Berliner Hafen- und Lagerhausgesellschaft (logistics), shipyard Hermann Barthel, Ballard Power Systems (fuel cells), Argo-Anleg (hydrogen system), SER Schiffselektronik Rostock (electrical energy system), EST-Floattech (battery system) and HGK Ship-

© Förster

Numerous enclosures have been installed to manage the power, with the batteries located underneath. The hydrogen is stored in tanks on deck

ping (nautical operation) joined forces for the development, construction and testing of this push boat.

The € 14.6 million project has been backed by the Federal Ministry for Digital and Transport (BMDV) with approximately € 9.1 million and supported and coordinated by project manager Jülich (PTJ) and the National Organization for Hydrogen and Fuel Cell Technology (NOW). The ground-breaking vessel will serve as a blueprint because its power system is designed to apply to various barge and coastal vessel types. It's a blueprint of how climate and environmentally-friendly inland shipping could look in the future.

The vessel's power system will provide energy for the ship's propulsion and for the temperature control of the cabins and the wheelhouse. The waste heat from the fuel cells is used through continuous water cooling and a brine heat pump heats the cabins. A self-developed energy management system and a digital sailing assistant support the crew in planning of operations and transports.

With 750 kg of gaseous hydrogen (at a pressure of 500 bar) on board and a battery capacity of approximately 2,500 kWh, the ship has a range of around 400 km when sailing in combination with the loaded heavy lift barge »Ursus«, owned by BEHALA, too, and mainly used for the transport of turbines.

Thus, in addition to the Westhafen port in Berlin, only one other land-based station is needed to supply the »Elektra« with hydrogen and electricity so that it can travel on the waterways from Berlin to the seaport of Hamburg or to Stettin in Poland and later on to the Rhine/Ruhr region. A refuelling station is currently being built in Lüneburg. TU Berlin has contracted Mittelelbe Business Park and H2 Green Power & Logistics to fill and transport the Multiple Energy Gas Containers (MEGCs) with green hydrogen until the end of the Elektra project phase at the end of 2024. The MEGC can be exchanged with the onboard crane, and the power connection runs via a loading beam that guides the cables to land. The vessel can be connected to the charging station easily and in a short time.

Throughout 2023, Elektra will undergo a series of tests to prepare it for operational service. The tests will initially take place in the capital region, but from 2023 they will also be carried out on long-distance routes towards Hamburg. *KF*

HITZLER WERFT

Emission-free through the Port of Hamburg

With the christening of the »Chicago«, Flotte Hamburg has taken delivery of one of the most modern levelling vessels. This special ship, which has an innovative hybrid propulsion system, was built at the Hitzler shipyard in Lauenburg.

The »Chicago« is a state-of-the-art vessel in terms of its performance and sustainability, said Jens Meier, head of the Hamburg Port Authority, of which Flotte Hamburg is a subsidiary, on the occasion of the ship's christening. He added that the vessel can operate for up to two hours in emission-free and silent battery mode. Otherwise, it will run on low-emission GTL (gas-to-liquids) fuel, he said.

The propulsion system consists of two Caterpillar C18 engines. Each has an output of 500 kW at 2,100 rpm. The auxiliary diesel was also supplied by Caterpillar. It is a C4.4 ACERT model with 99 kWe at 1500 1/min. The electric drive is provided by two BEN Buchele motors, each rated at 60 kWe at 2,130 1/min. The two electric motors sit directly on a reversing gearbox supplied by Reintjes. The electrical power of the »Chicago« is sufficient for around 120 minutes at six knots. In GTL operation, the 25 m long, 8.50 m wide and maximum 2.60 m deep ship reaches around 10 knots. ■

© Henckel

LUX WERFT

»Möwe« delivered

The Haltern am See municipal utility has had an electrically powered passenger ship since last summer. The successor to the »Möwe« is operated on the Haltern reservoir. The ship, also called »Möwe«, was built at the Lux shipyard on the Rhine near Bonn.

The »Möwe« has a silent electric drive and operates completely emission-free. The low-vibration, elastically mounted rudder propeller can be steered through 360°. The batteries with a capacity of 1024 kWh are charged at night with sustainably generated electricity. Solar cells on the roof of the ship provide further energy during the day.

The new 36-meter-long and nearly 8-meter-wide „Möwe“ replaces a much smaller and combustion-engine-powered ship. Now up to 270 passengers can be accommodated on the two decks. ■

© Stadtwerke Haltern am See

OSTSEESTAAL

First newbuilding delivered to Zurich

The Stralsund shipbuilding company Ostseestaal has built an electric passenger ship for the Zürichsee-Schifffahrtsgesellschaft (ZSG). After completion, the newbuilding was shipped to Switzerland by trailer. The ship covered a distance of more than 1,100 km. The 22.50 m long and 3.80 m wide inland passenger ship is the first of three identical newbuildings that Ostseestaal and its subsidiary Ampereship are delivering to the Swiss company.

The Stralsund-based company won the three electric passenger ships for Lake Zurich in a Europe-wide tender. The zero-emission newbuilds will replace three diesel-powered ships that have been sailing for around 30 years on the Limmat, the river that runs out of Lake Zurich and crosses Zurich. The ships for Switzerland mark the first time the shipbuilder has realised an electric ship project for a foreign client.

Since the ships have to turn on the narrow Limmat River and operate under deep bridges, the hulls had to be designed very flat. They replace the Limmat boats »Felix«, »Regula«, and »Turicum«, which are over 30 years old. ■

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SCHIFFSWERFT BOLLE

E-catamaran »James Hobrecht« delivered to Berlin

© Bolle

Berlin has a new battery-powered special vessel for water monitoring. It runs mainly on electricity. The e-catamaran built at Bolle was christened »James Hobrecht«. The vessel replaces the 60-year-old diesel-powered service vessel »Glienicke«.

The »James Hobrecht« will be used on the capital's waters for water sampling and measuring trips. According to the state, the vessel can complete an entire day shift without recharging the battery. By operating the latest vessel and taking the diesel-powered »Glienicke« out of service, the state of Berlin aims to avoid emissions of around 11.2 tons of CO_2 equivalents per year. The e-catamaran is 14 m long, 4.20 m wide, with a draft of 0.85 m and a total weight of 20 tons. The electric propulsion system with two 50 kW ring propellers is powered by a 385 kWh battery.

The e-catamaran is charged at two stations – each with 64 kW. The state of Berlin specifies an »uninterrupted« trip of eight hours duration at 12 km/h as the operating time.

The special ship is named after James Hobrecht. He founded modern water management and was a city building councillor in Berlin in the 19th century. ■

SET TANGERMÜNDE

Successful launch of the workboat »Rheinau«

In the summer of 2022, the workboat »Rheinau« was launched at the SET shipyard in Tangermünde. »As the name already expresses, the vessel is specifically made for the shipping conditions on the Rhine river«, says shipyard managing director Fabian Karbe. »The ship's shape, including the bow bulge, which has been flow-optimised by means of CFD software, ensures low ship resistance including wave pattern and efficient ship operation«, he continues.

The three installed generators from the manufacturer Caterpillar supply the necessary energy for the 285 kW electric propulsion motors and the other on board electrics, both individually and in synchronous operation. With the help of the installed HIAB loading crane, the ›Rheinau‹ will be able to carry out minor technical salvage work in the Mannheim port area during subsequent operations. The installed coupling winches and the pushing device will give the 24 m long and 5.75 m wide ship the necessary pushing ship characteristics. The optimised propeller and shaft system and the propeller nozzles reinforces the thrust required for a convoy speed of at least 13 km/h. A generously proportioned service room, including a galley and an ergonomic wheelhouse with a steering console, will also provide pleasant working conditions and space for crew and visitors. ■

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(Grafik: Hitzler Werft / Hereon)

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