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# SMM area plan



## Programm

			<b>Maritime Future Summit</b>	Monday 5 september
		<b>TradeWinds Shipowners Forum</b>	<b>SMM</b>	Tuesday 6 september
	<b>Maritime Start-up Pitches &amp; Night</b>	global maritime environmental congress <b>gmecc</b>	<b>SMM</b>	Wednesday 7 september
<b>MariMatch</b>	<b>Offshore Dialogue</b>	international conference on maritime security and defence <b>MS&amp;D</b>	<b>SMM</b>	Thursday 8 september
<b>MariMatch</b>	<b>Career Forum</b>	international conference on maritime security and defence <b>MS&amp;D</b>	<b>SMM</b>	Friday 9 september

Krischan Förster  
Chief Editor

## Getting out of limbo

This year's SMM is coming with plenty of tailwinds. Amid geopolitical tensions with the war in the Ukraine still going on, the lasting COVID19 pandemic with recent lockdowns in China, and severe disruptions seen all over the world in ports and supply chains, the maritime industry still experiences mostly bullish markets.

All liners posted record earnings, the container shipping's orderbook reached one third of the existing fleet. This creates an urgent need of all kinds of equipment and a surge in orders for suppliers. Well, that is good news after a long period of drought, starting more than a dozen years ago after the Lehman collapse and then lasting for so long.

At the same time, tremendous challenges sweep onto the whole industry, starting with the implementation of EEDI, EEXI and CII and ending with more than ambitious regulations set by the IMO to get shipping on a speed lane towards decarbonization. Again, a lot of uncertainties are flying around – which technologies are best to be applied, which fuels will be available in due time, what kind of action must be adopted by the companies themselves?

Fortunately, another drought is about to end in a few days: The SMM as the world's leading maritime trade fair will make its comeback after a four years' forced break – not counting the less successful attempt last year to bridge the time with a digital light version.

There is still no alternative to a real trade show: People need to and want to meet and greet, to share insights, to refresh relationship or to establish new business contacts and to lay the ground for good business in the future. All of us did our best to cope with COVID limi-



tations. But without a doubt, living in a predominantly digital cosmos will always be the second best choice compared to the real world.

So when the doors of the exhibition halls open on 6 September, we can expect a rather agile and open-minded community hunting for new business opportunities. But all exhibitors and visitors must also be prepared for a new era into which the maritime industry is heading. While digitalisation remains a task for today and tomorrow, the decarbonisation of shipping will certainly be the main issue to focus on.

While political and regulatory pressure is increasing, shipping and suppliers remain in limbo despite many promising projects and futuristic ship designs. SMM has always been a marketplace where the most advanced products and applications are presented. Moreover, it is becoming increasingly important to harness swarm intelligence to discuss viable ideas and forge new paths of collaboration to successfully tackle the truly Herculean task of making shipping climate neutral.

This is where the SMM conferences come in, and we recommend you start right on Monday with this year's Maritime Future Summit, co-hosted by HANSA. Don't miss high-level experts discussing the latest digital trends and innovations!

By the way: We as HANSA will of course also be there, with our own stand, events and exclusive publications. Feel free to drop by – hall A1, booth 433.

We are looking forward to meeting you in person at **SMM Hamburg**



6-9 September

Stand number

Hall B4, EG Stand 107

Book a meeting by scanning QR code or visit

[lr.org/smm](https://lr.org/smm)



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to meeting you at  
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Navigation and communication equipment

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## HAMBURG – OUR HOME FOR SHIPPING

SMM is special because it turns Hamburg into the home of shipping. And Hamburg has been our home for over 150 years. We have supported the German maritime industry for generations, here and around the world, providing classification and advisory services through every stage of the construction and operation of vessels.

See you in Hamburg at #SMM2022!

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DNV

# Gliding over waves

Siemens Digital Industries Software announced that Regent has adopted the Siemens Xcelerator portfolio of cloud-based software and services to help pioneer a new category of vehicle called the »seaglider«. The seaglider is a high-speed zero emission vehicle that operates exclusively over the water to drastically reduce the time and cost of moving people and goods between coastal cities. As a manufacturer or OEM, Regent’s launch customers span aviation, ferry and logistics transportation operators.

The »seaglider« operates exclusively over the water as an all-electric wing-in-ground-effect (WIG) vehicle. It travels the sea in one of three modes—floating on its hull near the terminal, foiling on its hydrofoils at up to 40 knots as it comes in and out of port, or flying above the waves at 160 knots while cruising to its destination. When in flight, it operates a few meters off the surface of the water, relying

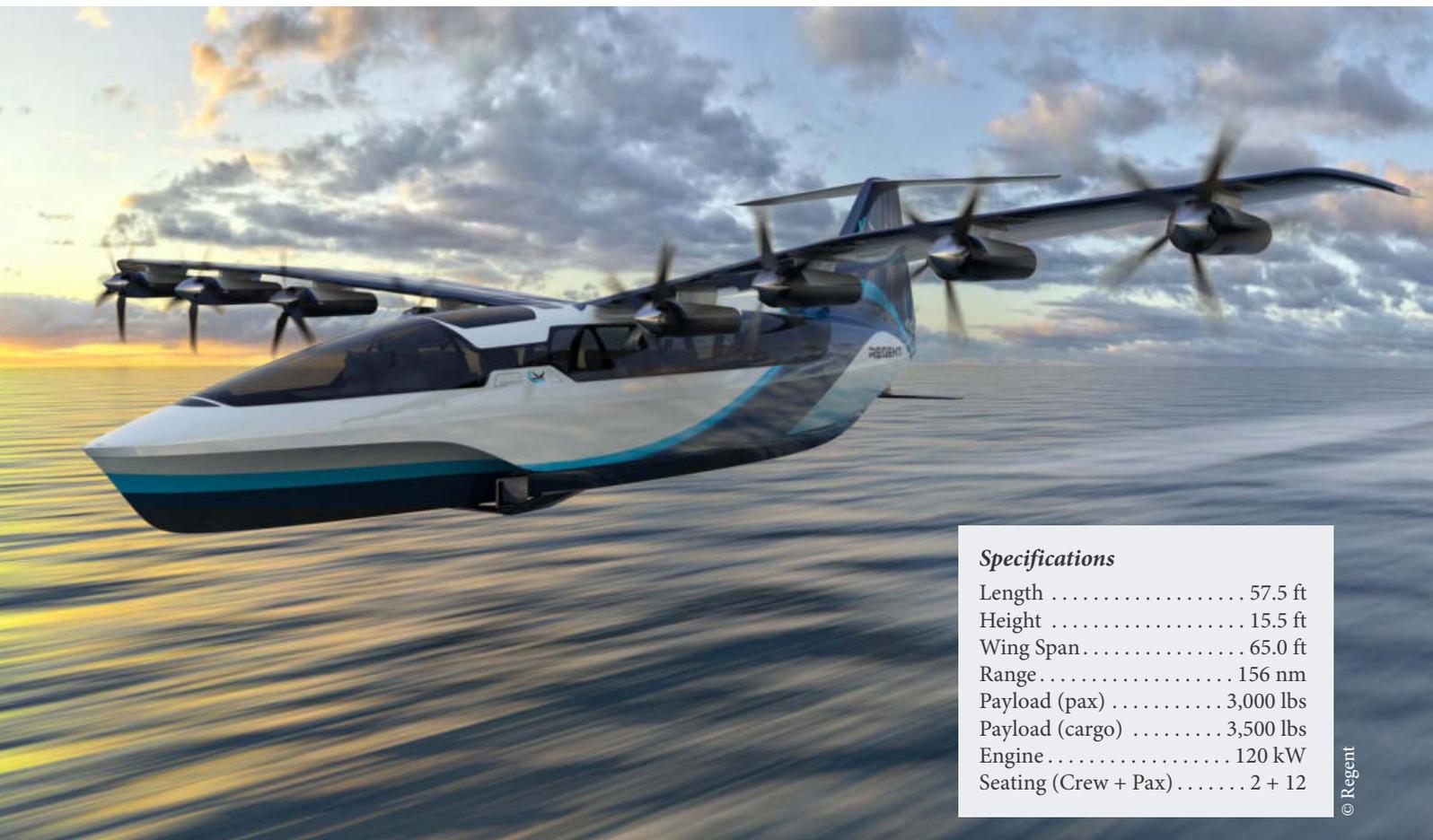
on the ground effect phenomenon, flying on a cushion of air. It combines the high speed and comfort of an airplane with the low operating cost of an electric vehicle.

At the heart of its design, engineering and development toolset is the Siemens Xcelerator portfolio, which has been fundamental to Regent since its founding in 2020. »At Regent we are focused on bringing a revolutionary new vehicle to the transportation market with the potential to change how both people and freight move over the water,« said Mike Klinker, CTO and cofounder. »As our seagliders approach certification and full-scale commercial production, we need a robust, modern digital tools platform that supports the pace of our innovation cycles.« This is why Siemens Xcelerator came into play, he says.

Regent’s flagship seaglider, the twelve-passenger »Viceroy«, will be built to the highest safety standards. It will be able to

service routes up to 180 miles with existing battery technology and routes up to 500 miles with next-generation batteries, all via existing dock infrastructure. Additionally, its operation as a wing-in-ground effect vehicle above the water enables maritime testing and certification. This is an efficient pathway to entry-into-service, allowing customers to experience high-speed, zero-emission coastal mobility sooner than electric aviation options, while maintaining similar levels of safety.

»It’s not often that the revolution of mobility and electrification combine with such spectacularly innovative product design to address a specific challenge like the one faced by coastal communities across the globe,« said Dale Tutt, Vice President of Industry Strategy, Siemens Digital Industries Software. ■



### Specifications

Length	57.5 ft
Height	15.5 ft
Wing Span	65.0 ft
Range	156 nm
Payload (pax)	3,000 lbs
Payload (cargo)	3,500 lbs
Engine	120 kW
Seating (Crew + Pax)	2 + 12

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## At home all over the world

Sailing away to far-flung places, vessels brave unnavigable elements in their quest for future-facing research. The scientific equipment aboard these vessels is just as important as their technical systems. Viega pipeline systems withstand the high demands at sea. Numerous reliable and efficient systems and materials guarantee a reliable installation: CuNi for seawater – copper, stainless steel and plastic for drinking water, heating and cooling – or press connectors for thick-walled steel pipes. Matched to one

another, the Viega systems are instrumental in ensuring a reliable supply of hygienically impeccable drinking water and an efficient distribution of electrical energy inside the vessel. The Viega piping systems can be installed quickly and easily without any hot work or complex tool technology. This ensures efficiency – when it comes to maintenance and repairs too. Viega is a reliable partner. Working to ensure the research team can go about its experiments without disruption.



## Fliegende Hamburgerin

*Was für HANSA-Verhältnisse auf den ersten Blick etwas futuristisch anmutet, ist für den Profi-Segler Boris Herrmann ein großer Hoffnungsträger und das Produkt seiner Regatta-Erfahrungen (man erinnere sich an die turbulenten Ereignisse während der Vendée Globe 2021, mit denen Herrmann seine Fans in Atem hielt ...)*

*Die neue »Malizia Seaexplorer« wurde kürzlich im französischen Lorient erstmals der Öffentlichkeit präsentiert und von Land mittels Kran über die Köpfe des Fotografen ins Wasser gehoben. In diesen Tagen wird die neue Renn-Yacht in ihrem Heimathafen Hamburg getauft, auch an der Elbe dürfte dem Segler, der sich das Thema Nachhaltigkeit auf die Fahnen geschrieben hat, große Aufmerksamkeit zuteil werden.*

*Foto: Team Malizia*

Liebe Leser,  
wenn auch Sie eine maritime Momentaufnahme eingefangen haben, schicken Sie uns gern das Foto mit ein paar persönlichen oder erklärenden Zeilen dazu. Wir freuen uns über Ihre Einsendungen an: [redaktion@hansa-online.de](mailto:redaktion@hansa-online.de) sowie Schiffahrts-Verlag »Hansa«, Stadthausbrücke 4, 20355 Hamburg. Hinweis: Der Verlag behält sich das Recht vor, eingegangene Fotografien für redaktionelle Zwecke weiterzuverwenden.

■ **UNIFEEDER:** **Christian Hoepfner**, ehemaliger Prokurist der Wessels Reederei, wechselt zum Feeder-Carrier Uni-feeder. Der Wirtschaftsingenieur wurde zum Director Group Sustainability ernannt und soll sich um Themen der Nachhaltigkeit kümmern – sowohl im Betrieb der Containerschiffe als auch in den Vor- und Nachläufen auf Straße und Schiene.



■ **TRANS GLOBAL PROJECTS:** **Steve Hutty** ist neuer Head of Chartering des Projektlogistikers TGP. Er folgt auf Walter Prosetti, der in den Ruhestand gegangen ist. Hutty verfügt über fast 30 Jahre Erfahrung in der Schifffahrt und war zuletzt unter anderem als CEO bei Halmar und CB Marine sowie als Geschäftsführer bei DS Multibulk aus der deutschen Unternehmensgruppe Dr. Peters tätig.



■ **HAFEN SINGAPUR:** **Quah Ley Hoon**, bisher CEO der Maritime and Port Authority of Singapore (MPA), wird am 5. September zurücktreten. Ihr Nachfolger wird Teo Eng Dih, derzeit stellvertretender Sekretär des Verteidigungsministeriums. Quah hatte den CEO-Posten Anfang 2019 übernommen. In ihre Amtszeit fiel u.a. die Fertigstellung des Mega-Ausbauprojekts im Hafenteil Tuas.



■ **COMBI LIFT:** **Jens Siedentopf** ist als neuer General Manager am Stammsitz Bremen tätig. Er war die letzten ein- und einhalb Jahre Head of Breakbulk & Projects bei der niederländischen Reederei Samskip. Davor leitete er viele Jahre die Chartering-Abteilung für Projekt- und Schwergut bei Panalpina (heute DSV). In seiner Funktion als General Manager soll er neue Märkte erschließen



**Personalie des Monats: HCOB-Chef Stefan Ermisch dankt ab**



■ **HCOB:** **Stefan Ermisch** (56), CEO der Hamburg Commercial Bank (HCOB), legt sein Mandat zum 30. September nieder. Auf den Chefposten rückt dann **Ian Banwell** (58), bislang CFO des Hamburger Geldinstituts. Sein Nachfolger wird wiederum der bisherige Bereichsleiter für Banksteuerung, **Marc Ziegner** (46). Unverändert in ihren derzeitigen Positionen verbleiben der Chief Investment Officer (CIO) der HCOB, Christopher Brody (54), sowie der Chief Risk Officer (CRO) der HCOB, Ulrik Lackschewitz (54), der auch künftig die Funktion des stellvertretenden CEO (Deputy CEO) wahrnehmen wird. Ermisch war seit Dezember 2012 im Vorstand der HCOB tätig, zunächst als Finanzvorstand, seit Juni 2016 als CEO.

■ **DUCKDALBEN:** **Jan Oltmanns**, 36 Jahre Leiter des Hamburger Seemannsclubs Duckdalben, ist am 20. August verabschiedet worden. Der Träger des Silbernen Portugalesers und des Bundesverdienstkreuzes kam 1975 zur Seemannsmission in Altona. Die Deutsche Seemannsmission Hamburg-Harburg baute gemeinsam mit Oltmanns anfang, den Seemannsclub Duckdalben aufzubauen.



■ **L.I.T.:** **Michael Borowski** wurde neben Simeon Breuer in die Führungsriege der L.I.T. Air & Sea berufen. **Robert Hennemann** führt gemeinsam mit Ingo Schreiber L.I.T. Cargo. Borowski ist seit 2018 u.a. als Operational Manager Air & Sea für die Gruppe tätig. Hennemann, über 20 Jahre dabei, verantwortete zuletzt die operativen Geschäfte und das Fahrpersonalmanagement der Cargo-Sparte.



■ **GLOBAL SHIP LEASE:** **Ulrike Helfer**, eine der beiden Vorstände der »portfoliomangement AöR«, ist von der griechischen Containerreederei GSL als Board Member angeworben worden. In der nicht-exekutiven Rolle soll sie strategisch beraten agieren. Helfer führt seit 2016 die »portfoliomangement AöR« in Hamburg für »faule« Schiffskredite der ehemaligen HSH Nordbank.



■ **TT CLUB:** **EeLain Ong** hat zum 1. August die Position des Chief Financial Officer (CFO) des internationalen Transportversicherers TT Club übernommen. Ong wurde im April 2022 zur Finanzchefin ernannt und hat den scheidenden CFO Julian Chowdhury in den letzten Monaten vor seinem Rücktritt begleitet. Chowdhury ging nach fast 30 Jahren beim TT Club in den Ruhestand.



# HANSA PODCAST

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## HANSA PODCAST Prominente Gäste im maritimen Talk



### BRAEMAR CORPORATE FINANCE

#### AXEL SIEPMANN

Der Chef von Braemar Corporate Finance kündigt im HANSA PODCAST einen Ausbau der Aktivitäten im Ausland an. Zu Hamburg, London und Singapur könnten sich Athen und New York als neue Standorte dazugesellen. Den deutschen Markt sieht Axel Siepmann dennoch positiv. Nachdem die Phase der Restrukturierung vorbei sei, könnten jetzt viele Unternehmen Kapital aufbauen. Für die anstehende Diversifizierung und Erneuerung der Flotten sieht Siepmann künftig keinen Mangel an Finanzierungen.



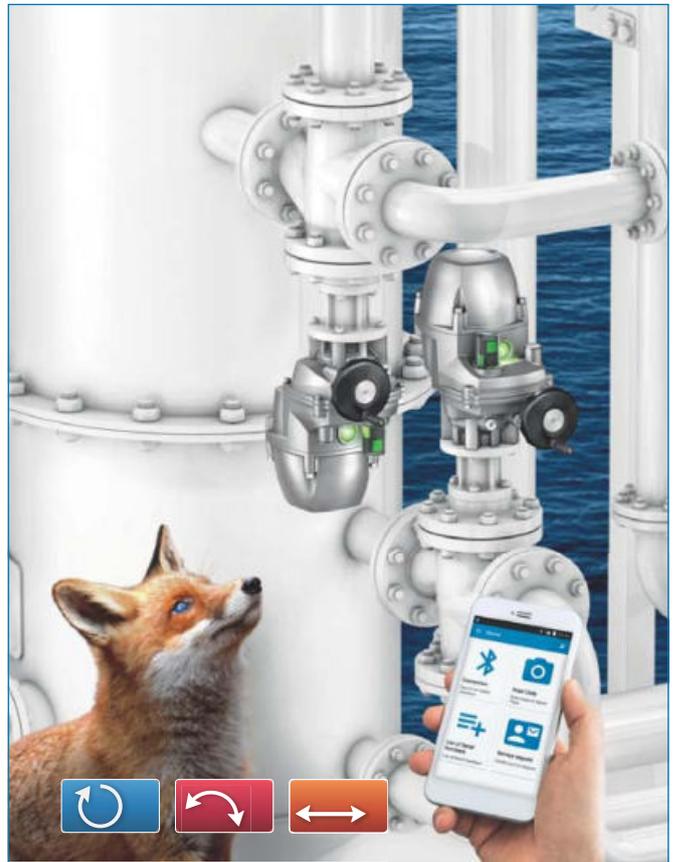
### MAN ENERGY SOLUTIONS

#### UWE LAUBER

Der CEO von MAN Energy Solutions spricht im HANSA Podcast über die Transformation seines Unternehmens in Richtung Dekarbonisierung. Power-to-X und Wasserstoff sind die Stichworte, wenn es um eine maritime Energiewende geht – und der Motorenhersteller mischt längst in diesen Bereichen mit. Lauber gibt außerdem ein Update zum Stand des Projekts Ammoniakmotor und wagt einen Ausblick darauf, welche Kraftstofftechnologien in welchem Schifffahrtssegment das Rennen machen könnten.



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# A heavy toll on dry bulk trades

Rates and earnings in dry cargo shipping came under fierce pressure in the last weeks. Weak Chinese import demand and unwinding congestion are dampening prospects

With the global economic outlook darkening and many trades constrained by geopolitical factors or inflation, dry bulk shipping has been faced with a rapid downward correction. Looking at index and earnings data in our market compass bar on the right-hand page, many readers must be rubbing their eyes: the Baltic Dry Index down by almost 38% to its lowest in almost seven months, the time charter average of 180,000 dwt caper even 67% below its level one month back. On average, capes are netting \$ 7,133 but in many trades it's much less – far below operating cost levels. Transpacific trips are currently rated at just 5,600 \$/day. More worryingly, the much longer China-Brazil round voyage (100 days) only gets a tad more at 5,740 \$, highlighting the depressed mood and expectations in the market.

Brokers and analysts see a number of negative factors converging. First of all, the iron ore and coal trades into China have been lacklustre all year. Iron ore imports are reportedly down 23 mill. to 627 mill. t in the first seven months as the ailing property and construction market dragged steel production down. Coal volumes even shrank by 60 to 138.4 mill. t. In this case,

the »culprits« are increased hydropower and domestic coal mining in China. Secondly, port congestion in dry bulk shipping has begun to unwind rapidly recently. Clarkson Research estimates that excess port congestion (due to the pandemic) decreased from 5.5% of world dry bulk fleet capacity in Q1 to just 0.9% in August. »In other words, around 4.5% of the fleet has returned to active operation, implying that capacity utilization has decreased from 92% in May to 87.5% presently,« it reports. Significant new business for the largest bulkers in unusual trades such as coals from Indonesia to India was not enough to offset the sudden rise in tonnage availability due to waning congestion.

## Little cheer in the Atlantic

Panamaxes, supramaxes and handysize bulkers started facing headwinds in the spot market simultaneously although losses for them are less dramatic ranging between 15% and 20%. Activity for panamaxes in the Atlantic has been stubbornly low for weeks, according to brokers. Grain volumes on the East Coast of South America are described as steady at moder-

ate levels. What is more puzzling is the lack of minerals business – especially coals in the North Atlantic. There are no quick explanations at hand other than the fact that extremely low water levels on the Rhine and high stocks in the ARA port range may have deterred charterers from buying more cargoes, brokers say. In reality, importation of steam coal should be increasing as European countries struggle to fend off energy shortages. Further, Russia should be exporting more of its coal ex Baltic Sea to destinations further afield since the EU ban on Russian coal took effect on 10 August. Positive ton mile effects remain elusive so far.

A small silver lining emerged for supramaxes in mid-August when partial export bans on miners in Indonesia caused a bit of a rush. Chinese and Indians reportedly ramped up their volumes from those miners still open for business to pre-empt shortfalls, thus causing a mini spike in freights on routes from Indonesia. Elsewhere, trade volumes for the geared ship types seemed to subside.

London broker SSY highlighted export restrictions on both steels and iron ore in

## VIEWPOINT

### »A leap into the dark«

2023 will see the introduction of the EEXI (Energy Efficiency Existing Ship Index) and CII (Carbon Intensity Indicator). The former requires ships to satisfy technical requirements to reduce emissions, the latter stipulates operational measures (speed, routing etc.) to the same end. Francesco Tassello, Oil & Tanker Analyst at London shipbroker Affinity, calls on shipowners and charterers to clarify their responsibilities under the new regulation.

*Only a couple of months to go until EEXI/CII enter into force. How is it going to impact markets from next year?*

**Francesco Tassello:** The new regulation

is the biggest »leap into the dark« for shipping since the IMO's implementation of the sulphur regulations of 2020. There is still a large scale of conflicting opinions and many uncertainties, which in the case of IMO 2020 proved largely unfounded, it turned out. Today, few believe that, in the case of EEXI and CII, any major shifts will occur after the regulation has come into force, considering the lack of penalties to deter non-compliance. All that is required for a ship with an insufficient rating of »D« for three consecutive years, or »E« in a single year, is to submit a corrective action plan to ensure compliance with the minimum »C« threshold going forward.

### *How are owners and operators prepared?*

**Tassello:** Although many owners have adopted a wait-and-see approach, we be-



Francesco Tassello – Oil & Tanker Analyst  
Affinity (Shipping) LLP

© Affinity / Tassello

lieve that most tankers, bulkers, container ships and very large gas carriers are

## Orders & Sales – Container Ships

**New Orders** – Is it the summer break which effects business activity or are shipowners becoming more cautious? And what does that tell us about their rate expectations? Anyway, the newbuilding market has become quieter. Brokers report an order from CMA CGM – the French are said to have ordered six 15,000 TEU units with dual-fuel methanol propulsion in China. Also Korean regional carrier Namsung has ordered two more 2,500 TEU vessels from Hyundai.

**Secondhand Sales** – The Second-Hand market has also seen low activity recently. Akkon Lines from Turkey acquired the »A2B Independent« from A2B in the Netherlands – a 658 TEU ship, built as »Antje Russ« in 1998 at the now bankrupt Sietas shipyard in Hamburg. After Maersk, industry leader MSC has also recently secured tonnage from the former fleet of Norddeutsche Reederei H. Schuldt. The Shanghai 3500-type »Northern Decision« is changing hands. MSC is reportedly paying 44 mill. \$ for the ship, which was built in 2008.

**Demolition Sales** – No demo news.

India due to domestic shortages as a major drag on handies and supras in the region. From China, fertilizer and steel export volumes were missing, causing rising pressure on backhaul charter rates which had been extremely strong throughout the first half of the year. Meanwhile, positive effects from the resumption of Ukrainian grain shipments – another staple trade for handies – are still thin on the ground. More geared bulkers are heading into the region but overall volumes remain low due to the high risks and costs involved. This is borne out by current readings of the Baltic index route for 58,000 dwt ships from Canakkale via

the Black Sea to the Far East at around 19,800 \$/day, far below its year-to-date average of \$ 24,000.

The weakness in the geared bulker segment has also begun to affect larger multipurpose vessels who compete neck-and-neck with handy bulkers for certain cargo stems. Last done fixtures for large 28,000–32,000 dwt mpp ships in Asia were still at just over 30,000 \$/day in July but levels are now correcting down, according to brokers. Much weaker levels are reported for the Atlantic where 30,000 dwt tween-deckers are said to be struggling to generate interest even at reduced rates of low/mid \$ 20,000's. *mph*

positioned in the »C« band or higher on the CII. Just about 30 % of tankers, 25 % of bulkers and container ships, and about 10 % of very large gas carriers might fall in the »D« or »E« bands in 2023. Rating thresholds will become increasingly stringent, though, as we approach the 2030 IMO deadline for a 40 % emissions reduction in shipping.

In the container ship sector, slow steaming could be the most obvious potential solution for ships in the lower rating bands to achieve CII compliance.

### Is it going to change chartering practice in the short or in the long run?

**Tassello:** There are legal issues to be dealt with in present time charter contracts extending beyond 1 January 2023: which party will be responsible for compliance and the associated cost

of compliance? Owner or charterer? For clarification there might be more new clauses both for time and trip charters in the near future.

As things stand, owners are primarily responsible for ensuring EEXI compliance with MARPOL, provided the flag state is part of MARPOL. Any necessary technical modifications will be part of owners' seaworthiness obligations.

CII is more complicated. There could be conflicts of interest. What if charterers' lawful employment orders affect the CII rating in a negative way? Or vice versa, if owners resort to slow steaming, route deviation or reduction of cargo capacity to protect CII compliance against charterer's order? This could put them in breach of charter and make them liable to penalties.

*Interview: Michael Hollmann*

## Container ship t/c market



Month on Month 3,060 ↓ -6.0 %

## Container freight market

WCI Shanghai-Rotterdam	8,430 \$/FEU	-7.3 %
WCI Shanghai-Los Angeles	6,521 \$/FEU	-10.5 %

## Dry cargo / Bulk

Baltic Dry Index	1,320	-37.7 %
------------------	-------	---------

## Time charter averages / spot: \$ / d

Capesize 5TC average	7,188	-67.3 %
Panamax 5TC average (82k)	15,738	-14.7 %
Supramax 10TC average (58k)	18,681	-18.1 %
Handysize 7TC average (38k)	17,424	-20.1 %

## Forward / ffa front month (Sep'22): \$ / d

Capesize 180k	13,154	-44.2 %
Panamax 82k	16,404	-22.5 %

## MPP



12,500 tdw MPP/HL »F-Type« vessel for a 6–12 months TC

## Tankers

Baltic Dirty Tanker Index	1,547	+5.5 %
Baltic Clean Tanker Index	1,343	+1.3 %

## Shortsea / Coaster

Norbroker 3,500 dwt earnings est. €	4,000	-4.7 %
HC Shortsea Index	33.13	-1.7 %
BMTI/EUSSIX Inter-Black Sea (\$/t)	39.42	-9.5 %

Norbroker: spot t/c equivalent assessment basis round voyage North Sea/Baltic; HC Shipping & Chartering index tracking spot freights on 5 intra-European routes; BMTI/EUSSIX: 3,000 t Odessa to Sea of Marmara

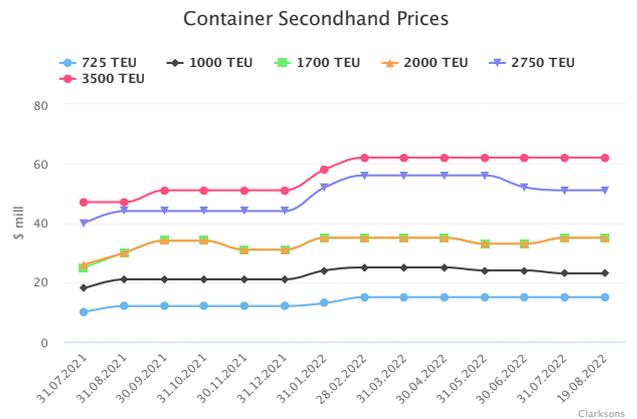
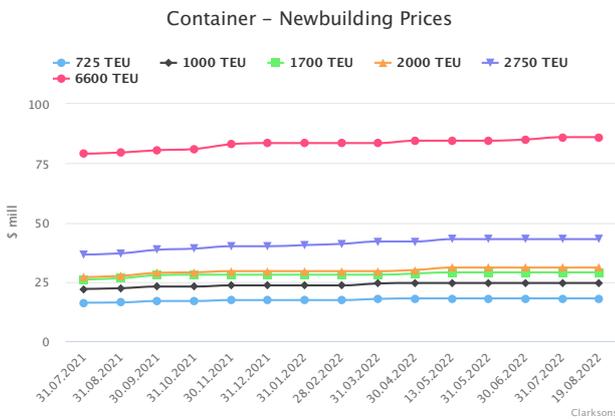
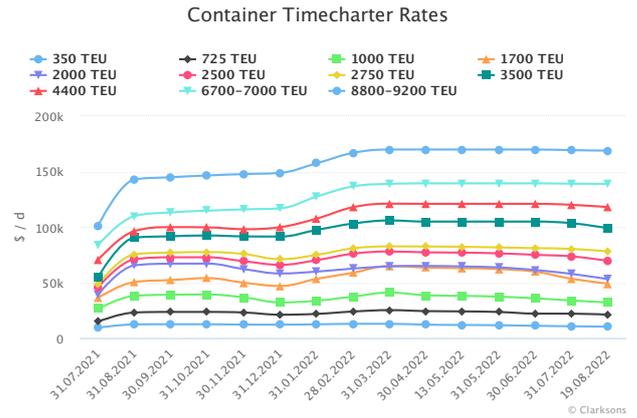
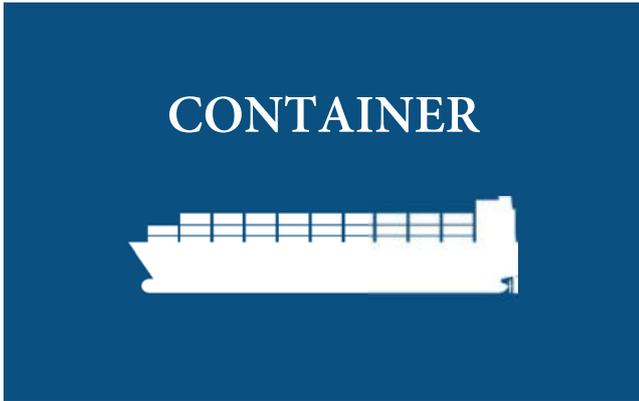
## Bunkers

VLSFO 0.5 Rotterdam \$ / t	715	-9.4 %
MGO Rotterdam \$ / t	1,036	-4.1 %

## Forward / Swap price Q4/22

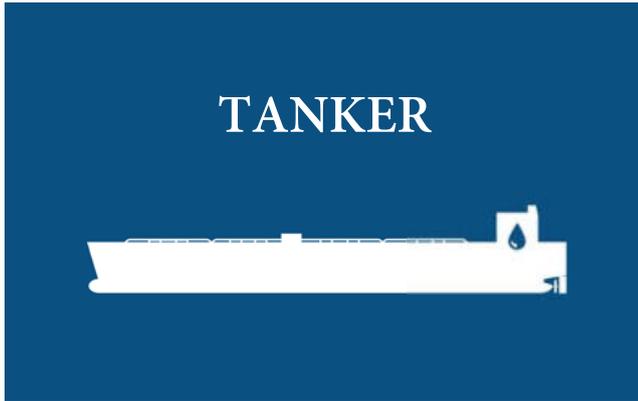
VLSFO 0.5 Rotterdam \$ / t	627	-4.5 %
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Data per 18.08.2022, month-on-month

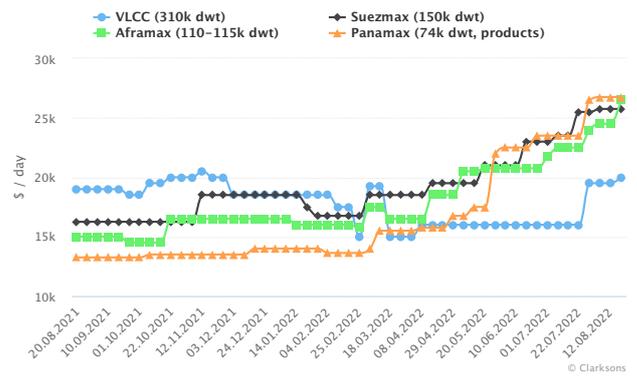


CONTAINERSHIPS FIXTURES (PERIOD)									
VESSEL	YEAR	TEU	REEFER	DESIGN	GEAR	PERIOD	REGION	CHARTERER	\$/d
<b>POST-PANAMAX</b>									
no fixtures reported									
<b>PANAMAX   WIDE BEAM</b>									
Dalian	2009	4,253	400	Samsung 4250	N	3 y	Far East	ONE	48,000
<b>SUB-PANAMAX</b>									
no fixtures reported									
<b>HANDY / FEEDER</b>									
Tiger	2005	2,474	550	VWS 2500	Y	12 m	Far East	Rongsheng	70,000
Insight	2018	1,714	421	Wenchong 1700 Mk II	N	6 m	Far East	IAL	50,000
Ela	2012	1,696	300	Wenchong 1700	Y	2-3 m	Far East	Cosco	69,000
Cape Flores	2005	1,200	150	Peene 1100	N	11-13 m	Far East	Vasi	35,000
He Sheng	2002	1,096	200	Stadt 1100	Y	8-10 m	Far East	Sinokor	37,000
Padian 3	1998	1,032	100	Imabari 1000	N	6-7 w	Far East	Wan Hai	34,000
Ortolan Epsilon	2008	987	160	Dae Sun 1000	N	2 m	Far East	Taichang	41,000
Progress	2008	908	150	Bestway 908	N	4-5 m	Far East	Wan Hai	32,000
Xiang Ren	1997	650	108	Hakata 600	Y	6-7 m	Far East	Dongyoung	30,000

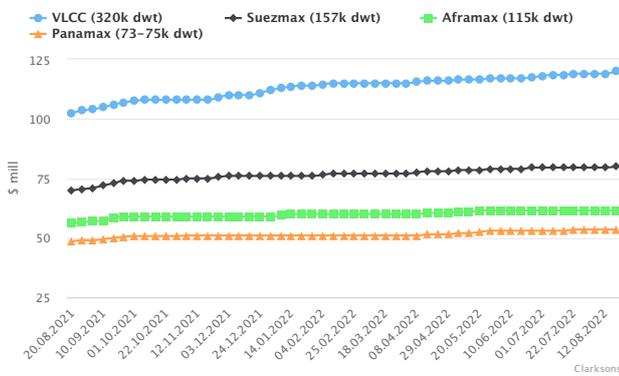
y = year, m = months, d = days



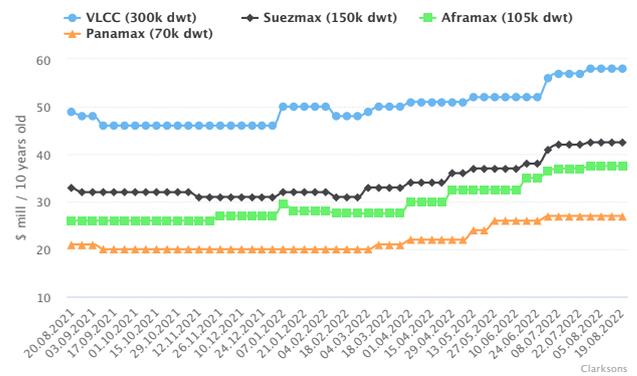
Tanker – Time Charter Rates



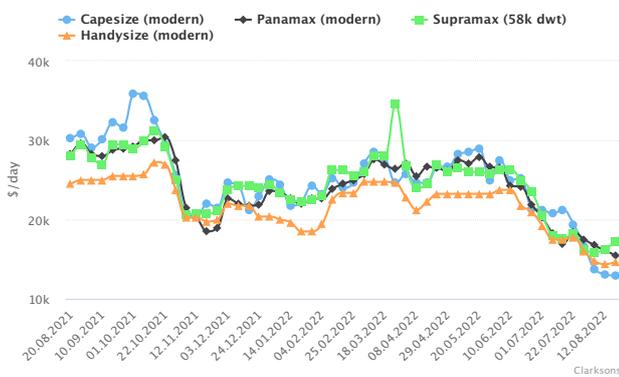
Tanker – Newbuilding Prices



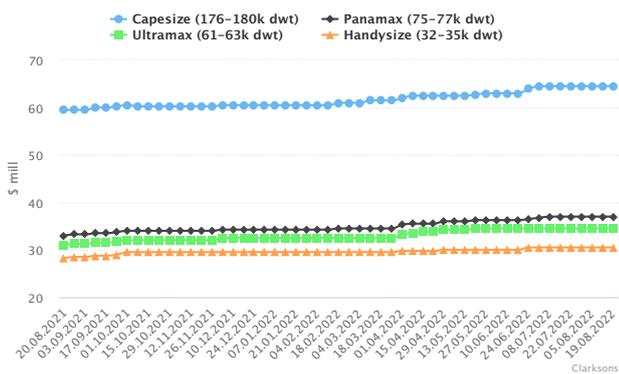
Tanker – Secondhand Prices



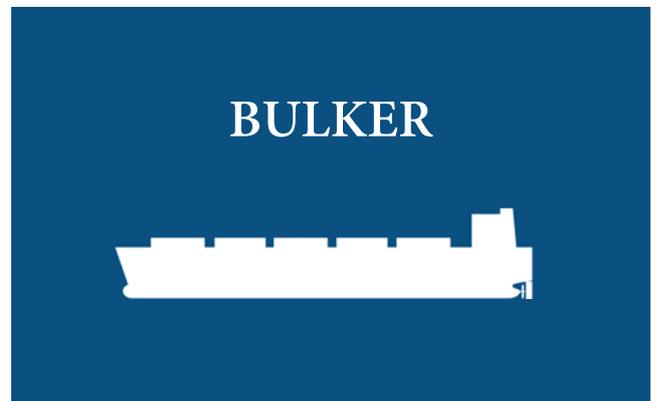
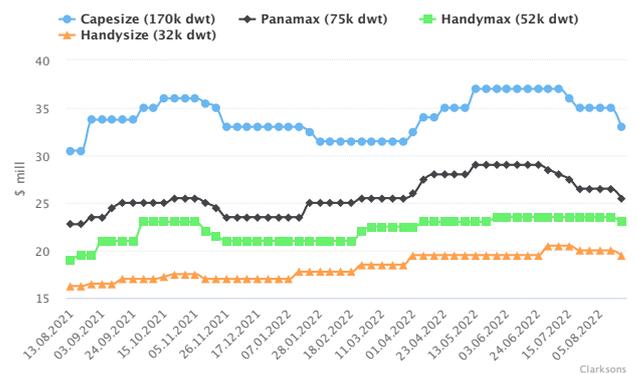
Bulker – Time Charter Rates



Bulker – Newbuilding Prices



Bulker – Secondhand Prices



# Blockchain hält Einzug am Seeplatz Hamburg

Der erste digitale Marktplatz für Waren- und Seekasko-Deckungen in Hamburg soll ab Januar in Betrieb gehen.  
Von Michael Hollmann



**B**lockchain statt Börsensaal: Mit einem elektronischen Marktplatz für Ausschreibung und Platzierung von Risiken will die Hamburger Versicherungsbörse e. V. (HVB) zu alter Größe zurückfinden. Im Mittelpunkt steht dabei komplexes Firmenkundengeschäft – vor allem Warentransport und Seekasko – bei dem es in der Regel um hohe Deckungssummen im dreistelligen Millionenbereich mit vielen Beteiligten geht.

Rund drei Jahre ist es her, dass der Vorstand die Idee präsentierte. Am 1. Januar soll es so weit sein. Wie die HVB auf dem Norddeutschen Versicherungstag nun ankündigte, geht dann das erste von drei Modulen des »digitalen Ökosystems« an den Start. Das »Social Network« bietet zunächst nur die Möglichkeit für Kontaktaufnahme, Austausch und Informationen, wie man es etwa von LinkedIn kennt. Anfang April soll es ans Eingemachte gehen mit der Inbetriebnahme des »digitalen Handelsplatzes«.

Die Blockchain-basierte Plattform bietet der HVB zufolge Maklern die Möglichkeit zur Ausschreibung von Risiken. Assekuradeure und Versicherer sollen ihre Gebote elektronisch übermitteln und Abschlüsse nach weiteren Verhandlungen rechtsicher und in Echtzeit durchgeführt werden können. Typische Risiken könnten zum Beispiel Fruchtverladungen von Südamerika nach Hamburg, laufende Umsatzpolicen für große Exporteure oder Kaskodeckungen für Schiffsflotten sein. Für solche komplexen Geschäfte werden in der Regel noch Dienstleister wie Anwälte, Sachverständige und andere Spezialisten benötigt. Zur Anbindung dieser Gruppe ist im Laufe des nächsten Jahres das dritte Modul »Additive Services« geplant.

Von der sozialen Netzwerkfunktion, die den Auftakt bildet, verspricht sich die HVB-Vorsitzende Svenja Richartz eine »Ab-

senkung der Eintrittshürden« in dem Geschäft. Vor allem für Marktteilnehmer, für die Transport und Schifffahrt nur eine von vielen Risikoklassen bildet, sei es bislang nicht leicht, sich auf dem Laufenden zu halten: Wer sind passende Risikoträger? Wer ist offen für Neugeschäft, wer nicht? Welche Köpfe sind zuständig?

Auf dem digitalen Handelsplatz können dann Risiken sowohl für Führungs- als auch für Beteiligungsgeschäft mit den nötigen Mindestangaben inseriert werden. Der Kreis der Adressaten soll dabei beliebig skalierbar sein. »Mittels Blockchain ist jederzeit nachvollziehbar, wer welche Informationen erhalten hat«, erklärt Richartz. Gemäß den Markt-Usancen werde auch die sogenannte 48-Stunden-Regel, die den Kunden eine vorläufige Deckung bis zum endgültigen Abschluss einräumt, auf der Plattform abgebildet.

Wenn der Plan aufgeht, übernimmt die HVB wieder eine tragende Rolle als Marktplatz für Platzierungen, nachdem der Präsenzhandel im Börsensaal vor ein paar Jahren eingestellt wurde. Auch ihre Funktion als Schiedsstelle könnte damit neu belebt werden. Genutzt werden soll das digitale Ökosystem auch von Maklern und Versicherern außerhalb Hamburgs. In diesem Zusammenhang plant der Vorstand eine Abstimmung über die Umbenennung

der HVB in »Hanseatische Versicherungsbörse«.

Zugangsvoraussetzung für den Digitalmarktplatz sei auf jeden Fall eine HVB-Mitgliedschaft. Derzeit zählt der Verein 57 Mitglieder. »Die kritische Masse ist bereits vorhanden, um das Projekt auf die Bahn zu bringen. Hamburg ist größter Maklerstandort, alle Versicherer sind zumindest mit Transportabteilungen vertreten«, so Richartz. Für Hamburg biete sich damit die Chance, auch international eine noch größere Rolle in der Transport- und Schiffsversicherung einzunehmen, etwa gegenüber dem viel größeren Wettbewerber Lloyd's of London. Dort dienen die digitalen Funktionen in erster Linie der nachträglichen Dokumentation, nicht aber der Anbahnung von Geschäft in einem Detailgrad, wie es die HVB plant, heißt es.

Offen ist bislang die Höhe der Jahresgebühr für die Nutzung der Plattform. Die Kosten könnten durch Inanspruchnahme von Fördermitteln noch gesenkt werden. Wahrscheinlich laufe es auf einen niedrigen vierstelligen Beitrag pro Jahr hinaus, der in »einem vernünftigen Verhältnis zu den sonstigen IT-Kosten« stehe, so Richartz. »Das System muss sich selbst tragen können. Wir wollen Gewinn erwirtschaften, sondern einen Mehrwert bieten.« *mph*



Die Vergangenheit: Präsenzhandel im Börsensaal der Handelskammer

## Abstract: Hamburg insurance market plots its digital future

HVB, Hamburg's insurance exchange, plans to roll out its new digital market place from 2023, including a social network function, a blockchain-based tendering tool and additional services. The offer is primarily aimed at complex risks, mainly in the marine segment. In parallel, HVB is discussing a change of name to »Hanseatic Versicherungsbörse« and opening up for members elsewhere in Germany and abroad.



## Havariechronik

Datum	Ereignis	Ort	Schiff	Type	dwt	Flagge	Haftpflicht	Reise
1	26.07. Brand	Eemshaven	Nova	General Cargo	10.649	Antigua & Barbuda	Gard	k.A.
2	31.07. Gekentert	Tokuyama	Maya	Containerschiff	1.680	Japan	k.A.	k.A.
3	02.08. Brand	vor Shanghai	Wen Feng 18	Bulker	26.800	China	k.A.	Küstenverkehr China
4	08.08. Brand   300 TEU beschädigt?	vor Colombo	ZIM Charleston	Containerschiff	102.518	Hongkong	North P&I	Fernost   Indien
5	08.08. Auf Grund   LOF+Scopic invoked	Lubukutung	Vitahorizon	Bulker	74.483	Liberia	UK P&I	Indonesien   China (?)

Den kompletten Überblick zu allen aktuellen Havarien gibt es unter [www.hansa-online.de/havariechronik/](http://www.hansa-online.de/havariechronik/)

### GETREIDE-ABKOMMEN

## Ukraine-Anläufe wieder versicherbar

Die Getreidevers Schiffungen aus der Ukraine nehmen Fahrt auf, allerdings zu hohen Versicherungskosten. Marktinsidern zufolge liegen die Preise für die Kriegsversicherung der Schiffe (Kasko/P&I) für Reisen zu den ukrainischen Schwarzmeerhäfen per Mitte August bei 2,5% des Schiffswerts, Minimumprämie: 50.000 \$. Die Deckungen gelten für sieben Tage. Sofern es nicht zu einem Schaden kommt, können die Reeder im Anschluss bis zu 50 % der Prämie als »No Claims Bonus« zurückerstattet bekommen. Laut dem Getreide-Abkommen zwischen Russland und der Ukraine unter Vermittlung der Türkei und der UNO wurden Schifffahrtskorridore von und zu den drei ukrainischen Häfen Odessa, Tschornomorsk und Juschne eingerichtet. In der ersten Augushälfte wurden laut Joint Coordination Centre der UNO in Istanbul 36 Schiffspassagen für Getreide, andere Nahrungsmittel und Düngemittel genehmigt – 21 ausgehend, 15 eingehend.

Für die Versicherung der Ladungen haben der Makler Marsh und das Lloyd's-Syndikat Ascot ein Produkt mit Deckungs-

summen bis 50 Mio. \$ aufgelegt. Der Versicherer Hiscox ist Beirichten zufolge in Gesprächen für den Aufbau eines anderen Konsortiums für Ukraine-Transporte involviert.

Andere Versicherer sind vorsichtiger. Ein deutscher Zeichnungsagent zeigte sich gegenüber der HANSA besorgt, dass die Lage schnell wieder kippen könnte: »Dann haben wir die gleichen Probleme wie vorher mit festsitzenden Schiffen und Mannschaften. Nur dass es dann andere als vorher sind.«

Entspannter wird die Risikolage in den Häfen im Grenzgebiet zwischen der Ukraine und Rumänien entlang der Donau beurteilt. Schon seit Anfang Mai wird von einer erhöhten Umschlagaktivität für Getreide in kleineren Häfen wie Reni (Ukraine) und Sulina (Rumänien) berichtet. Dort können aber nur kleine Shortsea-Schiffe abgefertigt werden. Die Preise für Kriegs-Seekasko-Deckungen sollen in solchen Fällen bei 1 % des Schiffswerts liegen, Minimum: 25.000 \$. Rückerstattungen bei schadenfreiem Verlauf gibt es hier nicht. ■

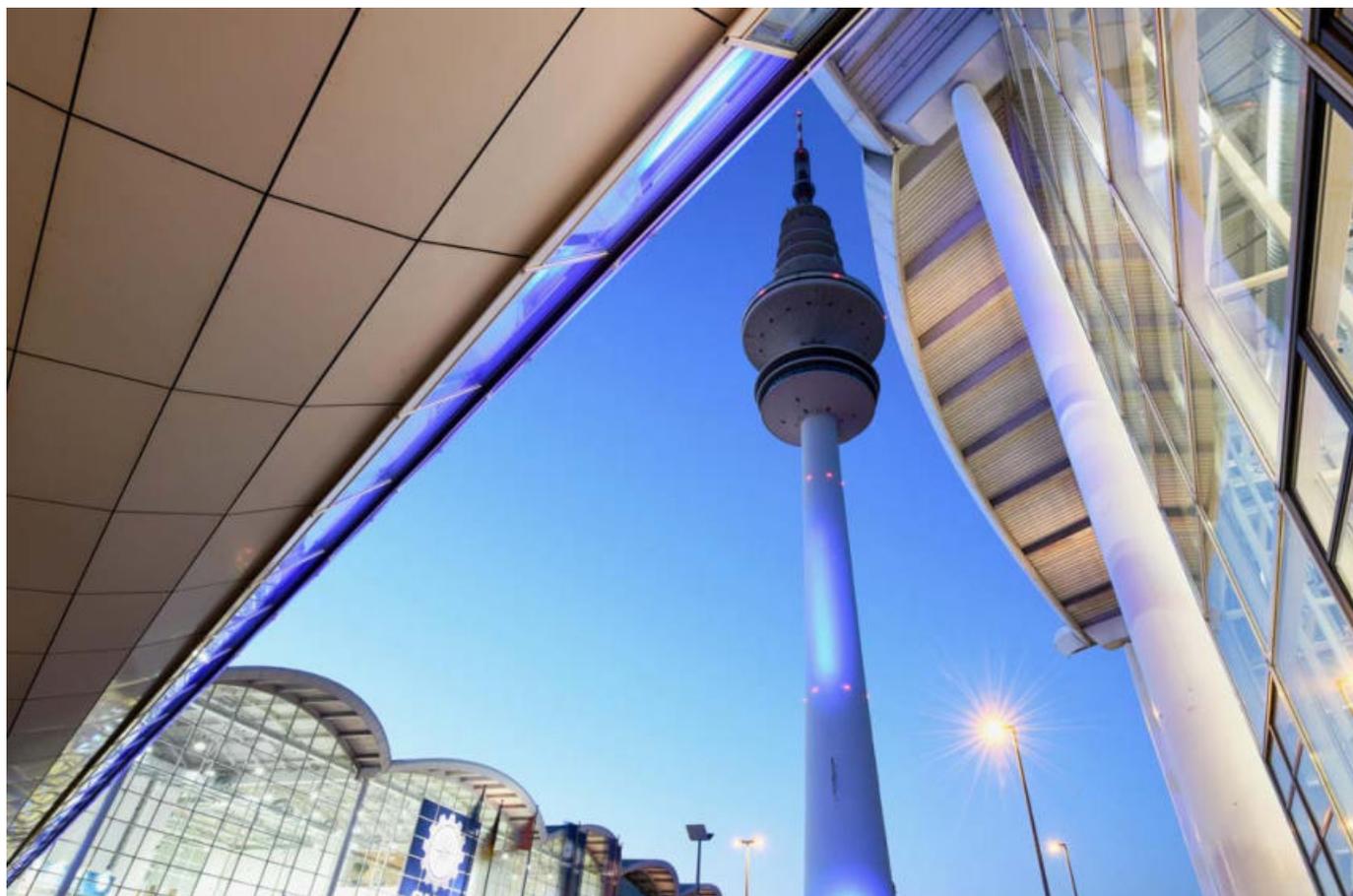
+++ **Telegramm** +++ **Telegramm** +++ **Telegramm** +++ **Telegramm** +++ **Telegramm** +++ **Telegramm** +++ **Telegramm**

Swedish Club in Singapur: P&I-Versicherer hat zweite Niederlassung in Asien neben Hongkong eingerichtet. Neuer Standort soll alle Servicefunktionen von Underwriting über Schadenbearbeitung bis Beratung anbieten. Fünfköpfiges Team unter Leitung von Brian Png (ex-Swedish Club Hongkong). +++ MARIN-Institut liefert erste Ergebnisse aus Forschungsprojekt »Top Tier«: Rechenmodell für Risiken für parametrisches und synchrones Rollen zum Download <https://www.marin.nl/en/jips/toptier>. Projekt wurde als Reaktion auf große Containerverluste aufgelegt. +++ Ergo steigert Einnahmen bei Transport: Tochter der Munich Re erzielt in H1 25 % Wachstum auf 166 Mio. € bei Prämieeinnahmen. +++ AGCS fährt Gewinn hoch: Spezial- und Transportversicherer der Allianz Group steigert Betriebsergebnis in H1 auf 290 Mio. € (1H Vj: 179 Mio. €). Prämieeinnahmen um 11 % auf 5,7 Mrd. € angewachsen, kombinierte Schaden-Quote von 97,8 auf 95,1 % verbessert. +++ NNPC baut Online-Dienste aus: Noord Nederlandsche P&I Club nimmt in Kürze Kundenportal »My NNPC« in Betrieb. Tool bietet Einblick in Policen und Status von Schäden sowie Austausch von Zertifikaten, Gutachten und Rechnungen.

Leute, Leute... **Chaucer Group**: Head of Marine Global Philip Graham hat dem Vernehmen nach Rücktritt eingereicht. +++ **Marine Assekuranz**: Stephan Wacker (Ex-Georg Duncker) neu im Underwriting-Team. +++ **West of England**: Gina Panayiotou (Ex-Intership Navigation, Ex-Michael Kyprianou) als Leiterin für Environmental, Social and Governance (ESG) eingestellt. +++ **TT Club**: EeLain Ong (Ex-Deutsche Post DHL) folgt als CFO auf Julian Chowdhury. +++ **Markel International**: Zwei neue Underwriter für Marine ernannt – Zita Fok (Ex-Willis) in Hongkong und Dawn Soh (Ex-QBE) in Singapur.

# Meeting place for the maritime industry

2,000 exhibitors and around 40,000 visitors from more than 100 countries are expected by the SMM organisers from 6 to 9 September in Hamburg. Digitalisation and decarbonisation are the trend topics of this year's edition of the trade show



The industry meets again in Hamburg for the first time since 2018

Whether it is about digital or green innovations, SMM is due to the organisers, Hamburg Messe und Congress (HMC) the perfect stage. From 6 to 9 September 2022, it will be the meeting place for representatives of shipping companies, suppliers, shipyards and scientists to share views and ideas, expand their networks and do business.

»Ellen« has set a new world record, travelling as much as 92 km on a single battery charge. »This is the longest distance an electric ferry capable of carrying both passengers and vehicles has travelled anywhere in the world,« says Henrik Hagbarth Mikkelsen, Senior Lecturer at Marstal Naval Academy, who was involved in the development of the ferry. The drivetrains and propulsion engines

were supplied by the Danish company Danfoss, while the two fixed-pitch propellers were made by Piening Propeller. The battery packs – the world's largest, with a capacity of 4.3 MWh – were provided by the Swiss battery specialist Leclanché. These are just three of the roughly 2,000 international exhibitors represented at SMM where the industry's who-is-who will gather, the HMC says.

## Sustainable technologies

This will be the 30th edition of the leading international maritime trade fair, an event which keeps reinventing itself: »This year we will be offering even more opportunities for networking, and a wider selection of free content. For the

first time SMM participants will be able to present their knowledge or product novelties on so-called Transition Stages,« says Claus Ulrich Selbach, Business Unit Director – Maritime and Technology Fairs & Exhibitions at HMC. The themes these stages highlight reflect the SMM motto »Driving The Maritime Transition«: One stage will be dedicated to alternative propulsion systems, environmental technologies and sustainability, another one will focus on automation, digitalisation and data management. The third stage will address interior design, outfitting and technologies for passenger ships as well as challenges and opportunities facing the cruise industry. »Following the speeches and presentations, our new networking format »It's wine

o'clock» will provide a relaxed environment for exhibitors and visitors to share thoughts and views,« Selbach adds.

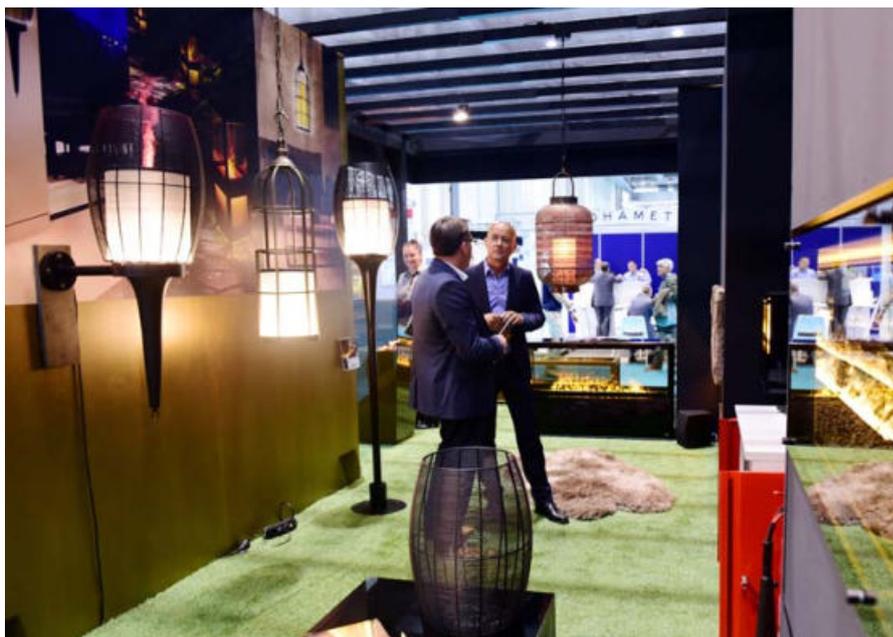
This is exactly what makes SMM special, believes Knut Ørbeck-Nilssen, CEO Maritime at DNV: »It is a place to inspire and be inspired, coming face-to-face with the individuals, technologies and services that will write the next chapters in the story of how we conduct responsible commercial activity within the ocean environment.«

### Exploring new terrain

Hapag-Lloyd is a company that is constantly looking for new inspiration and more sustainable solutions. »For us, SMM is the ideal platform to get a complete overview of the latest technical innovations and to meet important suppliers from all over the world«, says Richard von Berlepsch, Managing Director Fleet Management. The world's fifth-largest liner company enjoys a reputation as green pioneer. For example, Hapag-Lloyd was one of the early movers in installing scrubbers and converting ships to liquefied natural gas (LNG). Their latest innovation: Sensors fitted to containers. In a global first, the Hamburg-based shipping company is installing transponders on its entire fleet of containers to allow early detection of supply chain disruptions. »We anticipate being the only ones doing so for at least one year,« says Hapag-Lloyd Director Container Applications Olaf Ha-



IMO's Secretary General Kitack Lim (left) is also expected to be at SMM this year. Pictured here with Ulrich Selbach



For the first time, Marine Interiors is part of the SMM fair

bert. During the Maritime Future Summit on 5 September – co-organised by HANSA – Chief Information Officer (CIO) Donya-Florence Amer will introduce the SMM community to the company's digital strategy.

Automation is the focus of Rolls-Royce's digitalisation efforts. The leading maritime technology company has developed a new ship automation portfolio. »We are the world's only supplier of ship propulsion systems to offer an electronic platform for monitoring and controlling the entire ship – our mtu NautIQ,« says Denise Kurtulus, Vice President Global Marine at Rolls-Royce Power Systems. »This platform makes system integration much easier for our customers.« The German Navy relies on this innovative technology: Damen Naval will install it in the new F126 frigates.

Rolls-Royce has been one of SMM's most faithful exhibitors. But apart from well-established market leaders, SMM also attracts start-ups, such as OneWeb, one of this year's first-time exhibitors. The British communications infrastructure company focuses on enhancing the network integration of ships by improving satellite connectivity. »SMM really attracts a very wide spectrum of companies from all segments of the maritime market, and we are looking forward to making contact with partners and customers during the event,« says Carole Plessy, Head of Maritime at OneWeb.

### Marine Interiors meets SMM

After a global ban on cruises was imposed in April 2020, cruise ships around the world have now resumed operation – and the demand is strong. For the first time this year, the leaders of the passenger ship building sector will meet on European soil in the Marine Interiors area @SMM from 6 to 9 September 2022. A broad spectrum of exhibitor stands will be supplemented by a redesigned conference programme.

There is hardly an industry that has suffered more severe setbacks because of the coronavirus pandemic than the cruise sector. In 2020 alone, it recorded losses of around 77 billion US dollars, according to the Cruise Lines International Association (CLIA). Now the steel giants are steaming across the oceans again, and spirits are high. »We are very confident about the summer season,« says Jörg Rudolph, General Manager of Costa Cruises. The bookings received so far exceed the 2019 pre-pandemic level, he adds. An optimistic outlook shared by luxury cruises and expeditions specialist Hapag-Lloyd Cruises: »We can sense how much our guests are longing to travel,« says speaker Karen Schmidt.

As for the ship operators, they are busy upgrading their fleets. After selling or scrapping many of their older assets over the past two years, they are now placing many orders for new tonnage. The global order book lists around 70 new cruise



HMC's CEO Bernd Aufderheide at MS&D 2018

ships deliverable up until 2027. This raises suppliers' hopes for many lucrative equipment orders. The Marine Interiors area @SMM offers maritime companies a perfect stage for their presentations to potential customers.

De Wave Group, Eumar Design, Kaefer Schiffsausbau, Lethe, Naval Interior or Rheinhold & Mahla – these are just a few of the well-known companies which will be exhibiting at the event. Shipbuilding meets design and style: more than 90 ex-

hibitors will showcase innovative products and solutions in Halls B5 and B6. The Cruise & Ferry Route will guide visitors specifically to stands of suppliers to the cruise and ferry market. »The Marine Interiors area @SMM is unparalleled. No other trade fair anywhere in the world gives so many suppliers an opportunity to interact with leading cruise operators and passenger ship builders. Whether Carnival, Royal Caribbean, Fincantieri or Chantiers de l'Atlantique, they all come to us. The fact that Marine Interiors will occupy a section of its own at SMM this year further increases this added value,« says Claus Ulrich Selbach.

### »Protecting The Seven Seas«

At the SMM numerous exhibitors will showcase technology innovations geared towards the needs of naval forces. In parallel with the exhibition, experts and high-ranking officials of international navies, the industry and international organisations will meet at the security conference MS&D to discuss defence challenges, technology developments and cybersecurity under the leitmotif »Protecting The Seven Seas«.

There is war in Europe: A sad reality for several months now. Military conflicts not only take place on land and in the air but increasingly on the water, as

well – with far-reaching consequences: »This war is another heavy blow to the global economy, and that includes international shipping, logistics chains and ports. Many ships are stuck in the Black Sea, their crews unable to tell when they might be able to continue their voyages. Parts of the sea region are full of mines. The port city of Mariupol is destroyed, and Odessa has again been the target of massive Russian attacks,« said Bernd Aufderheide, President and CEO of Hamburg Messe und Congress, at the SMM advance press conference. The 30th edition will welcome the Who's Who of the maritime world to Hamburg again. At MS&D, the International Conference on Maritime Security and Defence held in conjunction with SMM, the discussion will focus on questions of defence policy and equipment for naval forces. At the trade fair, many exhibitors from the shipbuilding and supply segments will showcase innovations of interest to the military.

As the current international situation shows, global free trade is increasingly exposed to risks. The protection of sea routes for international commercial shipping is the subject of the keynote presented by Martin Kröger, Managing Director of the German Shipowners Association (VDR), at the beginning of MS&D. General (retd.) Egon Ramms, former

## TAMM MEDIA

### Meet HANSA at SMM

The trade magazine HANSA, which belongs to Tamm Media, is also an exhibitor at this year's SMM. Together with its sister publications, it will present itself to the numerous visitors there.

The »HANSA International Maritime Journal« is the leading maritime publication in combination with the widest-reach online presence for shipping and shipbuilding in Germany. With a monthly print circulation of 3,855 copies and an online reach of 80,000 page impressions per month, HANSA competently and seriously informs all experts and managers in the maritime industry.

During the SMM the HANSA magazine is also the co-organiser of the Maritime Future Summit on 5 September.

At the SMM-stand HANSA presents itself together with the magazine Binnenschifffahrt, also published by Tamm Media.



The magazine covers all topics around inland navigation. In addition, there will be the publications of the Mittler Report Verlag, belonging to Tamm Media as well. Among other things, they will present its

magazines Marineforum and European Security & Technology.

The Tamm Media portfolio at the exhibition is rounded off by the extensive book programme. ■

Commander of the Allied Joint Force Command and one of the highest-ranking German officers in NATO, will outline the political and military lessons to be learned from the Ukraine war to date. But Ukraine and its ports on the Black Sea are by no means the only political hotspots in the world, a fact underlined by the MS&D leitmotif: »Protecting the Seven Seas«. Around the world many nations are responding to the new security situation by increasing their defence expenditures substantially.

### Arms buildup in the Far East

One of the panels of this year's MS&D will address maritime security in the Indo Pacific region where maintaining low-friction relations between nations is considered as a major challenge. The Chinese government is continuously increasing its military spending at rates exceeding the country's economic growth. Military expenditures in 2021 were at roughly 293 bn \$ dollars. China aspires to replace the United States as the strongest military power by 2049. On the water, the People's Republic is already in the lead: »Between 2014 and 2018, China added naval ships equivalent to the total tonnage of the UK's Royal Navy or the entire Japanese naval fleet to its already considerable navy,« said Sarah Kirchberger, Head of the Department for Strategic Development in Asia-Pacific at the Institute for Security Policy at Kiel University. »This naval armament policy is practically unequalled in history.« In her speech, Kirchberger will explore the objectives and potential of the Chinese navy.

China's massive military investments are giving rise to worries among neighbouring countries, prompting them to strengthen their ties among each other. For example, Australia and Japan agreed a security cooperation as early as 2007. Joint exercises between the Japan Maritime Self-Defence Force and the Royal Australian Navy have reinforced their relations. The goal is to pave the way for peace and stability in the Indo Pacific region, the Japanese foreign ministry has said. The German navy's ability to cooperate with East Asian navies on securing key shipping routes was demonstrated recently when the frigate »Bayern« participated in a large manoeuvre of the Japanese navy. Deep Sea Captain Rtd. Joachim Gutow will ex-

plain at MS&D how the German navy is re-establishing itself as a partner in the Far East.

### Strategic competence

Apart from scientists and industry experts, a number of high-ranking naval officers will provide insights during the conference. Vice Admiral Ahmed Khaled Hassan Said, Commander-In-Chief of the

Egyptian navy, will speak about the security situation in the eastern Mediterranean. Rear Admiral Henning Faltin from NATO COE CSW will discuss the importance of protecting military installations in coastal regions. The role of the German Maritime Forces Staff in securing the Baltic Sea will be the subject of a speech by Rear Admiral Stephan Haisch from the German navy – a topic very much in focus today because of Russia's aggressive behaviour. *ED*



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## »Not for technology's sake alone«

In an interview with HANSA, IMO's Secretary General Kitack Lim talks about the balance of technological benefits and safety concerns, start-ups, efforts for decarbonisation and digitalisation, the need for cooperation, geopolitical issues and effects of the war in Ukraine

*SMM is opening its doors again. Do you have a specific message for the maritime industry on that occasion?*

**Kitack Lim:** Shipping is changing – and we have an opportunity to be a part of that change and to help steer the industry along the path of sustainability. Decarbonization, digitalization and automation must go hand-in-hand with a just and equitable transition, with a focus on the people involved – the maritime professionals, including seafarers so as to ensure the sustainability of the industry.

Although this change brings challenges – it also brings opportunities. I am pleased to say that the industry itself is at the forefront of exploring and embracing these opportunities.

We have to recognize that the decarbonization transition cuts across all aspects of shipping – from new vessel designs and the supply and use of fuels, to safety matters, port operations and training of seafarers. And we must ensure a just and equitable transition, recognizing the need for collaboration, cooperation within the industry and among countries as well as support for skills and technology development in developing countries. This is an issue for all in the sector.

Sharing of experiences and the exploration of new technologies will be part and parcel of SMM. These dialogues need to continue beyond SMM in and across the maritime sector, as close collaboration is the most effective means by which to elicit change.

*How satisfied are you with the recent developments at IMO (and its committees) with regard to environmental regulation? With an eye on the COP26 climate conference, could there not have been »more« in terms of tighter environmental regulation?*

**Lim:** I appreciate the work of all Member States who have continued to progress many matters, even during the pandemic, through virtual meetings. The adoption of the short-term measure on carbon intensity in 2021 is a testament to the spirit of cooperation and collaboration among



© IMO

Kitack Lim's term as Secretary General of IMO ends in 2023

Member States, recognising the need to act. With the intervention of the short-term measure shipping's emissions are projected to peak in 2030 and decline. The commitment to further consider mid- and long-term measures through an agreed road map is important to highlight. With the work on alternative zero and low carbon fuels underway shipping is poised to make significant reductions in greenhouse gas emissions.

It is important to bear in mind that IMO is a Member State organization with 175 Member States. Countries and regions have differing priorities and needs. We need to ensure everyone has an opportunity to be heard when we develop regulations. The impacts of proposed measures must be considered – alongside ensuring the relevant technical matters are discussed. We must leave no one behind. We need a global solution to a global challenge.

*Do you think that will work out?*

**Lim:** I have every confidence Member States will continue to progress the work on GHG, leading to the adoption of the revised IMO GHG Strategy in mid-2023 and make further decisions over the coming decade to support energy efficiency in shipping and decarbonization. COP 27 will provide an opportunity to report on IMO's work to date and to highlight our several global projects which support capacity-building and information sharing in maritime decarbonization. The conversations and dialogues at COP 27 and other multilateral fora will undoubtedly feed into the discussions – and decisions – at IMO as we move forward.

*What do you expect with an eye on maritime environmental regulation in the near and midterm future?*

**Lim:** We are in the midst of a transition

# ITALIAN



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on a global scale, but there is steady progress being made towards a greener future. First of all, we will see the entry into force in of the carbon intensity measures – the short-term measures – on 1 November 2022. From calendar year 2023, ships over 5,000 gross tons will have to calculate their Energy Efficiency Existing Ship Index (EEXI) following technical means to improve their energy efficiency and to establish their annual operational carbon intensity indicator (CII) and CII rating. We have concluded and finalized the remaining guidelines which support the implementation of this measure.

We will see further measures related to GHG reduction. There has been progress in the development of marine fuel life-cycle GHG assessment guidelines; the impact assessment; and the mid-term measures (including technical and operational measures – integrating both various technical and carbon pricing elements).

The last MEPC session in June reiterated the strong commitment to finalize the revision of the Initial Strategy at MEPC 80 and increase the levels of ambition, while taking into account the needs of developing States, in particular SIDS and LDCs especially regarding the possible negative impacts of measures.

#### *How satisfied are you with the recent decarbonization activities of the shipping industry itself?*

**Lim:** I am very happy to see visible evidence that the maritime industry is keen to decarbonize and work towards a greener future. Many stakeholders are already undertaking innovative projects, others are initiating conversations about creating the support systems for this transition and there are many exciting initiatives within the shipping industry. I am sure the audience here at SMM will hear about some of the initiatives.

This year's World Maritime theme is »New technologies for greener shipping«. This provides a great platform for everyone in the sector to share what they are doing and to highlight the technological advances that have already been made – as well as those on the horizon.

Our transition to a decarbonized future must be equitable and our focus has to be on making sure no one is left behind. The IMO is continuing to facilitate partnerships and projects in this regard through or Department for Projects and

Partnerships such as IMO Norway Green Voyage Project. The global partnership is supporting developing countries, including Small Islands Developing States (SIDS) and Least Developed Countries (LDCs), in meeting their commitment towards relevant climate change and energy efficiency goals.

#### *Do you support the creation of an innovation fund, as proposed by the maritime community, or the inclusion of shipping in a CO<sub>2</sub> tax system?*

**Lim:** I believe that all proposals to facilitate the decarbonization of shipping merit due consideration.

The IMO Member States are developing and assessing a »basket of candidate mid-term measures« – integrating various technical elements (for example, a GHG fuel standard and/or enhancement of IMO's carbon intensity measures) and carbon pricing elements (for example, a market-based measure).

Ultimately, Member States will decide on the best path forward. I believe that the conversations taking place at IMO meetings provide a technical platform for Member States to discuss and make an informed decision taking into account the impact of decisions on developing countries in particular on SIDs and LDCs.

*Digitalisation and decarbonisation have been the most prominent topics for the industry for years. In view of the geopolitical developments, especially with an eye on the Russian war against Ukraine, is safety and security of merchant shipping coming back into focus?*

**Lim:** Digitalization and decarbonization are important to ensure the sustainability of the maritime industry however, Maritime security has also remained a priority for IMO. The key maritime security regulations in SOLAS chapter XII and the International Ship and Port Facility Security (ISPS) Code have been in force since 2004. IMO has continued to roll out maritime security training across the globe, supporting States to boost their capacity to address maritime security threats.

IMO continues to support the implementation of the revised Code of Conduct concerning the repression of piracy, armed robbery against ships and illicit maritime activity in the western Indian Ocean and the Gulf of Aden Area, known as the Jeddah Amendment. Support is also provided to countries in the Gulf of Guinea region and the implementation of the Yaoundé Code of Conduct. There are regular workshops held to facilitate knowledge sharing and capacity building.



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Lim at the recent United Nations Ocean Conference in Lisbon

Of course, related to the IMO mandate with regard to the Black Sea and Sea of Azov is the safety of seafarers and shipping. In February, I established an Emergency Task Force within the Secretariat and we have been following the situation closely assisting seafarers where possible and also communicating with the relevant States with a view to the establishment of a blue safe maritime corridor. IMO continues to provide technical input to UN efforts to secure the transportation of grain from Ukraine.

*What do you think policy-makers should do in this regard to protect civil shipping from unauthorised arrests or even shooting or hijacking?*

**Lim:** The welfare of seafarers and the need for international shipping to move freely and unhindered is critical to the continuous operation of global supply chains, for the benefit of all peoples of the world. As I have said in the past, seafarers and shipping should not become collateral victims of larger political issues.

Regarding technical aspects, Maritime security is about risk assessment and putting in place corresponding mitigating security measures. The necessary legal framework for assessing and mitigating risks is essential in line with agreed international regulations for all relevant parties including Flag, port and coastal States.

IMO encourages a whole of government approach to maritime security, offering a programme of integrated workshops and tailored support to develop a National Maritime Security Committee, Risk Register and Security Strategy.

Our work is focused on assisting Governments to develop strategies to address maritime security threats and to provide the relevant capacity building support.

*How should shipping itself react to these developments?*

**Lim:** As an industry, we have a duty of care towards the seafarers who are at the heart of shipping. We must prioritize their safety and ensure that they have sufficient training and support.

*At SMM, the role of start-ups will also be emphasised. How do we make sure that shipping benefits from innovations outside the sector, such as AI robotics etc.?*

**Lim:** Technology and innovation are important for the future of maritime. New and advancing technologies will significantly affect shipping, creating a more interconnected and efficient industry more closely integrated with the global supply chain. New and advancing technologies have already brought about changes at all levels in the way ships are designed, constructed, equipped and operated, and have impacted the people who operate ships – and these changes cascade to other sectors such as ports, law, insurance, etc.

*So should we look at it more objectively?*

**Lim:** We need to balance the benefits derived from new and advancing technologies against ongoing and emerging safety and security concerns, the impact on the environment and on international trade facilitation, the potential costs to the industry, and finally their impact on personnel, both on board and ashore.

An important aspect is to ensure that maritime technologies are designed to bridge gaps, support the human element, reduce administrative burden and increase transparency in operations. Technology cannot be developed for technology's sake alone – we must ensure that it fulfils a purpose and is compatible with a just transition.

*What would you like to achieve until the end of 2023, when your term ends?*

**Lim:** I want to progress on IMO's key policy areas as planned with respect to climate change; digitalization and automation; safety and security; the human element, in particular seafarers; as well as technical cooperation and capacity building. In particular, we expect the mid- to long-term strategy towards decarbonization to be adopted in mid-2023.

The establishment of the International Day of Women in Maritime was a momentous occasion and I intend to continue to build on this momentum and improve the gender balance by making maritime more welcoming to women.

I am also looking forward to celebrating the 50th Anniversary of the adoption of the MARPOL convention, which has made such a tangible impact on our industry and changed the very face of shipping.

*Interview: Michael Meyer*

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## »My highlight is the people at SMM«

SMM opens its doors for the 30th time this year. Bernd Aufderheide, President and CEO of Hamburg Messe und Congress, spoke to HANSA about the highlights of this year's event and his personal favourites of the past



© HMC

»Personal contact is hard to replace« – says Bernd Aufderheide

*This year, the 30th SMM is taking place. In your view, what highlights await visitors to the fair?*

**Bernd Aufderheide:** The fact that SMM can take place live again in its usual form after the corona-related time-out is a highlight in itself. We've also created a few things for the anniversary edition to make the trade show experience even more diverse and profitable. Networking is an important factor here. The new format »It's wine o'clock« allows exhibitors and visitors to exchange ideas in a relaxed atmosphere.

The theme of the 30th SMM is »Driving the maritime transition«. Shipping has embarked on an ambitious path towards decarbonisation and now needs innovative solutions quickly, especially regarding propulsion technologies and alternative fuels. The maritime energy transition is also a key topic at the exhibition stands, in the accompanying conference programme and at the new »Transition Stages«. There, we give experts and exhibitors the opportunity to present their findings or product innovations. One stage is dedicated to alter-

native drives, environmental technologies and sustainability, while another is all about automation, digitalisation and data management. The third stage focuses on passenger ship interiors, equipment and technology, and challenges and opportunities for the cruise industry. This shows: Like the industry, its leading trade show is continuously evolving.

*How do you think the founders of SMM, first held in 1963, would look at SMM today? Would they be satisfied with how this trade fair has developed?*

**Aufderheide:** I think the marine engineers who started the SMM predecessor event would be quite proud of us. What was a strong German event with around 200 exhibitors then has become a leading international trade show. This year we expect over 2,000 exhibitors and around 40,000 trade visitors from more than 100 countries, and all the halls are fully occupied. For those responsible in the industry, participation is a must because here, they can experience all the important innovations in the field of maritime technology.

The »Ship and Machinery« exhibition has become something big within six decades. German Chancellor Olaf Scholz has taken over the patronage, and we expect numerous top-class speakers from all over the world at the specialist conferences.

*Digitalisation, accelerated by the corona pandemic, shows that business travel and contacts can be replaced by digital communication options. What impact does this trend have on the trade show business?*

**Aufderheide:** The enormous popularity we are experiencing from the exhibitor side actually shows the opposite. It's true: video conferencing has made it possible for many to stay in touch even during difficult times. But on the other hand, we feel that there is a great need to catch up when it comes to face-to-face meetings with business partners. We often hear the

phrase »At last you're back«. After all, people are social creatures. Experience shows: Personal contact is hard to replace, especially in business relationships that are also based on trust. Many of our exhibitors and visitors expressly emphasise how practical it is to have numerous meetings in the compact format of a four-day trade show that would otherwise only be possible with many time-consuming and costly (air) trips to different continents.

*How are you positioning yourself as HMC for the future?*

**Aufderheide:** We continue to assume that there will be leading global trade fairs for numerous sectors in the future, such as SMM for the maritime industry. In less international industries, on the other hand, we believe that a stronger regionalisation of trade shows is likely – whereby »regional« here can also mean an entire continent or large regions of

the world. In summary, this means from our point of view: The time of the very large exhibition centres is coming to an end. However, good connections, accessibility – preferably in the centre of a metropolis – and a highly attractive environment are needed.

In the sense of a campus concept with several universities and research institutes in the direct vicinity as well as its »own park« Planten un Blomen between the CCH and the exhibition grounds, the HMC is very well positioned here. In addition, there is an »own« TV tower as a landmark and attractive neighbourhoods and event locations that can be reached on foot in just a few minutes.

Based on recent experience and against the backdrop of climate change, the decision in favour of a destination will also increasingly depend on very good, accompanying digital offerings and a convincing sustainability concept in the future. We are already working on both and

will continuously expand and adapt our performance in these areas.

*You have been Managing Director of HMC since 2004 and Chairman of the Management Board since 2007. What has been your personal SMM highlight so far?*

**Aufderheide:** There is no single highlight. For 60 years, SMM has been a trade show that always impresses with tremendous exhibits and remarkable innovations. But for all the technology, the focus for me has always been on meeting people from different cultures and countries who are driven by the fascination with shipping. They all ensure – often enough under adverse conditions – that tremendous flows of goods flow safely across the world's oceans. In short, my highlight is the people at SMM.

*Interview: Anna Wroblewski*



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Federal Minister for Economic Affairs and  
Climate Action for Germany



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## *Maritime industry has a central role to play*

**D**ear exhibitors, Dear distinguished guests of the SMM.

I am pleased that the SMM maritime trade fair is taking place for the thirtieth time this year and I warmly congratulate the organisers on this anniversary. In the years since its founding in 1963, the SMM has developed into the leading international trade fair for the maritime industry. Over the course of time, however, there have been profound changes in the framework conditions for the industry. Many challenges and difficult situations have had to be overcome, such as the oil crisis in the 1970s and the financial crisis in the years after 2008. At the same time, new technologies and globalisation have created new opportunities and additional value for the maritime industry in recent decades. Because without shipping, global trade and international division of labour in the manufacturing of goods would scarcely be possible.

The world of international trade is encountering problems. Trade disputes, the repercussions of the coronavirus pandemic, and Russia's war of aggression against Ukraine have brought home to us the vulnerability of global supply chains

and our dependence on individual countries. The worldwide impact of global warming on economic processes is becoming ever more visible.

But it would be wrong now to speak of de-globalisation. That would be Brexit, Donald Trump, isolation and nationalism. This would be detrimental not only to your industry, which stands for openness to the world and a broad horizon like no other. It would be utterly harmful since effectively curbing global warming is a critical task facing all of humanity that we can only master through global cooperation.

One of the lessons learnt from the successive crises is to work towards greater resilience. In many countries, governments and businesses are once again focusing mainly on diversification and risk provisioning and are trying to cushion against external shocks. Another lesson is that we need to move away from fossil fuels even faster across the globe.

In both cases, the maritime industry has a central role to play. At the moment, ships are extremely important in helping us become independent of Russian fossil energy. Today, they still transport gas

and oil – while they themselves are powered by oil and diesel. Soon, it will be green fuels such as ammonia that are produced worldwide and transported by ships. These green fuels and their downstream products such as hydrogen will enable us to make industry – and not least the maritime industry – climate neutral. The expansion of offshore wind energy, which plays a central role in the global energy transition, also offers major economic opportunities for the maritime sector.

We are currently experiencing a transformation of historic dimensions. The path toward a resilient and climate-neutral global economy is a major challenge – especially as it is a race against time. But the impressive innovative strength and adaptability not least of the maritime industry fills me with confidence that we will achieve our goal in time. The SMM maritime trade fair with this year's focus on »Digital Transformation, Climate Change and Maritime Energy Transition« is a good opportunity to deepen these capabilities in the industry and to prove that international cooperation is the key to tackling major challenges.

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## *Economic success and climate protection go hand in hand today*

The »Shipbuilding, Machinery and Maritime Technology« (SMM) in Hamburg is the leading international trade fair for the maritime industry. With over 2,000 exhibitors and 40,000 trade visitors, it offers shipyards and industry experts unique opportunities to present innovative technologies and products.

The 30th SMM focuses on key aspects of the maritime transition, including climate protection, sustainable engines and fuels, and the digitalization of shipping and port infrastructure.

Economic success and climate protection go hand in hand today. To remain strong and competitive, the maritime industry must implement climate-friendly technologies. As the third-largest seaport in Europe and a major hub for scientific and technological innovation, Hamburg offers excellent conditions for modernising shipping and supporting the transformation of the maritime sector.

I wish all exhibitors and visitors a successful SMM 2022 with many new contacts, stimulating discussions, and a pleasant stay in Hamburg.

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## *A particularly great responsibility*

We are pleased and proud to be present again as VDMA at SMM 2022. We are very excited about the discussions and exchanges with you, the visitors and exhibitors at the world's leading maritime trade fair. We are convinced that the planned and especially the unplanned trade fair contacts will increase the speed of innovation worldwide.

Despite or precisely because of the many crises and imponderables, it is necessary to advance the maritime economy and its logistics, because it is a prerequisite for increasing prosperity worldwide. The global economy will falter without the smooth exchange of capital goods and commodities.

The shipbuilding and offshore supply industries have a particularly great responsibility in this regard. Through the

maritime energy transition (electric, hybrid, PowerToX), new digital standards (MTP, UMATI) and intelligent route planning, we are on the way to a climate-neutral and fast transport chain at sea. The shipbuilding and offshore supply industry companies ensure the unrestricted technical availability of the transport units. Their know-how in construction, lifetime service and digital data acquisition, evaluation and implementation are the guarantors of this.

The necessary interfaces to energy generation are also provided by maritime mechanical engineering. The construction and operation of increasingly powerful offshore wind turbines and energy conversion into PowerToX are welcome challenges for the industry. It is not without reason that the leading international trade fairs SMM 2022 and

WindEnergy 2022 are close together.

With more than 63,000 employees and over €10 billion in turnover, the German maritime supply industry continues to lead the world. Its success factors are customer proximity, permanent innovations, speed, reliability and quality.

At SMM 2022, the VDMA will also promote the industry's most important technology topics. Digital solutions will be presented and discussed at the Maritime Future Summit, the Green Transition Stage and the Digital Transition Stage.

The same applies to the VDMA stands in Hall A1 Stand 520 and Hall A3 Stand 314, where we want to talk to you in person about the challenges and solutions facing the shipbuilding and offshore supply industry.

We look forward to your visit!

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**Reinhard Lüken**  
Managing Director  
German Shipbuilding and Ocean  
Industries Association (VSM)



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## Meet the champions

«Finale daheim» was the Bavarian slogan when FC Bayern München made it to the Champions League Finals in 2012, which took place in their hometown of Munich. That's how we feel at VSM every two years during SMM when all eyes of the shipbuilding world are on our hometown, Hamburg. This is where the World Champions in the shipbuilding industry want to show their top performance.

And top performance is what shipping is eagerly searching for as we together enter a new age of sustainable maritime business. We know we cannot continue as we have over the past decades. However, much uncertainty remains as to what our path will look like tomorrow. All we know for certain is that decisions must be taken now, not tomorrow. In the past, waiting for others to test innovations might have been wise. Today, this could easily mean being out of business tomorrow.

The winds of change will fundamentally impact the business as we know it. And will also create entirely new opportunities. Cheap heavy fuel oil has energised shipping for decades. This will soon come to an end. We might not know which fuel option will dominate next. However, we know that future fuels will be cleaner and substantially more costly. Therefore, a simple fuel switch might work technically and safeguard compliance. However, only top efficiency will safeguard future

competitiveness. Mandatory monitoring and reporting will increase transparency and protect sound operators that use sound technology best.

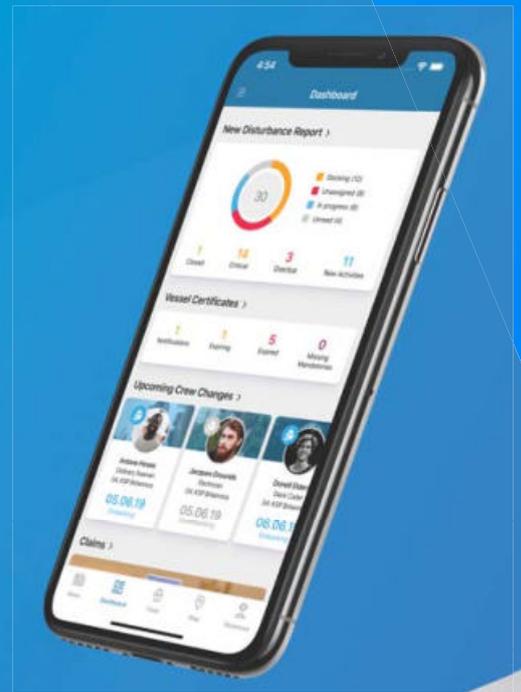
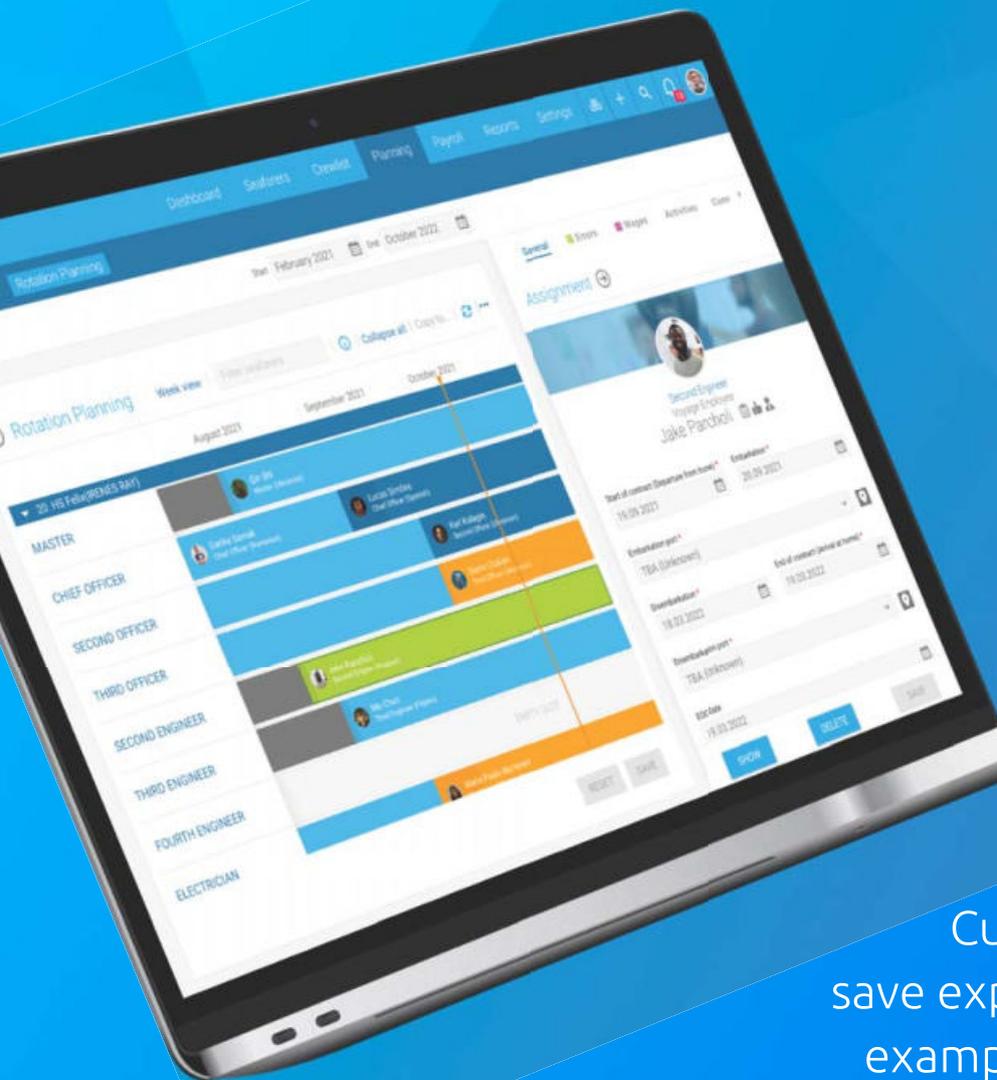
Carbon Capture & Storage will need to play a role if we want to achieve the Paris Objectives. Carbon dioxide, hydrogen, and renewable fuels will become important shipping cargoes, as will towers, wings and generators for hundreds of new offshore wind farms. Other forms of ocean energy will be harvested as well as mineral resources to build all the latest hardware required to achieve the energy transition. Climate change mitigation is a huge challenge for our hard-to-abate sector. However, it is also offering plenty of new opportunities. It's a brave new world if you are brave enough to read the signs of our times.

For the maritime industry to find orientation to that end, there is no better place to be than Hamburg in early September 2022. COVID has taken a toll for the past two and a half years. But thanks to effective vaccinations, a dangerous pandemic has become a manageable one. Finally, we can meet again in person, discuss, share information, and celebrate joint achievements. That, too, is SMM 2022. Have a great time in Hamburg and an even better one returning home with fresh inspiration to tackle the next Champions season.



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# DRIVE DIGITAL TRANSFORMATION IN FLEET MANAGEMENT



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Gaby Bornheim

President

German Shipowners' Association VDR

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## *Everyone must work together*

Germany is still one of the largest shipowning nations in the world and a competitive shipping location from which, among other things, the second largest container ship fleet in the world is managed. The German merchant fleet comprises almost 1,900 ships and is the carrier of world trade and an essential medium for the strong German export of goods. More than ten years of the crisis lie behind shipping, especially in Germany. It is, therefore, more than gratifying that stability has finally returned to the shipping markets in the past two years. However, one or two good years will not be enough to handle the challenges ahead of us. Long-term stability is essential because the challenges and the resulting need for investment in shipping remain diverse in every respect.

First and foremost, the war in Ukraine, which the VDR condemns in the strongest possible terms, should be mentioned here. Whenever the war ends, the shipping markets will have changed for a long time. Today about 40% of the world's merchant fleet transports energy. It is certain that because of the war, trade routes will shift in the long term, especially when it comes to transporting energy by sea. A lot of the global energy policy and energy markets are being reorganised, and the VDR assumes that shipping will play an even more critical role in energy transport in the future.

But also, the COVID-pandemic continues to challenge maritime shipping – the pandemic situation still has a significant disruptive influence on logistical processes in important shipping centres around the world. The spring lockdown in the world's largest port of Shanghai, where almost 200 ships were waiting in the queue for a berth for up to a week at peak times, showed the world how vulnerable the maritime supply chains are. There is still a lot of work ahead of us in the shipping community to handle such lockdown situations.

And finally, climate protection: Converting the entire world merchant fleet to climate-neutral propulsion technology is an enormous feat and probably the greatest challenge for shipping at the moment. In the fall of 2021, world shipping sent a clear signal that it wants to operate climate-neutral globally in 2050 – the »how« must now be clarified in a joint effort with politics, the mineral oil industry, engine manufacturers and research. Everyone must work together because neither emissions nor climate protection stops at borders. To achieve our self-imposed goal, we need a fuel revolution. Can we manage this joint effort? Yes, of course, if we only want to. With this in mind, we look forward to discussing how we can master all these challenges together and wish everyone an interesting SMM 2022!



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Jens Pfeiffer  
Chairman  
German Ship Suppliers Association

## *German Ship Suppliers Looking Forward to a Successful SMM*

The German Ship Suppliers Association (Verband Deutscher Schiffsausrüster e.V. – VDS) is more than happy to see the SMM exhibition this year back at full scale. The world's largest maritime event has been sincerely missed by our members, who are regular exhibitors or visitors.

For ship suppliers, the SMM means meeting most of our existing and potential sub-suppliers, most of our national and international customers and a lot of good friends in four fully packed days. Ship suppliers act and think globally; therefore, we cannot imagine a more efficient and powerful set-up than a four-day event bringing together all relevant players and having the chance to meet these not only during exhibition opening hours but also at extraordinary evening events. Despite technological advances and changing cooperation and procurement methods, the ship supply business with all the uncertainties, short notice changes and complex last mile deliveries still require a good portion of human intervention and benefits from close personal relations between the many stakeholders.

Therefore, meeting people is still highly valuable.

On top of this, we have also watched the contents of the conferences and side events and the displayed products change permanently over the years, according to the latest developments in the industry. This way, it always feels like SMM is really at the heartbeat of our beloved maritime industry and acts as a trendsetter for certain key topics.

Many of our members have a long history with the German shipping community and the SMM. Looking back at how this masterpiece of an exhibition has developed throughout the decades, we also feel some pride in contributing to the constantly growing success.

As a member of the SMM advisory council, the VDS would like to thank the event organisers for keeping it up and always finding excellent solutions to a constantly moving and changing world with different challenges.

We would like to welcome all visitors to Hamburg, and we look forward to meeting you out there. See you at SMM!

# Future Summit Connecting the Dots

From ship design to ship management, and from the bridge to the engine room and the cargo hold, digitalisation has entered all aspects of ship operation. Identifying smart ways of combining digital technologies is one of the topics of this year's Maritime Future Summit

**K**icking off SMM once more, at the Maritime Future Summit on 5 September 2022 experts will discuss the latest digital trends. The course has been charted: »Increased automation in shipping has the potential to enhance safety, to improve environmental performance, and to ensure more efficient and sustainable shipping,« says Kitack Lim, Secretary-General of the International Maritime Organization IMO.

*»Intelligent vessel control, fleet and port optimisation provide immediate answers to reducing fuel consumption.«*

Sean Fernback, Wärtsilä Voyage

And indeed, the digital toolbox is full of technologies: Weather monitoring allows crews to optimise their routes and minimise fuel consumption; digital twins provide an efficient way to detect the root causes of ship performance issues; and remote surveys enable safe inspections without having to be physically present – a great advantage especially during the Covid 19 pandemic. Finding ways to combine all these digi-



© Hapag-Lloyd



© Wärtsilä



© DNV

The keynote of this year's Maritime Future Summit will come from Hapag-Lloyd CIO **Donya-Florence Amer** on »Defining Position and Course in Digital Transformation for a shipping liner company«. Amer started her professional career in 1999 at IBM, where she held various management positions. She has played leadership roles at Bosch since 2017, initially as Executive Vice President and as a member of the CIO Management Board. Since 2020, she has been the CEO of Bosch Climate Solutions, of which she was a co-founder. In November 2021 she joined Hapag-Lloyd.

Smart ship operation will be the subject of a presentation by **Sean Fernback**, CEO of Wärtsilä Voyage. »Intelligent vessel control, fleet and port optimisation provide immediate answers to reducing fuel consumption and carbon emissions while laying the framework for a shift that'll touch every part of maritime transport's value chain«, he says. Fernback is the President of Wärtsilä Voyage and Executive Vice President of Wärtsilä Corporation. Prior to this, Fernback served as Chief Technology Officer at Navico and was responsible for driving the company's digital marine agenda.

**Pierre C. Sames**, DNV Group R&D Director, will speak on the subject of »AI and Drone-Assisted Ship Hull Survey«. How will advanced digital technologies augment and improve the inspection of ship hulls? Based on DNV research & development, Sames will share details on the involved technologies and discuss the impact on processes and people. As Group Research and Development Director at DNV, he is responsible for managing the corporate strategic research and technology development projects. He joined GL in 1995 after studying naval architecture in Hamburg.

tal tools effectively is the topic of the Maritime Future Summit.

Featuring top-ranking experts, the conference will take place on 5 September, one day before the launch of the leading international maritime trade fair. »Connected Technologies On The Rise« is this year's motto for the meeting of the international digital experts. »Forming smart alliances and developing multidisciplinary solutions is the order of the day,« says Claus Ulrich Selbach, Business Unit Director – Maritime and Technology Fairs & Exhibitions at Hamburg Messe und Congress (HMC). »At the Maritime Future Summit, the maritime industry will

*»Are you sure you know all essential information that you need to achieve the best performance of your fleet?«*

Patrick Mueller, Siemens

enter the next stage of the digital transformation.«

### Smart hulls

The shape of a ship's hull decides about its stability, cargo capacity and fuel consumption. No wonder hull condition is a key area for monitoring technology. The French company notilo plus combines subsea robots with Artificial Intelligence (AI) to perform hull inspections. »Our autonomous underwater drone ›Seasam‹ not only allows you to inspect the hulls of boats, but it can also, thanks to artificial intelligence and image analysis tools, do predictive maintenance to prepare for



© Knud E. Hansen



© notilo plus



© Siemens Energy

With »Design Cooperation in COVID-19 Times using VR« Virtual-Reality will also be on the MFS agenda again. **Kenneth Goh**, who works for the Danish-based ship design firm Knud E. Hansen, in the Perth/Australia office, reports on lesson learnt and feedback from colleagues and customers. A sneak preview: »Even reluctant users are comfortable and being productive in less than half an hour.« Goh has been responsible not just for innovation in the ship design products, but also the processes, including the role Virtual Reality can play in multinational design projects.

»From Hull to Cloud: Hull Condition Monitoring 4.0«. **Solène Guéré** is the Vice President of the French start-up company notilo plus which has revolutionized underwater hull condition monitoring using underwater drones and A.I. for machine vision. She received Hansa's »Maritime Innovator Award« in 2021. Notilo plus combines underwater robotics and AI technology to create underwater inspection reports with ease, simplicity, speed, and consistency. The approach is seen by many stakeholders as a role model of future hull condition monitoring.

»Are you sure that you know all essential information that you need to achieve the best performance of your fleet?« This question will be posed by **Patrick Mueller**, Siemens Energy Marine. »It is important to have a holistic view on all your assets, available in real time, from machinery to navigation combined with environmental conditions. The solution is an open digital ecosystem, open to gather any kind of information, onboard a vessel and onshore from different sources«, he says. His topic will be »Ultimate data transparency as the key to a brighter future.«

the next drought,« says notilo plus Vice President Solène Guéré who will present the system at the Maritime Future Summit. The ship classification society DNV pursues a similar approach for ship hull inspections. In his speech, Pierre Sames, Senior Vice President Group Research & Development, will explain what technologies DNV relies on. Hull monitoring frequently reveals an annoying form of ballast: In extreme cases, plankton, algae and muscles growing on the bow and propeller can increase a ship's fuel consumption by more than 50%. Hasytec has developed an effective method to avoid biofouling. The company, nominated for the German Environmental Award 2022, will highlight its innovative ultrasonic anti-fouling technology at SMM.

*»Even reluctant Virtual Reality users are comfortable and being productive in less than half an hour«*

Kenneth Goh, Knud E.Hansen

## Towards a transparent future

Saving fuel to minimise costs and emissions is one of the top goals for the fleet control centres of ship operators. At the Maritime Future Summit, Sean Fernback, CEO of the leading ship engine manufacturer Wärtsilä Voyage, will discuss how the digital transformation can unlock the full potential of shipping. »The maritime world is entering the digital era where mutualising our investments into common platforms and standards is a prerequisite to successful innovations for a more sustainable and efficient maritime industry.« For Patrick Müller from Siemens Energy Marine, data transparency is key to achieving this goal. In his presentation he will advocate an open digital



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**Ludmila Seppälä**, Director Business Development, Marine Industry at Cadmatic, will provide insights on model-based development for marine projects and digital continuity of processes along with data flow, resources, and materials are the core of data-driven shipbuilding. »Gains in quality and optimization start with the digital model and expand to cover a complete life-cycle of vessels and digital tread of data in the shipbuilding«, she says. Her presentation is titled »A Vision for CAD/CAM Integration for the Shipbuilding Industry«.

**Ma Jilin**, Director of Intelligent Technology & Safety Laboratory at China Classification Society (CCS) will share details on the accelerated digital transformation at the class society. At the digital edition of SMM in February 2022, as one of the panellists Ma already provided some insight into CCS' perspective on the the feasibility of of maritime autonomous surface ships (MASS) – bottom line: realistic but still a long way to go to become real. China Classification Society once again acts as sponsor of the Maritime Future Summit.

Both MFS panels, »Connecting Digital Technologies« and »Connecting Data to Move Ahead«, will be moderated by MFS »veteran« **Volker Bertram**, professor for ship design at the World Maritime University, well-known as a conference organizer and author. »I like this year's common theme. Come together, not just the people at the summit and SMM, but the technologies that get connected to move to the next level of IT solutions. And it often happens in smart alliances and joint ventures, big established players in the industry teaming up with agile start-ups. I find the excitement contagious.

ecosystem. »It is important to have a holistic view on all your assets, available in real time, from machinery to navigation, combined with environmental conditions,« says Müller.

### Digital security

More transparency and data traffic increase efficiency – but also risks. Data networks are favourite targets of cyber criminals. Not long ago Hapag-Lloyd fell victim to a cyber attack. Donya-Florence Amer will describe how her shipping company defends itself against these kinds of attacks and charts its future digital course. The IT specialist has been Chief Information Officer at Germany's biggest container liner operator since the beginning of the year. For autonomous shipping in particular, an effective cyber security management system is of utmost importance. The on-board sensors must be able to function error-free to avoid collisions on the water. The team of the CAPTN project

*»Gains in quality and optimization start with the digital model«*

Ludmila Seppälä, Cadmatic

focuses on sensor fusion and deep learning. Initiated by Kiel University in 2018, they develop low-emission, autonomous ferries for the Firth of Kiel. The team will present the current status of the project at SMM. »Digital transformation, climate change and the maritime energy transition – what better headlines fit our initiative, which, with its collaborative projects and numerous partners from the maritime industry and excellent research institutions, focuses on precisely these topics,« says Dr. Wiebke Müller-Lupp, General Manager of Wissenschaftszentrum Kiel GmbH and the coordinator of CAPTN.

Numerous high-tech innovations will be featured at the Maritime Future Summit and can be viewed by visitors at the stands of SMM exhibitors on the days

after the conference. The entire programme for the Maritime Future Summit can be found on the SMM homepage at <https://www.smm-hamburg.com/konferenzen/maritime-future-summit/>.

The conference will once again be co-organised by HANSA – International Maritime Journal. HANSA invites you to join the Maritime Future Summit and discuss the latest digital trends and innovations. *ED*

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Carsten Bullemer, organizer of the Maritime Start-up Night. In 2022 he brings the event to SMM

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## Start-ups on Stage at SMM'

The 5. Maritime Start-up Night in Hamburg will take place for the first time as part of the SMM trade fair. 16 international start-ups from twelve countries covering digitalisation, hardware performance, software and marketplace will present their solutions

The German maritime industry is often still relying on traditional relationships between business partners and maybe brokers in between. Maritime Start-up guru Carsten Bullemer, founder of companies like vesseltracker.com, trusteddocks.com, searoutes.com and portcall.ai, wants the industry to open up to new ways of doing business and co-operation. »If a solution does not fit in the first place, there will be ways to make it fit,« he is convinced. Those having the assets like ships or ports »should get together with people with ideas and technical know how and just try something that seems crazy at first. Maybe something good comes out in the end.«

So, Bullemer came up with the Maritime Start-up Night to give new maritime companies a stage to present their solutions to the industry. This year, the event will take place for the fifth time – and for the first time it will be held at the SMM

maritime trade show in Hamburg on 7 September. What better place to pick?

»The Maritime Start-up Night is the only event in Hamburg where innovative, maritime start-ups meet the decision-makers of the industry. In addition, we expect scientists, athletes and international world stars from the show industry,« says Bullemer, who also organizes conferences like the Seadevcon and AIS Summit and holds speeches and seminars to bring fresh Blue Economy ideas into shipping and maritime.

The »Start-up Day« begins at 11 am with the Pitches & Panels. There will be a jury of industry experts per category who will select one start-up each for the grand finale in the evening. The Start-up Night begins at 6 pm. Here the pre-final winners will »pitch« their ideas again. The winner will receive the Maritime Start-up Award 2022.

The programme will be completed by presentations of interesting personalities

like the extreme swimmer and ocean ambassador André Wiersig and exciting stories like that of the discovery of the wreck of Ernest Shackleton's icebreaker »Endurance«.

John Noville & Band will take care of the musical part of the evening. Admission is free for all SMM visitors.

Claus Ulrich Selbach, Business Unit Director – Maritime and Technology Fairs at Hamburg Messe und Congress, says: »I am delighted that the Maritime Start-up Night is taking place at SMM for the first time – I am especially happy for the newcomers! Because: nowhere else is the density of decision-makers in the maritime industry as high as at SMM. Well prepared, the start-ups will make many valuable contacts and conclude concrete deals – of that I am convinced.«

HANSA will present the winner of the Start-Up Award with a »media booster«, i.e. a marketing package worth 10,000 €. ED

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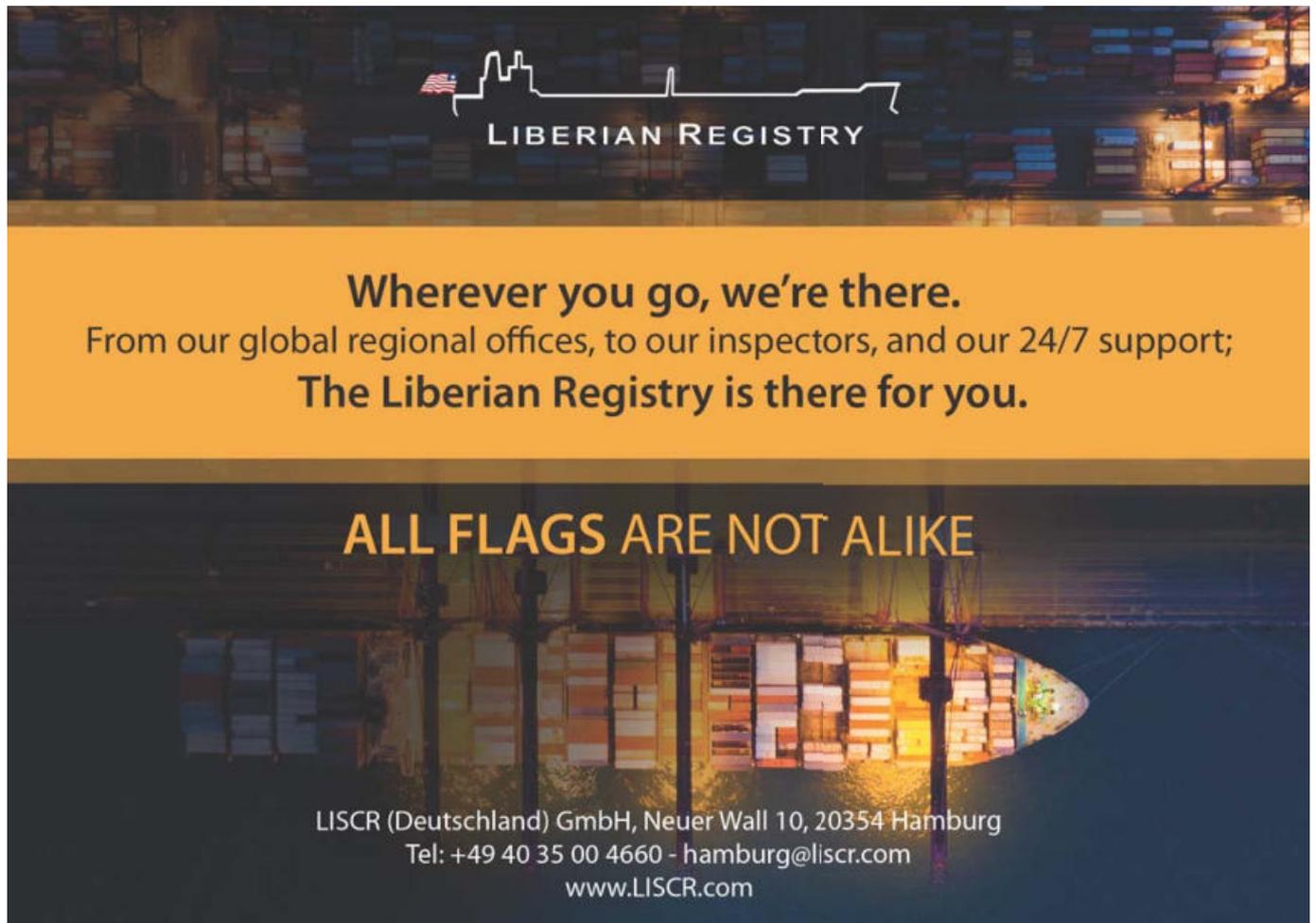


WAVEFOIL

Wavefoil has developed, sells and delivers retractable bow-foils. By increasing the energy efficiency by 5-15%, a Wavefoil will contribute to lower emissions and energy costs for conventional vessels, and lower energy costs and extended range for non- or low emission vessels. A 10-25% reduction in the vertical movement leads to increased safety and comfort. Experience shows that crew and passengers are less seasick sailing with bow foils, and the safety increases both due to less movement and the fact that the people onboard are less seasick. The effect of bow foils was discovered during the 19th century – that foils installed deep down in the bow will turn the vertical movements into propulsion and thus increase the energy efficiency. In waves higher than approximately 0.5 m, bow foils produce a force opposing the vessel motion which pulls the vessel forward. The current product portfolio consists of foil modules in four different sizes, covering vessels from 20-200 m. The modules come with a bridge control system and a monitoring solution. Wavefoil's simulation software predicts the fuel consumption with and without the bow foils deployed. ■

## Smart-Marine

The Automatic Drain Cleaning System solves the hidden problem of clogged cylinder bores and drainpipes on 2-stroke marine engines. On most large vessels clogged drainpipes are just accepted as a part of everyday life which Smart-Marine aims to change with its system. »It is hardly visible, but the effect is significant savings on fuel/lube and the clean pipes improve combustion and working environment,« says Thorbjørn Thade Petersen, CEO of Smart-Marine. The Danish company has developed and produces the Automatic Drain Cleaning System. It has been thoroughly tested on MAN-ES 2-stroke engines, and the result of having augers continuously rotating and cleaning the pipes is striking. »Almost immediately, we saw a reduced fuel consumption due to the engine operating at correct high Pmax and higher mechanical efficiency. The augers make it much faster to do samples for Scrape Down Analysis (SDA) and with more precise and instant iron readings, the system simply prevents unnecessary operational expenses,« Thade Petersen explains. The fast and better SDA samples also reduce the use and optimize the dosage of cylinder lube oil. Saving both fuel and cylinder lube oil, the Automatic Drain Cleaning System reduces the CO<sub>2</sub> impact of the vessel. ■



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Bid2board is an online marketplace leveraging the power of data and bridging the gap between marine service suppliers and ship owners / managers. Ship managers enjoy time efficient, simple and organized technical service arrangement, while service suppliers gain increased visibility and improved workflows from enquiry receipt until the execution of service. The company wants to make easy, time – saving, controlled and transparent service arrangements while improve service arrangement experience through an automated and simple process. The aim is that service suppliers get to know their competitiveness as service suppliers. Bid2board wants to increase service suppliers' visibility and ship managers' service options while, at the same time, reduce costs for ship managers and assist service suppliers to gain orders through a bidding process. The platform is matching the service needs of ship managers with quality suppliers verified by the bid2board team. ■

 Csoect

Cspect uses remote inspection techniques to inspect assets eliminating the use of divers, staging, cranes, ladders, rope access or cherry pickers. To perform these inspections Cspect uses Remotely Operated Vehicles (ROV) and its ALTUM telescopic pole systems. The ALTUM has been developed to easily perform inspections and actions at height or depth. The system is an in-house development by Cspect and patent pending. It consists of different modules which can be attached on top of an ultra-light telescopic pole of 24 m. The system has an easy set-up and can be deployed for twelve hours without battery stress. It can be carried as standard luggage on a plane. The ALTUM with the VISUAL module performs close-up inspections and the ALTUM with the UTM module performs ultrasonic thickness measurements.

Cspect also offers in-water surveys on ships and offshore structures with mini ROVs. Besides the normal visual inspections, they can perform thickness measurements of steel structures, dimension checks, cathodic protection measurements/differential voltage measurements on structures, local cleaning by cavitation, marine growth thickness measurements and sonar inspections. ■



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The company VesOPS ApS delivers a software product that provides information and decision support in the Green House Gas (GHG) emissions reduction in shipping. Our software helps ship owners and operators to comply with the emissions requirements of vessels by decision support on fuel efficiency through data analysis, while reducing the operating costs.

Based on detailed digital twin vessel models, high frequency sensor data and advanced algorithms, a number of analyses are available for the users of the system. Among the analyses available are hull, propeller and engine performance, including techno-economic models and scenario predictions; commercial contract compliance including the contracts effect on the Carbon Intensity Indicator (CII); voyage performance and predictions using AI based optimization software. Includes the voyage execution effect on the fuel economy and the CII; what-if scenarios and predictions on commercial decisions; lowering the CO<sub>2</sub> emissions from vessels for a more sustainable future of Shipping

The advanced software solution handles the data analytics and provides the most precise and up to date overview of the performance of the vessels in the clients' fleet. Therefore, it is the best tool for setting targets for future fuel-efficient operations, simulating different scenarios and knowing their effects, in order to maintain the best performing fleet in the market. The vision behind VesOPS is to help shipowners and operators in their work to comply with the new emissions requirements for shipping, while at the same time reducing their operating costs. »By reducing the emissions from shipping, it is possible to lower the shipping industry's impact on the climate which benefits the environment both locally and globally. By doing this, we take a step in the direction of a better and more sustainable future of the shipping industry,« the company says. ■



Pelixar operates as a »Dronehouse«. The company develops and offers advanced solutions for drones and components in the unmanned aviation sector, that can be tailored to clients' individual needs. The customers include companies, industry, and public institutions. The key areas of supplied solutions are search and rescue, measurement and detection, monitoring and protection, inspection, and technical supervision.

A team with interdisciplinary skills and experience makes sure that supplied solutions have unique properties, and meet demanding technical requirements. All of the solutions are carefully researched and undergo demanding practical flight testing in the target environment. Pelixar products dedicated to the maritime industry are primarily aerial monitoring systems designed for tasks like ASM (Aerial Surveillance Monitoring), AEM (Aerial Environment Monitoring) and ATM (Aerial Technical Monitoring). Those systems have been tested and are used for example by Port of Gdynia and Port of Gdansk. Secondly there is a system Pelixar SAR with MRe X8 drone that can automatically search for people in the water and directly pass them lifesaving measures or towing the person to a safe space. ■



OSCAR stands for Optical System for Cognition And Ranging and is the first AI based system, available for sailing yachts and for motor vessels. It alerts you of any floating obstacle on your course – large and small – day and night. The OSCAR systems are designed to detect hazards that cannot be detected by radars, AIS or sonar. As a result OSCAR prevents collisions with any potential threat a vessel can encounter at sea. Be it other vessels, unidentified floating objects such as logs, buoys or containers, as well as sleeping sea mammals. The system alerts the crew of any potential danger and tracks the position and distance of that threat. ■



In 2010, with the support of the National Research Council Canada-Transport Canada, University of Waterloo, Ryerson University, research began into a zero discharge exhaust gas scrubbing technology. In 2013 the research team produced the first functioning membrane scrubber. Research led to patented breakthroughs in DeSOx, DeNOx, Particulate Matter and Carbon Capture. Ionada pivoted in 2020 towards carbon capture and re-branded itself as a climate technology company for both energy and marine clients. Ionada's iDeCarbon reduces car-

bon emissions from oil & gas, thermal power generation, waste to energy, hydrogen, steel, cement and marine industries. The containerized modular carbon capture system provides the ideal solution for the majority of industrial carbon emitters. The iDeCarbon hollow fiber contactor membrane technology can remove up to 99% of the carbon dioxides in post combustion flue gases. Ionada's iDeSOx dry desulfurization technology removes 99.9% of all sulfur oxides from flue gas. Dry injection of sodium bicarbonate powder into flue gas

and the resulting sodium sulfate powder byproduct are both non-hazardous, food safe, pH neutral, nonpollutants. The iDeSOx systems are carbon neutral with lower total carbon emissions than wet scrubber exhaust gas cleaning systems. Ionada's iDeNOx Selective Catalytic Reduction (SCR) technology removes up to 97% of all nitrogen oxides from exhaust gases. Ionada's DePM technologies include impulse cleaning Bag Filters, Electrostatic Precipitators, Cyclone Separators as well as passive Diesel Particulate Filters for smaller engines. ■

## Cetasol

Cetasol offers data-driven software solutions for sustainability with AI-powered energy optimization solutions for marine-commercial vessels. Cetasol has investigated a potential for reducing energy consumption (hence CO<sub>2</sub>) by 10–35% only by reducing variations in the operation (day-day, captain-captain, etc.). Cetasol's solution, called iHelm (Intelligent Helm), is optimizing customers' energy consumption. The long-term goal is to add a brain to the system in order for the system to learn by itself and provide »actionable insights«. The service provides 10–25% reduction in fuel consumption (CO<sub>2</sub> and cost) and facilitates the transition to electric and hybrid by a realistic evaluation of elec-

trification potentials. It also prolongs the battery lifetime for electric vessels. In order to receive real-time data for optimizing energy consumption, an industrial PC is plugged into the vessel. In addition, an onboard dashboard is installed to provide the captain with insights and recommendations on how to improve manoeuvring. The use of iHelm results in a reduction in fuel consumption, CO<sub>2</sub> and cost saving. »In our initial cases, we noticed a 17% reduction in fuel consumption in the first year, and 22% reduced fuel consumption in the second year,« Cetasol says. The iHelm platform is a subscription service, that develops and improves over time. ■

## Ankeri

Ankeri offers ship owners, charterers, managers and other stakeholders a cloud-based platform to manage data, collaborate, optimise fleet utility, increase efficiency and promote sustainability in shipping. Ankeri's solutions allow stakeholders to take control of their data and create new value by organizing and cultivating their own commercial, operational and technical ship data. Ankeri's product Fleet & Chartering helps shipping professionals organize data, share it and collaborate for improved productivity and informed decision making. The

Data Connections Hub is a cloud-based, robust, scalable and secure data storage infrastructure for connecting to source data and transforming it into a format that other systems can make use of. Whether it is auto log data from different vendors, AIS, now cast, hind cast or noon reports, the Data Connections Hub is able to connect to every onshore source API to create a consolidated and concise representation of the data. Ankeri's Aware app generates quick insights from fleet data – including each vessel's CII as per voyage or time period. ■

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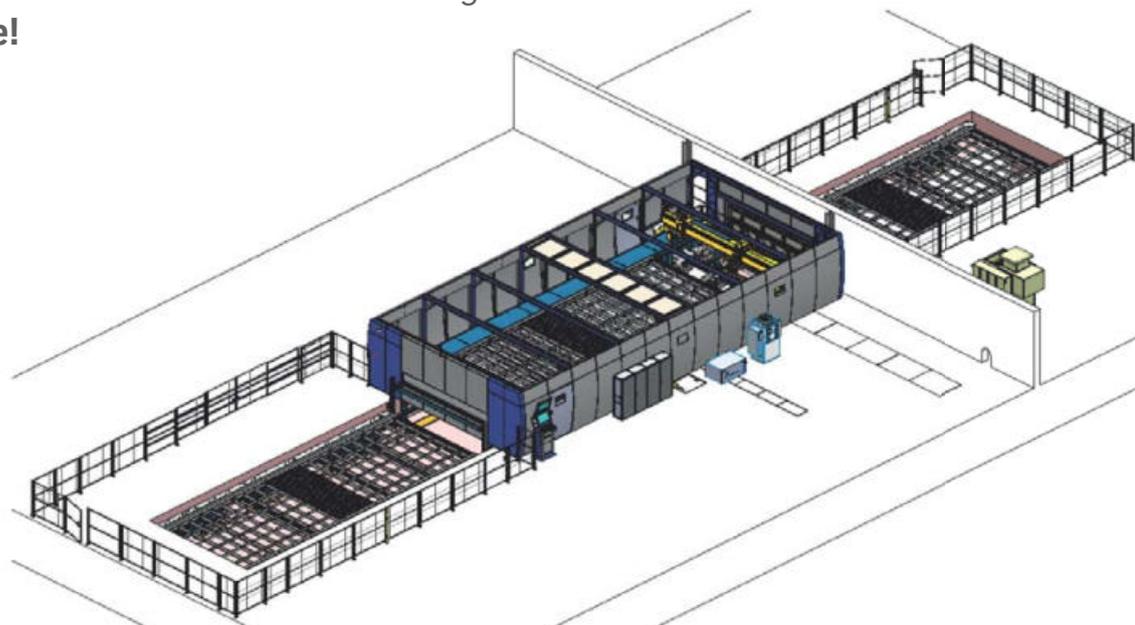


Insurwave works with speciality insurance teams across logistics, marine, aviation and energy organisations to modernise their insurance interactions. The Insurwave platform was developed from a client’s perspective, focusing on the insurance buyer’s needs and challenges they face. The comprehensive SaaS technology platform liberates the entire insurance chain from painstaking admin so that insurance buyers now have the time to focus on identifying and managing new and emerging risks. The platform provides easy access to real time, reliable source of quality data plus enhanced valuable insights, meaning insurance buyers now have everything in one place needed to make quicker and better insurance decisions for their business. Founded in 2018, Insurwave has continually advanced its technology platform in response to insurance buyers’ requirements and now supports over 50 clients globally. That’s over 11,000 assets (vessels, ports & terminals, aircraft and property), including 8% of the global marine fleet, with a combined insurance value of \$120 bn that are now active on the Insurwave platform.

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# Why digital user interfaces matter for shipowners



Integrating digital user interfaces will save costs throughout the life cycle of a ship and contribute to safer and more efficient operations

Digital user interfaces might not be the first thing that springs to mind when building or operating a ship. Yet, the fact is that digital technologies are increasingly affecting ship acquisition, operation, and maintenance. The user interfaces are the front-end meeting point between humans and digital technologies. If these do not work optimally across the organisation, it will affect the ability to harvest safety and profitability gains from your digital investment.

Suboptimal user interface design is often an invisible problem that can have large consequences when acquiring and operating a ship. This affects aspects such as operator training costs and effectiveness, contributory factors to incidents and accidents, operational efficiency, cost of equipment procurement purchases and product choice.

These challenges have increased in recent years as the digitalisation of the maritime sector has led to a rapidly increasing number of digital user interfaces onboard ships. A single bridge can have a dozen or more individual systems installed in a single bridge workplace. If one, in addition, includes the systems found in the multiple other locations around a ship or across a fleet, the number increases exponentially.

## Design consistency

The development of a ship is a tremendous effort carried out by a group of industry actors. As such, a ship owner is, in essence, a system integrator that organises assemblies of many systems that need to work together. This is also the case for the increasing number of digital systems that can be accessed in

various places across the ship or on land. These digital services are designed and delivered by different companies with usually no coordination of user interface design. Maritime workplaces are, in many cases, effectively multi-vendor systems where many systems are assembled in a workplace to be operated by multiple users. Applying modern standards for user interface design cannot fix the problem since inconsistent design cannot be solved by improving individual systems. In effect, up until now, there has been no realistic pathway in the maritime sector towards coordinating design across a whole workplace, let alone a whole ship or a fleet.

Severely inconsistent design is less frequent in other domains where freely available design guidelines and design systems are widely used, and most ap-

plications share common design traits. Using commonly established design patterns, users already know how to perform basic interactions when engaging with a new product. If you learn how to use one interface, you gain generic knowledge that will make it much easier to use another interface built on the same principles. You also lower the risk of errors related to misunderstandings in how an interface functions. This lowers the learning and uses threshold of new systems, requiring less mental effort from its users and less time training and familiarising users to understand individual systems and their individual differences.

### Solving a cross-industry challenge

Consistent design is an excellent convenience for the end user in most mainstream or consumer user interfaces. In the maritime sector, however, it is absolutely critical. A user often uses multiple applications simultaneously while operating safety and environmentally critical equipment. In everyday lives, users mostly use one application at a time and can reorient themselves when they switch an application. A maritime user, however, might need to use several conflicting design philosophies simultaneously.

All in all, maritime systems have been lacking two significant elements for achieving user-centred digital integration. First, it lacks guidance on how to design best practice user interfaces adapted to the maritime context. Second, it lacks frameworks allowing for the consistent design of user interfaces across any manufacturer.

### A radical departure

OpenBridge is an initiative seeking to increase user-centred digitalisation for all maritime workplaces at sea and land. It was initiated in 2016 and has 27 members from the maritime industry, government, and academia. It launched the world's first open-source maritime user interface design system in March 2020, and today, over 700 companies from over 50 countries have registered to access the resource. A design system is a framework meant to reduce cost and increase design consistency by combining design guidelines with digital design and development tools. The Open-

Bridge Design System is a radical departure from current practice and enables user-centred digital integration across maritime systems.

The OpenBridge Design System is built on current state-of-the-art digital user interface design principles from the web and mobile industries adapted to the maritime domain. OpenBridge focuses on standardising the generic design of applications. This includes a standard application structure, styling, icons, and information visualisation. On a higher level, it standardises global functions such as multiscreen control, alert and dimming handling and, in some cases, provides standard reference designs for mandatory equipment such as ECDIS and RADAR.

### Free and online

The OpenBridge design system is free and can be found online at [www.openbridge.no](http://www.openbridge.no). In addition to the online guideline, it includes digital tools directly supporting the design and development of OpenBridge compatible user interfaces. This greatly reduces the cost of using OpenBridge and increases design and development speed while guiding quality digital user interface design through its premade components. There are already several software packages on the market supporting the development of OpenBridge interfaces. Using these tools, the new software will inherently be compatible with other OpenBridge software and follow the maritime rules for palettes, readability, icons and clickable surfaces.

OpenBridge will, in most cases, help companies realise better user interfaces by offering components that represent industry best practice standards and reducing the work needed to create basic components, design patterns and palettes.

### Improved user experience

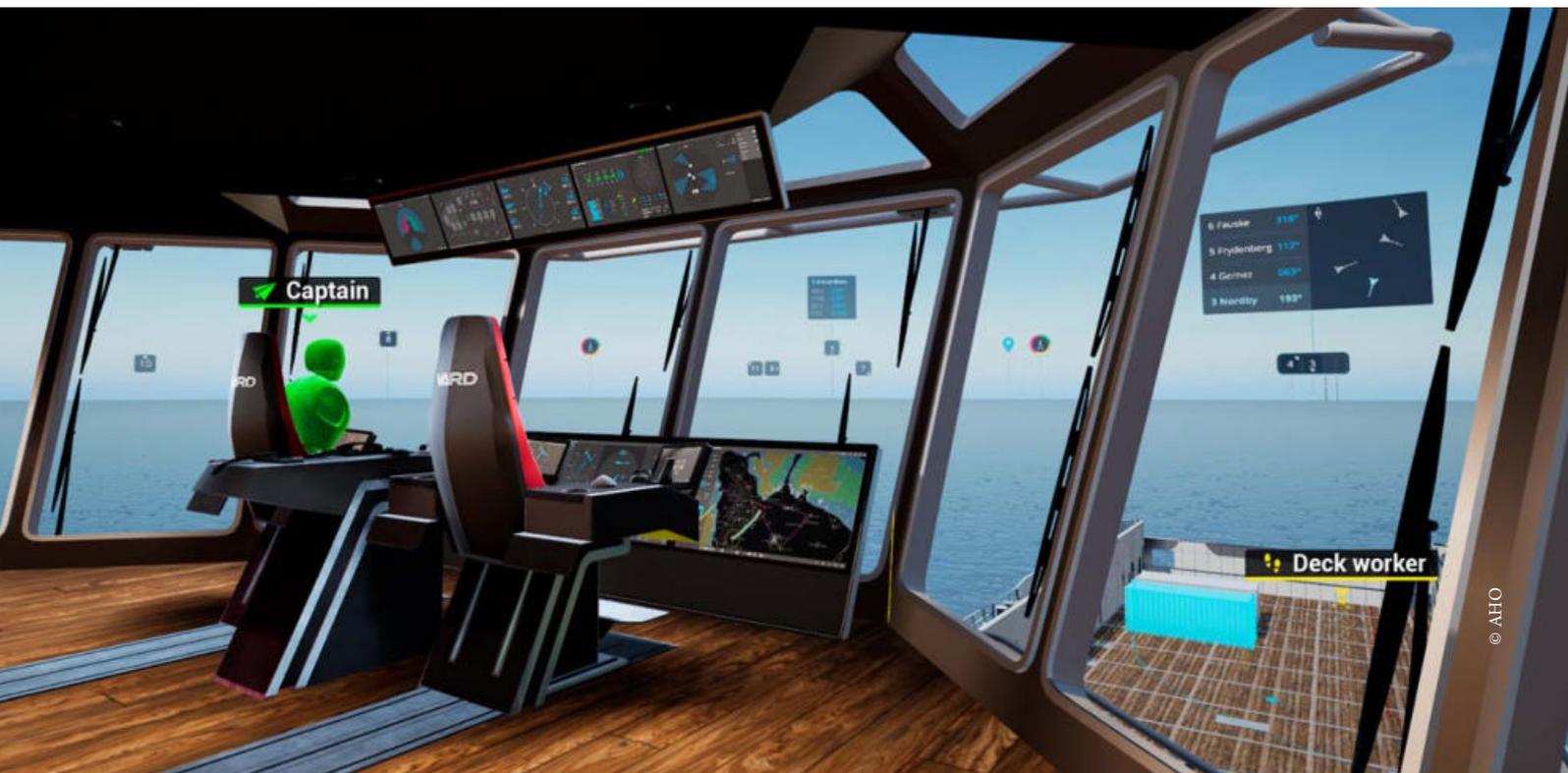
There is a direct correlation between poor UI design and poor operator performance. Even the most cutting-edge system cannot be expected to work up to its specifications if its UI is not well designed. The good news is that it is easy to fix and will be cheaper than doing nothing. With OpenBridge compatible systems, the gap between the theoretical benefit of a new system and how it actually works will be significantly reduced because of improved usability and inter-industry design consistency.

### Regulation and standards?

Maritime interfaces need to counter temporal impairments due to the shifting conditions at sea. In general, impairments are countered by applying design guidelines for accessibility. Maritime regulation does not account for this in current rules, and in effect, there are stricter rules for accessibility when making consumer interfaces than for maritime equipment. For example, in consumer interface development, strict and specific rules apply for contrast and readability. For maritime interfaces, very broad international standards apply, providing goal-based



Illustration of OpenBridge components



Work in progress introducing OpenBridge to AR technology

guidance but few details for designers to easily interpret or implement in practice. For instance, in the IEC 62288 standard, contrast demands are defined as »sufficient contrast«, with no details or guidance on how to achieve this stated goal.

OpenBridge counters this by appropriating web and mobile standards such as WCAG 2.0 and design patterns found in the leading, land-based design systems. These have been adapted to maritime-specific requirements such as day, night, and dusk and the need for optional physical interface redundancy. By applying these guidelines, user interfaces will help mitigate the effects of temporal impairments and, in general, improve the usability of the interfaces. This will help reduce accidents and increase efficiency.

### Lower innovation costs

Modern user interfaces are much more detailed and advanced than previous generation systems. There are considerable resources needed to make a modern system, and for many companies, it might be very costly to develop and maintain such a system in-house. OpenBridge alone includes 760 user interface com-

ponents with behaviour, not counting variations and colour files.

There is also special competence needed to develop a state-of-the-art design system. This involves different user-centred design traditions such as interaction, graphic and industrial design, as well as human factors specialists and front-end engineers. In addition to this, it is important to involve a wide range of users in the development as well as regulatory bodies. Very few maritime companies have the available resources to carry out such processes alone at a comprehensive level as part of their software development.

OpenBridge has met these challenges by applying open innovation processes supporting digital user interface development. First, the development has been led by experienced designers and researchers from Ocean industries concept lab, a leading design research group in Norway. This team has been supported by engineering competence from Sintef Ocean and human factors competence from the university of Southeast Norway. This group has been supported by an extensive network of industry and government partners that each has contributed to parts of the whole system. Furthermore, since

OpenBridge is an open system, a very large group of industry actors have had direct access and the ability to contribute to its development. This has given OpenBridge quality control throughout its continued development, which is uncommon in the maritime industry.

OpenBridge is not bound by regulatory ratification or a frozen guideline that is static and cannot further develop in a top-down approach, but instead driven by industry needs and thus much more dynamic and flexible compared to other approaches. As it continues to be developed, its quality will likely improve as more people get engaged in the development. Because of this process, it is likely that OpenBridge at least has equal or better rigour than existing maritime applications. And since it is decoupled from any specific product, it will continue to incrementally improve quality forward.

As digital integration is mainstreamed in the maritime industry, more and more companies are seeing that using a standard baseline interface guideline is opening their ability to focus on the core functional offering of their product. Using an existing system will save significant costs and most likely increase

the quality of the resulting user interface, especially for companies without an entire design department.

### Ease of learning and skill transfers

The lack of user interface standards in the maritime domain affects efficient training and familiarisation. The differences in how generic user interfaces are built in the maritime domain means that users need to learn different user interface philosophies for each equipment and combination of equipment that make up a single workplace (e.g., bridge). This challenge is largely mitigated by applying a common user interface design standard. The extreme realisation of this is seen in the aviation industry, where pilots are trained on particular aircraft models, and because of the design consistency across a particular Airbus or Boeing is identical, they can move between aircraft types. Moreover, if a user has encountered and learned how to use one OpenBridge in-

terface, the knowledge of how to operate basic functionality can be transferred from one system to another. Buttons, alert handling, iconography, styles and many standard interaction patterns will be the same. This will allow the operator to focus on the system's core functions instead of learning a new interface philosophy.

### Requirements specification

In modern software development and question, it is necessary to define usability requirements in the acquisition process to secure that the systems meet modern standards of user interface development. However, defining requirements that can be met within budget can be challenging in the maritime industry. Mainly because many system manufacturers do not have specialised human-centred design personnel or processes in-house. Some of these challenges can be reduced by using OpenBridge in the acquisition or design process. Since Open-

Bridge builds on state-of-the-art standards, a software following the guideline will follow the same standards too. That is not to say that all software that uses OpenBridge is well designed. However, they will at least meet a baseline of modern requirements so that the usability requirements can focus more on operational performance than contrast and readability.

At the level of ship design, when the ship owner is developing the list of specifications for a new ship together with the ship designer, the ship owner can ask for OpenBridge compatible systems. It is then up to the ship designer to find the appropriate systems. This simplifies the establishment of the specifications and saves time for both the ship owner and the ship developer.

### Less cost of software development

Ship owners are increasingly developing their own software related to their operations that are used on land



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Field studies on ships in operation looking at current interfaces

and on ships. Modern user interfaces generally have a higher standard than previous generations and require much more resources in development. It is common to underestimate the cost of developing the user interfaces of modern applications.

OpenBridge reduces cost in several main ways. First, it reduces the cost of developing user interface components and style sets. The system includes a vast library of all the components necessary for producing most ships' interfaces. Further, it reduces cost in implementation since the components are developed according to web standards that are well known and structured for export to developers. Further, the components are already integrated into third-party development tools, making it possible to develop production-ready interfaces using on-the-shelf software. The entire guideline is integrated into design tools, making it possible to sketch new interfaces using

industry-leading design tools with no up-front cost. Finally, the system includes common design patterns and references designs for central applications, thus reducing the need to develop these parts from scratch. All in all, OpenBridge can significantly reduce investment in new interface development.

### Freedom of choice

OpenBridge is still in an early stage where benefits mostly can be traced to more efficient design and improved usability of individual systems. However, as the number of OpenBridge systems increases in the maritime sector, the value of endorsing open innovation will increase significantly when acquiring or retrofitting ships. Since competing companies might deliver systems with a common baseline user interface, it will be possible to change or mix different systems while still maintaining interface

consistency and, in extension, safety.

All in all, there is a tremendous value in applying an open standard to ships today to secure user-centred digitalisation. In effect, there are very few downsides to such an approach, and the entire premise rests on whether the open standard can deliver state-of-the-art user experiences. If it does, it will make it possible to achieve lower cost and higher quality even in standalone digital products. However, suppose it is adopted across systems. In that case, the benefits will increase significantly as one can take advantage of compatibility gains and reduced complexity in the entire value chain of digital products.

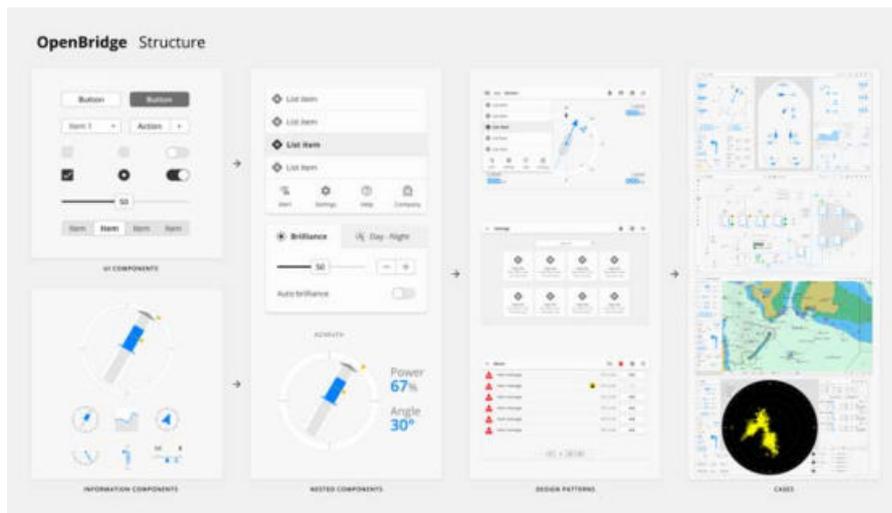
### The added value

Our analyses show how open innovation and OpenBridge can bring value to the ship owner. This transition is already underway, and hundreds of mari-

time companies are already accessing OpenBridge. The entire chain of the maritime industry can benefit from this standard. However, the most considerable effect will be for Ship owners, who will see improvements to cost and efficiency across the entire lifecycle of the digital system.

The multiplication of individual benefits and savings per user interfaces will become significant at the level of a whole ship with the integration of numerous UIs. When integration spans several ships or an entire fleet, the benefits keep on adding up. Because each ship in a fleet will require the need for more management and data analysis from land-based operators, the benefits also add up on the land-based side of ship operations.

For the ship owner, we argue there is little risk in moving towards OpenBridge in their digital strategy. As demonstrated in this article, even a partial implementation of OpenBridge is still better than the status quo. On the other hand, if



Components in OpenBridge Design System

the industry at large embraces open innovation of user interfaces, we help free up resources now tied down to generic user interface development so we can focus on next-generation systems instead.

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Oslo School of  
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# Modular and autonomous for R&D

German institute Fraunhofer Centre for Maritime Logistics and Services (CML) is pushing forward the development of maritime innovations by using a modular Autonomous Surface Vehicle to enable applied research



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The shown configuration features a Launch and Recovery System to deploy underwater inspection robots – therefore enabling multi-vehicle inspection services

For almost 12 years, the Fraunhofer Center for Maritime Logistics and Services (CML) has been developing and optimising processes and systems along the maritime supply chain. For the majority of the time, the focus has been on innovation in software solutions and logistics concepts. In recent years, a new area has been developed based on one of the core competencies of the Team Maritime Technologies and Biomimetics – Maritime Robotic Assistance Systems.

## Autonomous Surface Vehicles

The developments of the CML are characterised by the Fraunhofer guiding principle of applied research. The first series of trials was launched quickly after the development, and all testing activities are taking place on an experimental prototype for implementing maritime robotic applications. Conducting experiments in applied research is key to making new findings and transferring research to real-world applications. However, running experiments, especially in the maritime field, is often expensive and involves much time and effort. To enable more accessible research and validation of new ideas, the Fraunhofer Centre for Maritime Logistics and Services built an Au-

tonomous Surface Vehicle (ASV) called »SeaML: SeaLion« with a modular design to quickly implement innovative research concepts and test state-of-the-art sensors and service concepts.

SeaLion serves as a flexible test and demonstration platform for various technologies related to maritime robotics. The vessel is purely electrically powered with an overall length of 2.2 m and width of 1.5 m. The ASV features a catamaran design for improved stability while waterborne and a modular layout of the on-board systems. The twin hulls are connected by a superstructure that can accommodate various combinations of sensors and equipment used to perform many experiments.

## Up to 24 hours

The unique feature of the ship is the modularity of the equipment that can be installed on its deck. Depending on the research project, a complex structure such as a Launch and Recovery System (LARS) for underwater robots can be installed, or a completely empty deck is possible.

The modular architecture of SeaLion continues within the hulls, where the eight cylindrical compartments display a

special design feature. All electronic components are arranged in these units and can be easily removed and replaced depending on the application. The vessel is powered by two 48V batteries (also placed in a compartment per hull) of 2.3 kWh each. This enables a mission duration of up to 24 hours. The battery voltage is converted to 24V, 12V and 5V respectively to power sensors, computers, actuators, and other equipment that can be installed when needed. SeaLion is controlled by a central computer, a small form factor PC (Intel NUC). This pc communicates with several small single-board computers via Ethernet.

Consequently, all domain controllers are connected to the same Local Area Network (LAN). 5GHz connection allows a stable and fast connection between the ship and the shore station. On the software side, the ship is based on the open-source middleware package Robot Operating System (ROS). ROS is a comprehensive set of software frameworks allowing low-level device control and implementation of commonly used functions such as winch control.

## »RAPID« project

SeaLion has already been validated through several sea trials in the Port of Hamburg and a public demonstration throughout the Intelligent Transportation Systems (ITS) Congress in 2021. This demonstration shows the robotic service approach developed in the RoboVaaS (Robotiv Vessels as a Service) project (MarTERA co-found project 2017–2020, EUR 2 million, seven partners), which Fraunhofer CML led. The project aims to make maritime operations in ports more efficient and safer by integrating and connecting smaller ASVs (Autonomous Surface Vehicles) and ROVs (Remotely Operated Vehicles) to offer new services to shipping industry. Five service concepts have been developed: Ship hull and quay wall inspections with a combination of ASV and ROV, a real-time

anti-grounding service with ASV, depth data acquisition, and data muling – an innovative form of underwater acoustic data transport.

Another project in which the research vessel is currently being used is the RAPID (Risk-aware Autonomous Port Inspection Drones) project. This HORIZON 2020 project develops automated port inspection drones with autonomous beyond visual line of sight (BVLOS) flight and inspection capabilities based on the integration of advanced sensors and onboard data processing and technologies for extended energy autonomy. Fraunhofer CML develops drone control, web-based microservices, remote emission sensing technologies, and a UAV battery hot-swap system (BHS). The BHS makes it possible to replace the batteries of the used DJI M300 flying drone to avoid downtime. The whole BHS system is installed on the deck of SeaLion, allowing the drones to be used in places that are not accessible due to their limited range.

### Various tests

The ASV has been put through its paces in various tests since its introduction. These included port surveys, autopilot investigations, and robot-as-a-service studies. Further development of the ASV aims at two aspects: developing autonomous services in the maritime sector and developing an intelligent situational awareness controller. These developments of new controls and algorithms are not only carried out in the real port environment but also in a simulation. Developing a local trajectory planning algorithm for collision avoidance manoeuvres and considering the COLREG rules through surface sensor technology is envisaged soon. In addition, different object detectors trained on real and synthetically generated data sets were trained to detect and identify traffic vessels, and infrastructure elements were tested. After various optimisation cycles, a model for the detection of ships, pontoons or other traffic participants could be created.

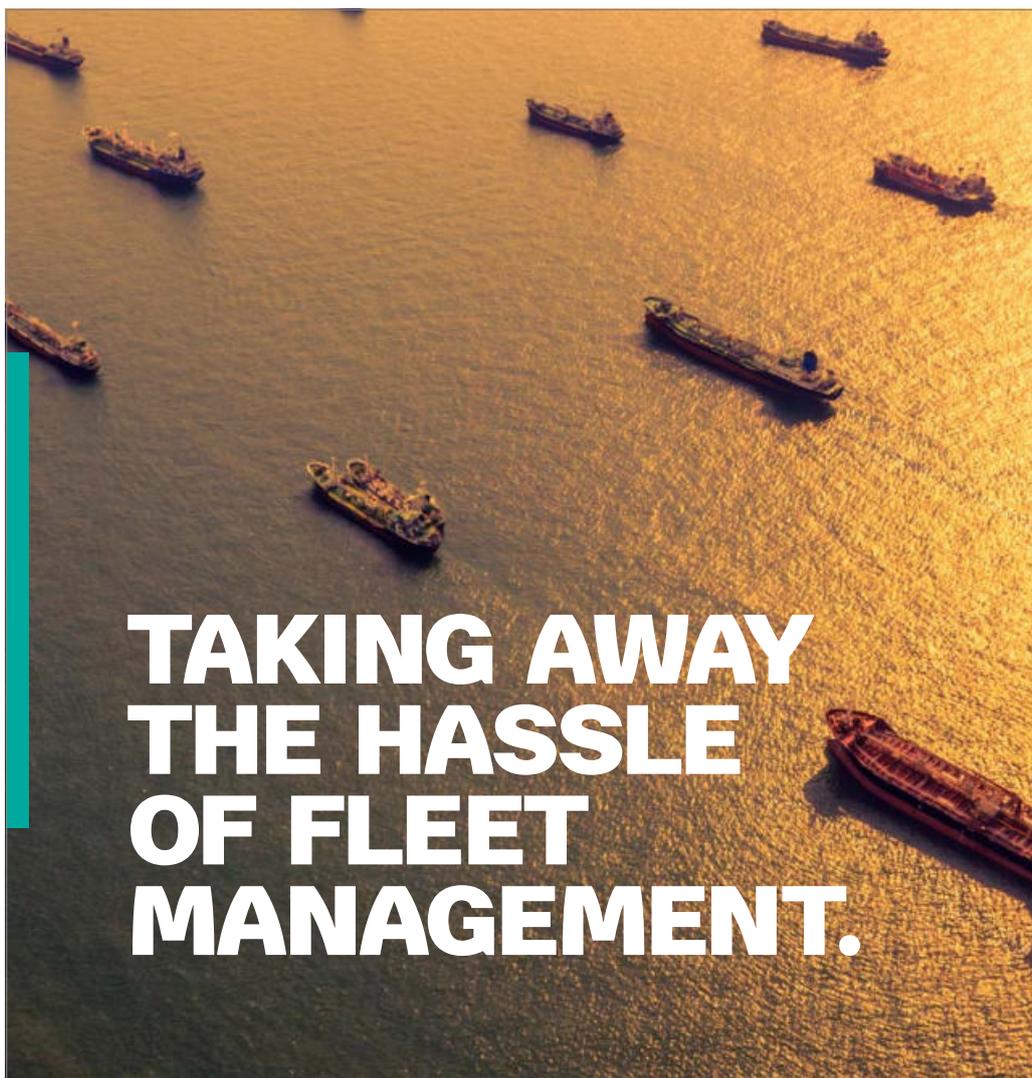
### Expanding capacities

With SeaML: SeaLion, Team MTB has laid the foundation for demonstrating future maritime robotics concepts. In this way, the CML contributes significantly to

improving the innovation of ports and seas. With the move to a new building in Hamburg-Harburg port in 2022, the CML will expand its personnel and research possibilities. With these new possibilities, the team can advance its visionary concept of Maritime Robotic Assistance Systems even faster by making its software solutions more efficient in conjunction with concrete hardware developments. With the implementation of

challenging research projects, the CML looks forward to exciting times in which it can act as a reliable partner for industry and as a driving force for the development of future ports.

**Authors:** Nico Zantopp,  
Vincent Schneider  
Fraunhofer Center for Maritime Logistics  
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# The class perspective

## How to decarbonize shipping? Priorities and prospects

There are many levers to be tightened in the environmentally sound transformation of the maritime industry. But where to start?  
We have asked classification societies. These are their answers

The shipping industry faces huge challenges to decarbonize and meet the targets set by IMO 2030 and 2050. Although there is much work to be done, a lot of progress is being made with some exciting opportunities through new technology and new energies. Classification Societies are evolving into professional transformation advisors and regulatory experts for an uncertain commercial world.

As one of the hard-to-abate sectors, the shipping industry has to look at other industries to find potential solutions, both for the longer term and for the present. Decarbonization requires a multi-faceted approach with solutions that will reduce carbon emissions today and meet IMO 2050 going forward. It also involves all stakeholders within the industry, technology, new fuels, and fresh approaches to operating procedures. We simply cannot afford to ignore any of the options available to us if we are going to achieve our goals. This all requires collaboration, which is why RINA has established global Decarbonization Committees, including one focusing on Northern Europe, to discuss practical, achievable solutions that will take the industry forward putting at service of the industry its experience in the decarbonisation of multiple sectors, including mobility, infrastructure, and energy.

When considering new fuels, shipowners are faced with problems relating to available onshore infrastructure and knowing which fuels will be readily available for bunkering in the future. For new vessels today, knowing which technologies to invest in to ensure both compliance and longevity is an issue. However, the recent Approval in Principle



*Giosuè Vezzuto*  
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(AiP) of LNG/hydrogen-fuelled MR tanker offers a practical way forward. Using a novel propulsion arrangement, LNG is used to produce hydrogen directly onboard the vessel using a gas reformer, negating the need for portside hydrogen infrastructure. It is a perfect example of how modular, scalable solutions can provide the industry with solutions to take it forward step by step. Technology can be added over time and increasing amounts of hydrogen used to fuel the ship going forward, exceeding the requirements of IMO 2050. This exciting option can be applied to any size of vessel and is a solution that owners and operators can embrace today with confidence.

RINA has also carried out studies to define testing protocols for type approval and product certification for fuel cells,

which can be used together with unconventional fuels (LNG, Methanol, Hydrogen) as part of the energy transition. Solutions for cruise ship distributed power generation (e.g., in ships' Main Vertical Zones) based on methanol solutions for the supply of the relevant fuel cells have been approved. Some applications will be ready this year for possible installation on board.

Alongside new fuels like hydrogen, ammonia, methanol and hybrid or fully electric designs, as well as possibilities including nuclear power, digitalization remains a vital component of the decarbonization journey. Through advanced analytical techniques, fleet optimisation software delivers significant advantages in terms of operational efficiency and reduced emissions. Through data and digital tools, there's increased safety, reduced risk of human error, and more about best-operating practices is learnt. These are essential tools to support the industry starting immediately and into the future.

While the shipping industry faces one of its biggest challenges in decarbonization, this is also a time of opportunity and innovation that will redefine it for the future. In the long term, we need to find ways around the barriers to zero-carbon fuels, through collaboration, investment, regulation, and incentives. New fuels need to be made available at a scale and price to provide viable options for the shipping industry and promote a greener economy. This will necessitate support from governments in the form of schemes such as emissions trading and levies on heavy fossil fuels, which will help further finance the research and development of green solutions in the long-term.

While the sustainable ships of the future will likely be propelled by ammonia, methanol or hydrogen, the innovation journey to develop and deploy these new fuels on global fleets will be powered by a much more intangible ingredient: trust.

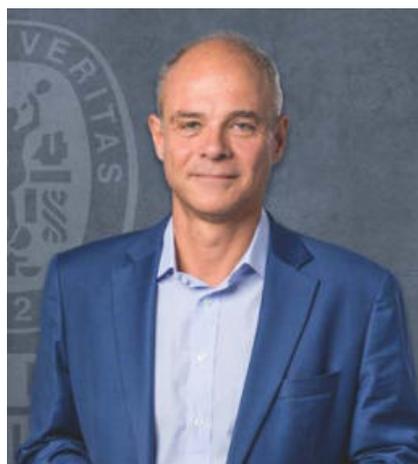
If one needs confirmation that new fuels can be safely rolled out in commercial shipping, they should look no further than the emergence of LNG as a marine fuel in the past 20 years.

It wasn't until the year 2000 that LNG started being used as a fuel on non-LNG carriers. At the time, industry collaboration and rigorous validation were instrumental in addressing safety and technology concerns, enabling LNG to rapidly gain traction in the industry. Today, the global fleet currently includes just over 700 LNG carriers and 300 LNG-fuelled vessels, and LNG-powered ships represent around 30% of new orders. What was a technological leap forward just two decades ago is now a mainstream option.

In addition to benefits in terms of emissions reductions, shipping's experience with LNG has also had a more profound impact: it provides a blueprint of how we can safely develop the engines, tanks and supply infrastructure for the low carbon fuels that are in contention to power the fleets of tomorrow, such as methanol, ammonia and hydrogen.

Perhaps the most important lesson from our experience with LNG is that there can be no innovation without trust. While in recent years our industry has demonstrated a remarkable commitment to tackle its decarbonisation challenge, the reality for many shipowners is that the future fuel landscape remains fraught with uncertainty.

While the first engines capable of burning ammonia or hydrogen as a fuel are already under development, significant innovation is needed to overcome the technology and safety challenges related to the toxicity, flammabil-



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ity, and low energy density of these new potential fuels. Building the necessary global supply chain infrastructure will also take years. For shipowners, therefore, investing in these solutions can feel like a leap of faith. Given the level of investment at stake, owners need clarity and assurance that new engines and systems are safe and reliable. What they need, in essence, is trust.

This is where classification societies play a fundamental role. Working with shipowners, shipyards and technology providers from the early concept stages to delivery, we provide the expertise and neutral position needed to independently assess new technologies. By doing so, we help build trust between all stakeholders, thereby supporting safe innovation across the industry.

In practice, we help de-risk ambitious new projects through our Rules, Approvals in Principle (AiPs), Joint Development Projects (JDPs) and risk assessment processes. We validate compliance with existing rules and regulations, and where prescriptive rules are yet to be developed, we use our expertise and experience to help identify, assess, and mitigate potential risks, ensuring safety above all.

A key building block of trust is our classification rules, which provide a

comprehensive framework on how to address the main risks related to specific fuels. For example, our Rule Note for ammonia provides specific requirements to manage toxicity, such as double-walled piping and detection mechanisms wherever there is a risk of leakage. This provides clarity to industry pioneers for a number of ambitious projects that we are supporting, including the development of the world's largest ammonia-powered Very Large Ammonia Carrier (VLAC), standing at 93,000 m<sup>3</sup>, by Jiangnan Shipyard Group.

Developing the knowledge to safely handle future fuels will require partnerships both within and outside shipping. In tangible terms, this means collaborating with other industries and academia to constantly expand our knowledge.

For example, we recently carried out a study on ammonia as a marine fuel in collaboration with TotalEnergies. This project provided detailed insights on the efficiency of ventilation and vapour processing systems, the size of safety zones needed, and the health risks to people exposed to leaks. Studies like this are critical to help us refine our rules, protect crews and passengers, and help first-movers progress with confidence.

In the midst of this explosion of technological diversity and variety, shipping must not forget another essential and invested party: the seafarers who will operate these vessels. As an industry, we have a responsibility to deploy safeguards to protect crews and ensure they have the right training to handle technologically complex fuels and vessels. Shipping needs to listen to seafarers, fully involve them in the development and deployment of new technologies, and earn their trust, too. If innovation will be powered by trust, it all begins – and ends – with people, from technology forward thinkers to those who will manoeuvre the ships of the future on the world's oceans.

Unprecedented pressure from regulators and stakeholders across the value chain will combine to drive the uptake of low-carbon fuels – the key priority in achieving decarbonization and the burning topic of our age.

While the IMO is leading the charge with global regulations like EEXI and CII, regional bodies like the EU are devising their own rules to accelerate decarbonization locally. The EU's Fit for 55 proposals, for example, include measures such as shipping joining the EU Emissions Trading Scheme (ETS) from 2023 and the FuelEU Maritime regulation, which will limit the carbon intensity of energy used on ships.

Meanwhile, financiers have espoused the Climate Bonds Initiative and Poseidon Principles, charterers have joined the Sea Cargo Charter, cargo owners are adopting climate standards for the ships they use while insurers have created their own set of Poseidon Principles. All this is driving the

industry to move to cleaner fuels. However, the only available contenders right now are LNG, LPG and methanol. LNG is leading the way in terms of newbuilding orders with alternative fuels. Recently, there is very strong interest in methanol as a fuel, and orders have started to increase driven mainly by tankers and container ships. As fossil fuels LNG, LPG and methanol are only a stopgap, so in future we will need low-carbon bio or synthetic equivalents. We believe that advanced (sustainability certified) biofuels can play a big role in the medium term beyond 2025, mainly as drop-in fuels. Biogas can be used to make bio-LNG and bio-methanol, but there are limits to how much can be produced given the amount of biowaste needed. After 2030, we believe synthetic fuels will start to become more important on the decarbonization pathway.

While hydrogen is in the works for smaller vessels, ammonia is centre stage for large cargo ships, with the first two-



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stroke engines slated to come to market in 2024/2025. However, storage/supply technology needs further work especially on

New value chains are emerging as policy pushes the industry towards a low carbon future.

The urgency of finding solutions to the climate change problem is growing as a priority for both domestic and international policymakers. Around a quarter of the world's greenhouse gas (GHG) emissions are linked to international trade, according to the most recent estimates. As the lifeblood of global trade, the shipping sector faces significant challenges in decarbonizing due to its diversity, as well as the fact that clean fuels such as green hydrogen, ammonia and methanol are not yet available at scale.

Policymakers are considering ways to encourage the shipping industry to use low-carbon modes of transportation. Individual countries may include targets for shipping in their national mitigation plans, and they may be able to act more promptly than the IMO.

For example, the European Union's (EU) proposal to extend the scope of its Emissions Trading System (ETS) to include shipping, as well as discussions of market measures at IMO will put a price on carbon for the first time.

As we evaluate what impact all this may have on our industry, it is helpful to consider how we arrived at this point. Over recent years, ABS, being close to the devel-

opments, has reported on the challenges that lie ahead, as GHG reduction targets are set and pathways are considered to meet these targets. In that context, we have explored the boundaries of existing technologies and discussed emerging future solutions identifying the barriers or obstacles that need to be overcome in order for them to present a safe, practical and feasible solution.

As we shifted from 2021 into 2022, we acknowledge that over the last four years our industry has achieved a higher maturity level with regards to the knowledge and awareness of the decarbonization challenge. We started with attempting to define the riddle of decarbonization as we unraveled the technical and operational challenges that were assumed with the introduction of the 2030 and 2050 carbon intensity reduction targets. Regulations that are meant to drive the transition towards those targets have started taking shape and form.

That allowed us to benchmark vessels and fleets in a more precise manner and to explore, with higher fidelity, technological improvement options and fuel pathways that can potentially lead to carbon neutrality. This higher fidelity allowed us to identify policy and regulatory gaps that have to be implemented beyond the maritime industry in order to support shipping on its journey to lower carbon intensity. We were

then able to understand that the energy transition requires a robust value chain and we started investigating how energy carriers or fuels should be produced and more importantly what methods we should put in place in order to address carbon neutrality by implementing a life-cycle approach.

At every step of the way, through collaborative research and joint efforts we are exploring the boundaries of what is currently feasible and highlighting areas where more emphasis should be given in order to have safe and sustainable solutions for our decarbonization targets. We examined new energy efficiency technologies (EETs), advancing digitalization in order to increase operational efficiency and ultimately the implementation of new fuels and energy carriers. And through the prism of trade changes due to climate changes and the effect on global routes and associated emissions, we attempted to look ahead into the long-term and estimate the energy mix of the future based on certain scenarios.

Looking ahead through 2022 and beyond it is clear, shipping will likely require value chain adaptations and policies in support of its decarbonization journey, as we identified in the previous editions. In order to achieve net-zero emissions across the value chain by 2050, the energy system will need to be transformed using a wide range of technologies.

safety. DNV is conducting risk assessments on ship design, we have been involved in bunkering studies for Oslo and Amsterdam and are now leading a bunkering safety study for the Port of Singapore.

Suppliers interested in starting infrastructure investments for green methanol, ammonia, hydrogen and other fuels need to see demand certainty from shipping. Looking forward to 2035, there will be more availability, but the process will take time. As a priority we are helping owners and suppliers come together to help both sides move faster.

While energy efficiency is a key component in reducing energy use, in addition to the use of low-carbon fuels, a third decarbonization option is on-board carbon capture. Due to the costs involved we need carbon pricing to make this attractive. It also requires the development of land-based reception and storage infrastructure. Meanwhile, some countries, especially in the EU, are sceptical of carbon

capture on board due to fears it will be hard to track what happens to the CO<sub>2</sub> elsewhere.

As a side note, we get many questions about nuclear power, specifically Molten Salt Reactors (MSRs). If progress is smooth, the first marinized MSR demonstrator may emerge by 2028–2030. Even if the technology is accepted by the public, we don't expect commercial uptake before 2035 as regulations will have to be updated. MSRs may indeed be part of the long-term decarbonization solution, but in the meantime, we need something else.

Despite the uncertainties, owners should be looking to build their future fuel strategy both for existing ships and newbuilds right now. Cost will decide the best options case by case. DNV is supporting many owners assess their fuel options using our FuelPath Model, which is a systematic techno-economical approach to facilitate their journey. We set the target CII trajectory, review feasible design op-

tions considering technical maturity, engine fuel convertibility and fuel storage and supply systems, assess the economic potential of each strategy over the ship's lifetime and study the technical impact on ship design and future operations. The final Specification Review combines our expertise and experience to ensure the chosen solution is fit for purpose. As the saying goes, if you can't measure it then you can't do anything about it. To further support the industry on its journey to carbon neutrality, we have developed a number of digital class tools which focus on emissions monitoring and verification, as well as an application which provides a 360 perspective on compliance, helping operators stay ahead of the regulatory curve. For the latest decarbonization projections concerning the future fuel mix, availability, cost and much else, stay tuned for the launch of our annual Maritime Forecast report during SMM in September.



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Energy efficiency, behavioral change, electrification, renewables, hydrogen and hydrogen-based fuels, and carbon capture, utilization and storage (CCUS) are the key pillars of decarbonizing the global maritime energy system.

Hydrogen is a versatile energy carrier, the fundamental building block that is used to produce other energy carriers and supports the transition. A zero-carbon or carbon-neutral value chain will require hy-

drogen positive energy tokens to be produced utilizing renewable energy sources or nuclear energy. The value chain will also require storage of the hydrogen energy, transportation and possible conversion into other forms and finally distribution and energy conversion through consumption. Although hydrogen can be produced from almost any energy source, the majority of hydrogen used today in oil refining and chemical production comes from fossil fuels, with significant CO<sub>2</sub> emissions.

To help address this, an essential component of global efforts to achieve net zero will be CCUS. Since a wide range of technologies will likely transform the way we produce and consume energy, CCUS will need to play a significant role alongside electrification, hydrogen and sustainable bioenergy. In order to achieve net-zero goals, CCUS reduces emissions in key sectors and removes CO<sub>2</sub> to balance emissions that cannot be avoided.

Hydrogen fosters cross-value chain collaboration by bringing different stakeholders together which will also help the maritime sector achieve net-zero goals. The associated regulatory pathways will evolve alongside as it influences ship design, technology and operations.

In recognition of this goal, ABS explores the two energy transition value chains in

the fourth of its series 'Setting the Course to Low Carbon Shipping'.

This publication examines how the maritime sector will be impacted based on the latest trends and developments out of the IMO, technology readiness of low carbon and alternative fuels and the hydrogen and carbon value chain accelerators. It also examines the possible capacity demand and related emissions output trends on a global basis to envision the environments in which targets may be achieved through the prism of those value chains.

Furthermore, we examine how shipping becomes a significant value chain enabler as it supports the transportation of energy and explores technologies that leverage these new energy sources. We once again attempt to explore the boundaries of applicability by looking into conceptual designs of liquefied hydrogen and liquefied CO<sub>2</sub> carries and how that could support the value chains. We also evaluate the challenges and considerations of capturing carbon on board.

With the Outlook as guidance, we believe industry stakeholders can understand the complexity of the task-at-hand, make informed decisions and move forward effectively as they evaluate their options for a transition to low-carbon operations and subsequently a zero-carbon future for shipping.

Shipping faces a seemingly impossible task: to decarbonise a global industry that supports all aspects of life and work in every part of the world. And because of its interconnected and integrated networks, its international actions inevitably interact with regional and local initiatives, giving it a visible presence that attracts attention from far beyond our own regulators and stakeholders.

Tackling this challenge requires an equally broad approach. At a macro level, IMO is creating mandatory technical standards; at a micro level, individual companies are setting their own decarbonisation goals. In the middle are service sectors – such as finance, chartering and insurance – that are establishing business principles intended to encourage environmental operating practices.

These are all welcome incentives, but they have created a maze of pathways towards decarbonisation. Here in China, for example, President Xi Jinping announced a goal in 2020 for the nation to reach carbon-neutrality by 2060, with carbon emissions peaking before 2030. Our national shipping sector – including CCS – must take this into account alongside any international targets.

In fact, CCS had been actively researching low or zero emission fuels long before that target was announced. For example, as far back as 2013, CCS was exploring hydrogen's potential, looking at everything from powering fuel cells to tackling hydrogen-fuelled fires. At the same time, our researchers were evaluating a host of alternative fuels, such as



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LNG, various alcohols, bio-fuels, ammonia and renewable electricity from wind and solar.

Without doubt, the biggest decision facing shipping today is what approach to take to the IMO 2050 greenhouse gas emissions (GHG) target. IMO's initial GHG strategy was adopted in 2018 with two goals. One is to phase out GHG emissions from international shipping as soon as possible this century and by at least 50% by 2050, compared to 2008. The other is to reduce CO<sub>2</sub> emissions per transport work – termed 'carbon intensity' – as an average across international shipping, by at least 40% by 2030, pursuing efforts towards 70% by 2050, also compared to 2008.

However, speaking in May to the World Gas Conference in South Korea, IMO Secretary-General Kitack Lim acknowledged that »we need accelerated action in this decade to set the path for shipping's decarbonisation, in line with the objectives of the 2015 Paris Agreement and the Glasgow Climate Pact adopted at COP 26 and the most recent IPCC climate reports«.

With that in mind, an upgraded GHG strategy is set to be adopted mid-2023, which Mr Lim summarised as »a set of enhanced ambitions in line with the global agreements, and further mid-term measures, such as those that incentivise R&D into new fuels and the move to cleaner fuels, as well as carbon pricing mechanisms«.

A huge amount of work is underway to explore the various alternative green technologies that will fuel this journey. But there are many obstacles ahead and it is up to the whole industry to come together to successfully navigate them.

For instance, we believe much more work is needed to evaluate the carbon emissions reduction effect of the different alternative fuels that are being developed and we welcome the work that IMO has been doing to develop guidelines to accompany its Carbon Intensity Indicator (CII). Nonetheless, we have yet to see a unanimous route when it comes to the development of alternative fuel technologies in shipping, with different parties holding a range of different views and approaching the subject in a variety of ways.

We believe there should be an evaluation system, based on multiple factors

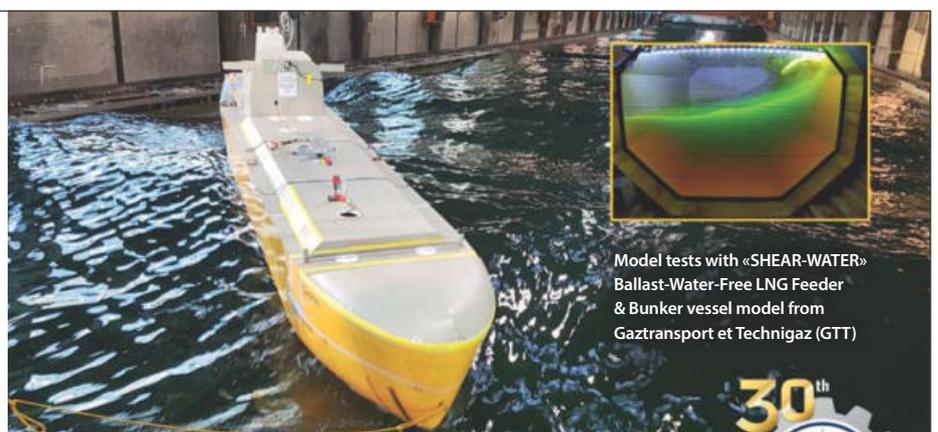


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such as ship type, ship routes and emissions reduction targets. This would be a major step forward and would allow the creation of a »scenario-based roadmap« for the development of alternative fuels, which would in turn aid the quest to provide solutions for the whole industry chain.

There are also concerns within the industry over the lack of a robust regulatory framework, standards and guidance in the development and use of new fuel technologies. Distribution infrastructure is also not yet in place to meet future demand.

At CCS, our experts have assessed a number of potential future fuels, based on a range of factors, including their energy availability, economic efficiency, technical maturity and contribution to GHG reduction. They also took account of current regulations, rules and standards.

From that work, we believe that methanol, hydrogen and ammonia are the main alternative energy sources for shipping, with the best prospects for development and adoption moving forward.

Methanol looks to be a promising alternative maritime fuel, although production capacity and supply issues must be addressed. CCS has carried out research on the potential of »green« methanol in China which has highlighted what we believe is its great future potential.

The development of 'green' hydrogen and ammonia will also play a key future role. Their production is relatively mature but much more work is needed on their application in the maritime sector

and in developing codes and standards surrounding their use.

CCS has carried out research on key technologies for ammonia combustion in ships, focusing on the technologies of ammonia fuel storage, bunkering and supply, ammonia fuel engine and toxic effects. We issued AiP for the conceptual design of an ammonia-powered vessel to Cosco Shipping and Maric and released Guidelines for Ships Using Ammonia as Fuel, 2022.

Hydrogen also shows great potential as a zero-emission fuel in internal combustion engines. It can also react with a catalyst to create electricity in a fuel cell to power an electric drive train. CCS published its first guidelines for harnessing hydrogen as a commercial marine fuel as long ago as 2015, followed in 2017 by guidelines for using alternative fuels. Both were updated in 2020.

Our detailed research found that a hydrogen-enabled ship could be as safe as one powered by conventional fuels, provided its risks are considered. For example, a ship's design should allow any leaking hydrogen to easily escape to the atmosphere and not accumulate between decks.

LNG, an option favoured by many shipowners currently, benefits from a complete industrial chain and mature marine technology, codes and standards. In addition, it will help achieve IMO's 2030 carbon intensity reduction target. However, there are mounting concerns over methane slip from fossil LNG, and more attention must be paid to the production and supply of carbon-neutral LNG.

Biofuel, on the other hand, is not an option in China. With such a large population, food production must take priority over growing crops for biofuel.

Although regulations and technical matters are still being refined, some shipping companies are making their own investments into decarbonisation and CCS is working with some of them.

In September 2021, for example, we signed a framework agreement with Maersk to kickstart research between Chinese and European enterprises and institutions aimed at speeding up decarbonisation in shipping.

Three expert groups have been established to carry out research on risk assessment and regulation development, life-cycle greenhouse gas emissions and the sustainability and availability of marine alternative fuels.

That agreement followed one that we signed in May last year with Cosco Shipping Group to tackle greenhouse gas emissions in the maritime sector by researching energy consumption and viable technological solutions. It has been structured to pool the two organisations' resources to support China's 'carbon peak and neutrality' target, along with international efforts to reduce maritime transport emissions.

Initiatives such as these are essential if our global decarbonisation ambitions are to be met in the timeframes we have set and which the global community expects from shipping.

Alternative fuels are an unavoidable choice for this journey and we all must work together to plot the right course to its conclusion.

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» The need to decarbonize globally is vital for our future: securing decarbonization technology is essential to provide sustainable growth in the maritime industry.

Shipping companies are still assessing the most suitable technological countermeasures and eco-friendly fuels to enable them to comply with continuously stringent GHG emission regulations. Uncertainties around which green fuels will be more widely adopted in the future and how the application standards will change make this challenge even harder.

To address uncertainties and support shipping companies as they implement countermeasures, the industry-university-institute network should be advanced to form a solid cooperative ecosystem through which a range of technical information can be gathered and various countermeasures discussed.

Using joint consultative bodies consisting of the maritime industry representatives, government, universities and institutes such as the Maritime Cluster Networking in Korea (MacNet) or the Maritime Cluster of Northern Germany (MCN), which has already been active, may be one way to do this.

Based on various methods discussed under the maritime clusters, the maritime industries and government should participate in international conferences where decarbonization regulations are decided, such as the International Maritime Organization's (IMO's) Marine Environment Protection Committee (MEPC) and the International Maritime Research Council (IMRB), in order to resolve uncertainties.

Another priority is to develop core eco-friendly technology with collaborative projects from the maritime industry.



*Michael Suhr*  
*Regional Director North Europe*  
*Korean Register*

Shipping must transit to greener alternative fuels if it is to achieve its decarbonization goals, and methanol and ammonia are among the most promising green fuels in the future. Methanol is considered to possess high potential for commercialization as it offers fewer technical difficulties than LNG and relatively less toxicity than ammonia.

Although methanol has a limited supply chain compared to ammonia, it can be stored in a liquid state at room temperature, making it easier to store and transport, and requiring less volume than LNG, hydrogen and ammonia.

On the other hand, ammonia is expected to be advantageous in terms of operational costs due to its relatively low price. As both options continue to mature, along with the development of the related infrastructure, both fuels are predicted to be competitive low-carbon marine fuels in the future.

KR has been working to develop technology for methanol and ammonia as marine fuel, producing meaningful results including Approval in Principle (AIP) awards to a methanol dual-fuel 300,000 tdw crude oil carrier (VLCC) and two green ammonia-fueled ammonia carrier

and bunkering ships. Additionally, an AIP for modern freighters using methanol fuel was successfully completed for a German ship owner.

Some of our recent work also includes other options that can be used to support decarbonization. For example, KR recently awarded AIP to a 40K CBM LCO<sub>2</sub> carrier that was developed to safely transport CO<sub>2</sub> captured in the supply chain. In addition, KR awarded Type Approval for a direct CO<sub>2</sub> emissions measurement system on vessels called »Carbon Lens«.

Providing convenient and advanced services to better assist our customers in complying with strengthening GHG emission regulations is also very important to KR. In 2019 KR launched »KR Gears«, a GHG online data management system that has been significantly upgraded since.

The most recent update to KR-GEARS included development and verification services for »Ship Energy Efficiency Management Plan (SEEMP) Part III«. KR plans to further upgrade KR-GEARS within this year to include a CII response simulation function that enables scenario creation for each energy efficiency enhancing technology that can be applied to a vessel, such as fuel-efficient operations, main engine improvements and use of alternative fuel.

KR is ready to accompany and actively support the process towards green fuels. I personally strongly believe in green methanol and can only recommend every shipowner to definitely consider this fuel in newbuilding projects. We are happy to act as a consultant and technical expert organization on this topic and KR North Europe will be happy to answer any questions on alternative fuels.



There is a need for a transformation in training and skills to ensure future fuels/energy sources are taken up safely.

Class has the expertise, experience and knowledge to help maritime supply chain stakeholders address the challenges our industry faces. One of the key challenges we must rise to collectively is providing a safety framework for supporting the decarbonisation of the sector.

Safety can never be taken for granted. Low and zero-carbon fuels/energy sources do present significant risks and it is now important that concept projects continue to move forward into large-scale demonstrators. The industry must be agile and the right balance for future fuel safety frameworks must be struck. It is essential that whilst we ensure rules do not prohibit development, we do not compromise on safety either.

Decarbonisation is a process, the IMO has set out an ambition to reduce GHG emissions from shipping by at least 50 percent by 2050. For that outcome to be achieved safely, we need a comprehensive transformation agenda which responds to the second and third-order consequences of a new energy system in shipping.

Safety standards under the Standards of Training, Certification and Watchkeeping (STCW) convention need to rapidly mature into a training and skills framework. The framework needs to enable seafarers to manage and work within the complex systems on ships that are likely to be in operation from the mid-2030s and beyond.

Training is required across all sectors, not just for the seafarers, but for naval architects, Equipment manufacturers, shipyards (new and repair) as well as ports.

Each alternative fuel being evaluated has some form of risk attached.



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*Mark Darley*  
*Director, Marine & Offshore*  
*Lloyd's Register*

The choice of methanol, ammonia, hydrogen, biofuels or others will depend on a vessel's operating profile as well as cost and availability.

Ammonia – a future fuel expected to account for 20% of industry usage by 2050 as outlined in the Shipping Decarbonisation Survey by LR and Lloyd's List – can cause fatalities with concentrations in the air as small as 0.25%, making the fuel highly toxic to people.

There is a need to understand the potential negative impacts on human lives, water and soil in case of leakage or accidents, and how to mitigate these types of risks. A new safety pathway will be essential as ship owners take up ammonia as an alternative fuel.

Hydrogen, another prospective future fuel, has a boiling point of  $-252.9^{\circ}\text{C}$ , presenting significant storage and fuel supply system challenges. Hydrogen is also highly flammable and is not easy to detect. To make it accessible, the industry will need harmonised regulations and classification rules for the storage, handling and bunkering of hydrogen.

LR has already laid the groundwork for operational safety in Methanol usage as a future fuel with the

publication of the Methanol Bunkering Technical Reference. The Technical Reference provides safety management protocols that, when applied, would significantly reduce concerns around methanol flammability and toxicity in methanol bunkering.

We cannot, however, write prescriptive rules without prototypes. Green corridors will be the key to supporting first-mover activity and learning. LR has put this into action with our »Silk Alliance« green corridor project.

Our Maritime Decarbonisation Hub is working with 11 leading cross-supply chain stakeholders to develop a fleet fuel transition strategy that can enable the establishment of a highly scalable Green Corridor Cluster in Southeast Asia. Ships themselves will of course need to adapt for the long-term, potentially requiring new fuel tanks, modified engines and fuel supply systems, but this will be a small element of the total cost of operation.

We also need demonstrators entering service in controlled environments to allow for controlled testing. It is therefore vital that concept projects move forward into large-scale demonstrators. The industry is now starting to see this happen. LR for example is involved in the Castor Initiative, a seven-party cross-supply chain collaboration behind ammonia fuelled zero-emission VLCCs.

Each energy transition pathway will come with its own portfolio of opportunities, challenges and uncertainties. It is our responsibility to recognise these and build them into investment decisions.

The maritime decarbonisation journey will continue for several decades, and it calls for collaboration and regulatory and policy certainty so that we can all safely navigate the changes ahead.



Cumulative class society knowledge and expertise in rulemaking and certification is increasingly proving key to developing the robust frameworks that will support practical progress on maritime digitalization and decarbonization. ClassNK has developed two key initiatives to better respond to industry needs..

Launched in 2020, Innovation Endorsement provides a third-party evaluation and non-mandatory certification service for innovations in shipping, with a focus on safety, green, and labor as well as digital. The »speed-focused service« has been devised to help fresh solutions overcome the challenges that often face pioneers.

By the end of April 2022, 77 ships had been certified with Digital Smart Ship (DSS) notations as equipped with advanced digital solutions like energy efficiency, machinery monitoring and data processing/transmission to shore. In addition, 15 products and solutions had secured Innovation Endorsement certification, with 12 more under review by ClassNK's dedicated task force. The service was also supplemented in 2021 with new Advanced Environmental Awareness (a-EA) notation.

ClassNK's second initiative to help shipping decarbonize gathers its greenhouse gas emissions expertise under a new portfolio of Zero Emission Transition Support Services. The enhanced focus is designed to help customers make a smooth transition to zero-emission while planning and managing GHG emissions in their daily business operations.

Shipping's progress towards emissions-free shipping will rely heavily on digital technology and data-driven processes, and ClassNK has responded by launching the cloud-based platform ZETA – Zero Emission Transition Accelerator.

Devised to streamline greenhouse gas emissions management at vessel and fleet level, ZETA offers ship managers, owners, and charterers a digital tool to achieve accurate CO<sub>2</sub> emissions monitoring and simulate/report carbon intensity indicator (CII) ratings.



ClassNK ZETA offers owners and operators a solution to keep on top of their GHG emissions that is also fully compatible with IMO reporting requirements.

Drawing on a vessel's operation status, the ZETA Vessel Monitoring module instantly displays the estimated annual CO<sub>2</sub> emissions and CII ratings to support decision-making regarding possible corrective actions. Fleet Monitoring shows the same information across the fleet and allows users to evaluate the impact of emissions-reduction measures by benchmarking against past emissions data.

ZETA Simulation demonstrates the changes in the CO<sub>2</sub> emissions and CII ratings of a vessel or fleet that would occur under emissions-reduction measures such as slow steaming, using energy-saving devices, or selecting alternative fuels.

Finally, the Periodical Report details the emissions performance of ships and fleets to meet the reporting requirements of stakeholders. For individual vessels, it provides a voyage summary and reflects CO<sub>2</sub> emissions, CII ratings, and speed-CO<sub>2</sub> emissions performance. At the fleet-wide level, it provides a fleet summary and describes the CO<sub>2</sub>-emissions, CII ratings, and EEOI (Energy Efficiency Operational Indicator) performance of each ship.

Enhancements envisaged include additional emissions reporting to reflect the needs of industry frameworks like the Sea Cargo Charter and the Poseidon Principles, and a possible extension to include other GHGs, such as CH<sub>4</sub> and N<sub>2</sub>O, should a unified framework for conversion factors be agreed.

ClassNK ZETA streamlines and simplifies emissions monitoring, simulation, and reporting processes to save the user time, money, and administrative effort in their endeavors to comply with accelerating regulatory requirements.

Crucially, like Innovation Endorsement, it is designed to evolve with regulations, drawing on ClassNK's dialogue with its customers to ensure that the user's needs are met not only today – but until zero-emissions shipping becomes a reality.



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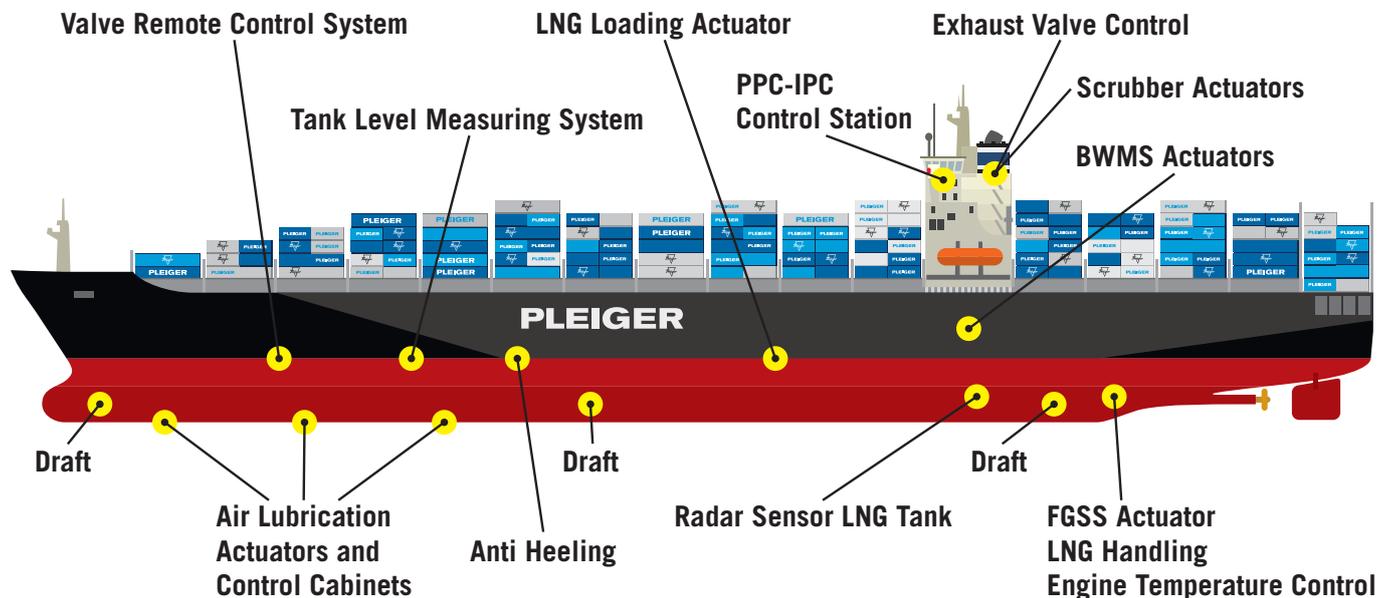
Even subsequently added actuators can be easily integrated into existing systems. These are the great strengths of EHS - THE ORIGINAL!

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# Cluster for lightweight construction

The MariLight network in the German Shipbuilding and Ocean Industries Association (VSM) brings together stakeholders who are driving forward the use of lightweight construction in the maritime industry

The Federal Ministry of Economics and Climate Protection (BMWK) attributes a game-changer role to the cross-sectional technology of lightweight construction. In the future, it will play a significant role in securing competitiveness and jobs and implementing environmental and climate protection even better. BMWK launched the Technology Transfer Programme for Lightweight Construction (TTP LB) to stimulate the application of lightweight construction.

This key technology also offers the maritime sector great potential, which can be used to meet future challenges with the help of cooperation, technology transfer and targeted research and development. To accelerate and support this process, the now established maritime lightweight network MariLight.Net was launched in 2019. It is organised within the German Shipbuilding and Ocean Industries Association (Verband für Schiffbau und Meerestechnik) by the Center of Maritime Technologies (CMT). It is a central hub for the expansion of industry-wide expertise.

The expansion of the lightweight construction network MariLight into an innovation cluster is part of the »MariLightCluster« project, which has been funded since July 2021 as part of the Technology Transfer Programme for Lightweight Construction (TTP LB) of the Federal Ministry of Econ-

omics and Climate Protection (BMWK). The focus here is mainly on technology development and transfer, as well as the development of innovative concepts for maritime lightweight construction.



MariLightCluster actively promotes cross-sectoral knowledge transfer by networking shipyards and suppliers with industrial companies, material manufacturers and research institutions that already use fibre composites and corresponding joining methods or other relevant lightweight construction technologies. This is done, among other things, through regular targeted specialist events such as workshops to promote technology transfer, for example, with experts from aviation, rail vehicle construction and civil engineering.

Existing needs, potentials and still existing hurdles for maritime lightweight construction are identified and analysed, among other things, within the framework of regularly meeting working

groups on relevant specialist topics. The knowledge gained in this way will be considered during the project in a specifically developed strategic roadmap, which will show an in-depth analysis and prioritisation of necessary steps to increase the application density and innovative strength of maritime lightweight construction.

MariLightCluster also functions as a platform for exchanging knowledge and experience on maritime lightweight construction: In addition to regularly published member portraits, MariLight participants share their perspectives on lightweight construction and provide food for thought and best practice examples to highlight successful lightweight construction applications.

Numerous opportunities for communication and networking with experts from the shipbuilding industry and other sectors are offered annually by the MariLight overall network meeting, which was able to take place again as a face-to-face event for the first time in May 2022.

The venue for the 2022 network meeting was the »Forum Alte Werft« in Papenburg, a historic place full of maritime history. In the conference rooms of the adjacent former mechanical engineering hall of the Meyer shipyard, everything revolved around lightweight construction for two days.

In addition to a varied programme of lectures highlighting current innovations



Impressionens from the General Meeting



© MariLight

## The cluster work

### Connect

*MariLight.net connects members and interested companies in maritime lightweight construction and promotes cross-sector technology transfer*

### Communicate

*MariLight.net informs members about relevant news and dates and is a central contact for maritime lightweight construction*

### Support

*MariLight.net supports innovations and research projects and organises working groups on specialist topics such as fire protection and engineering in lightweight construction.*

in lightweight construction and examples of successful technology transfer, the event included an exhibition area where research institutions and companies presented themselves and their lightweight construction solutions. All participants used Breaks in the event extensively to gather information and expand their networks.

Before all visitors headed home with new input, the successful network meeting was rounded off by an informative visit to the nearby Meyer Werft shipyard.

### Best practice excursion

The production and distribution of ultra-light, non-combustible, composite sound- and heat-insulating sandwich panels, which are used in shipbuilding as well as in the offshore and onshore sector for interior partition walls, ceilings, floating floors and other room construction elements, form the field of activity of MariLight member CBG Composites GmbH, based in Wipperfurth (NRW). These panels are based on a patented use of endothermic technologies in combination with the processing of almost 100% natural, sustainable, recyclable, non-organic materials.

This best-practice example highlights the successful development process of the SeaPan FF 30/60 floating sandwich panel, which is used, among other things, to produce floors in shipbuilding.

Traditionally manufactured, floating A-60 floors are usually multi-layer constructions that must be produced manually and with great effort. They are often heavy with a weight per unit area of 30–40 kg/m<sup>2</sup> and thickness dimensions of 70 mm or more, which is very space-consuming.

### Challenges

The challenge here is to develop thinner, lighter, less complex, and oper-

ational constructions that meet the MED's valid requirements (Marine Equipment Directive). This certified product fully covers the fire resistance requirement of the A-60 standard specified by the legislator for floating floors. In addition to being highly fire-retardant, the panel is far lighter and thinner than traditionally manufactured floor panels, with a weight of 12.5 kg/m<sup>2</sup> and a thickness of 30 mm.

Along the solution path, the ideal constructive and technological composition of the materials used, in combination with the conferral of endothermic properties for the construction, has been determined. In doing so, CBG Composites GmbH draws on several years of experience in the development, production and distribution of sandwich panels in shipbuilding and unerringly works out a suitable choice of materials.

The specific requirements related to the intended use of the end product were the heat-shock-free installation of panels and the optimum distribution of forces acting at specific points.

The heat-shock-free installation was solved with the help of a change in the constructive design of the panel shape, and the use and constructive adaptation

of an optional load distribution plate fulfilled the requirements of the force distribution.

The panel created during development is made from several layers in a sandwich process using special presses. The panel is robust, has a flat and smooth surface and can be adapted with millimetre precision directly on site using conventional cutting tools.

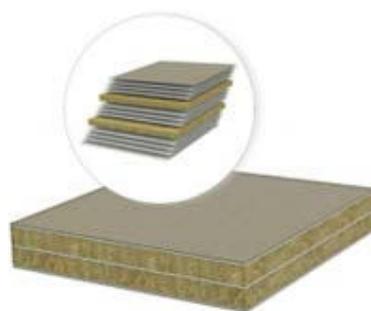
By the advantages listed, CBG Composites sees excellent sales potential in developing and completing the panel described. The use of the »CBG SeaPan FF 30/60« panel saves approximately 20 kg to 30 kg of weight per square metre of built-up floor and could thus lead to savings of approximately 600 t to 900 t in the construction or renovation of a cruise ship (assumption: 30,000 m<sup>2</sup> of floor covering), calculates Alexander Lebedev, Director Sales and Marketing at CBG Composites.

### Technology transfer on 08 October

Experts from industry and science will once again provide an insight into successful lightweight construction applications in various fields at the second technology transfer workshop of the MariLightCluster project, which will take place in Hamburg on 19 October 2022. CMT invites the MariLight network partners and all stakeholders interested in maritime lightweight construction to an event for cross-sector exchange. More event details will follow in the event calendar at [www.marilight.net](http://www.marilight.net).

### MariLight at SMM 2022

As part of the Green Transition Stage, the Center of Maritime Technologies will present the network and research and innovation projects of individual partners on the third day of SMM from 11:30 am to 12:30 pm. ED



Aufbau SeaPan



© HESC

Die von Kawasaki Heavy Industries gebaute »Suiso Frontier« ist der weltweit erste Wasserstofftanker. Das 116 m lange Schiff kann 1.250 m<sup>3</sup> transportieren

## Shipping the Sunshine

Die Akteure hinter dem Vorhaben »Hygate« haben Pläne entwickelt, wie man Deutschland mit grünem Import-Wasserstoff aus Australien versorgen könnte. Dafür werden aber auch geeignete Schiffe gebraucht. Und die Frage des richtigen Energieträgers ist noch zu klären

Es geht darum, »den Sonnenschein einzufangen und zu verschiffen.« Nicht weniger blumig drückte es jüngst der deutsche Finanzminister Christian Lindner im Bundestag aus, als er nachhaltig erzeugte Energien als »Freiheitsenergien« bezeichnete. Bei derart bedeutungsschweren Aussagen fragt man sich, wie der passende Wasserstofftransporter, quasi das neue »Liberty«-Schiff, aussehen könnte. Wir schauen uns einmal an, wie das alles zusammenhängt und machen eine kleine Reise in eine nicht mehr ferne Zukunft.

Zahlreiche Studien deutscher Wirtschaftsinstitute beschreiben für die nach Deutschland zu importierende Wasserstoffmenge ein noch recht uneinheitliches Bild. Das liegt daran, dass noch nicht absehbar ist, wie schnell der Ausbau von Wind- und PV-Anlagen, der hiesigen Wasserstoffproduktion und der benötigten Infrastruktur gelingen werden.

Zudem ist die Entwicklung des deutschen Primärenergieverbrauchs nicht abschließend absehbar – denn ohne eine Halbierung von heute 3.600 TWh/Jahr auf 1.800 TWh/Jahr durch Effizienzsteigerung ist das Ziel eines klimaneutralen Deutschlands bis 2045 nicht realisierbar. Signifikante, skalierbare Ein-

sparungsmaßnahmen können unter anderem durch die Umrüstung von privaten Gas- und Ölheizungen auf Wärmepumpentechnik, die Nutzung der Kraft-Wärme-Kopplung in der Industrie oder den konträr diskutierten Umstieg vom Verbrenner-Pkw zum E-Auto erreicht werden.

Die Studie »Klimaneutrales Deutschland 2045« geht von einer nach Deutschland zu importierenden Wasserstoffmenge von 44 TWh/a bzw. jährlich 1,32 Mio. t Flüssigwasserstoff (LH2) für das Jahr 2030 aus. Im Jahr 2045 sollen es laut dieser Studie 169 TWh/a bzw. 5,07 Mio. t LH2/Jahr sein. Die Nationale Wasserstoffstrategie (2020) nennt für 2030 einen Importbedarf von 76–96 TWh. Die »Ariadne-Analyse« von Dezember 2021 des Potsdam-Institut für Klimafolgenforschung ermittelte für 2030 einen Importbedarf von Power-to-X- und H<sub>2</sub>-Energieträgern mit einem jährlichen Volumen von 28 TWh bzw. 0,8 Mio. t LH<sub>2</sub>. Für 2045 soll dieser Wert dann, je nach Entwicklung von Primärenergiebedarf und Ausbau von nachhaltigen Energiequellen in Deutschland, zwischen 300 TWh/a und 750 TWh/a bzw. 9–22,5 Mio. t betragen. Die Denaleitstudie beziffert die Wasserstoff-

importe mit 3,7 TWh/a bzw. 0,11 Mio. t für 2030 und 383 TWh bzw. 11,5 Mio. t für das Jahr 2045. Die Zahlen streuen also noch gewaltig.

### Woher kommt der Wasserstoff?

Das ist zunächst abhängig von der Verfügbarkeit von grünem Wasserstoff bzw. dessen Derivaten, zum Beispiel von grünem Ammoniak (NH<sub>3</sub>) oder grünem Methanol. Länder wie Australien mit den Vorhaben »Hygate« und »Hysupply«, Chile (»Haru Oni«), Argentinien (Provinz Rio Negro), Saudi-Arabien (Produktion in Neom & Projekt »Helios«) und die Vereinigten Arabischen Emirate (»KIZAD«) haben sich bereits im Rahmen diverser bilateraler Projekte auf den Weg gemacht, um grünes H<sub>2</sub> und grünes NH<sub>3</sub> zu produzieren und Exportstrukturen zu entwickeln. Nach weitläufiger Auffassung von Wirtschaft und Politik hat die Entwicklung einer politisch sowie technisch resilienten Beschaffungsstruktur von grünem Wasserstoff für Deutschland höchste Priorität.

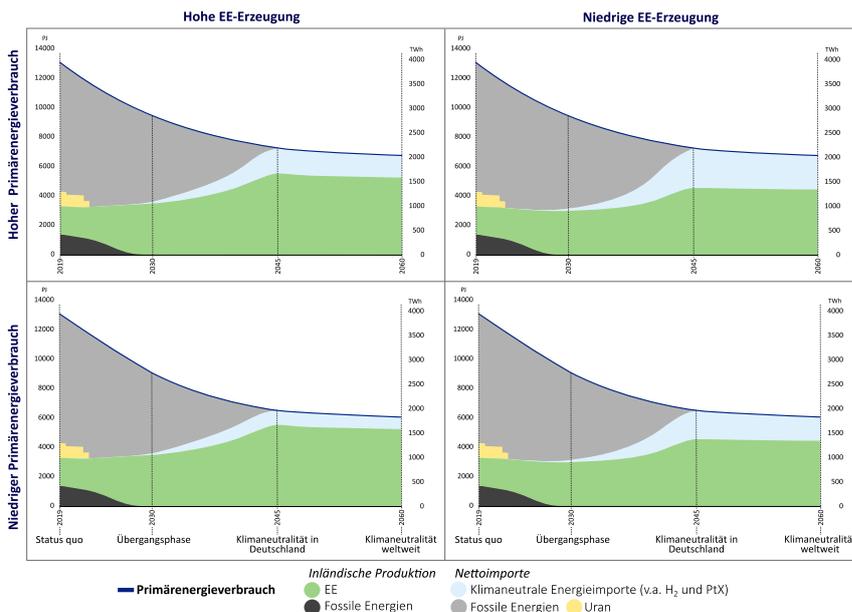
Dabei ist eine Vermeidung von Lieferengpässen durch die Entwicklung eines ausgewogenen Vertragswerkes von langfristigen, strategischen Lieferverein-

barungen ebenso wichtig wie der flexible, taktische Zukauf von grüner Energie, um konkurrenzfähige Preise zu erzielen. Ein liquider Markt ist eine nun zu entwickelnde Grundvoraussetzung. Bis 2045 soll nach Aussage der Studien ein breites, weltweites Angebot von grünem Wasserstoff und dessen Derivaten entstehen.

Für die Anlaufphase der Nationalen Wasserstoffstrategie gehen wir im Rahmen dieses Artikels für das Jahr 2030 von 80 % Importanteil an grünem Wasserstoff über See aus den Ländern Australien, Argentinien und den Vereinigten Arabischen Emiraten (V.A.E.) in Form von Ammoniak aus. Die V.A.E. sind dabei stellvertretend für die Länder der arabischen Halbinsel, Argentinien vertritt Südamerika. Dabei nehmen wir eine jährliche Transportmenge von insgesamt 5,5 Mio. t NH3 für 2030 an.

Der Aufbau einer exportfähigen H2-Produktion via Pipeline aus Ländern mit hohem Potenzial und größerer räumlicher Nähe, etwa in Nordafrika, erscheint derzeit bis 2030 nicht realistisch. Diese Länder haben einen zu großen Nachholbedarf bei der Infrastruktur, besonders bei grüner Energie. Es mangelt dort zudem an ausreichender Finanzierung, die politische Lage in diesen Ländern ist zudem häufig instabil.

Das Verhältnis zu den EU-Staaten, wie zuletzt zwischen Marokko gegenüber Spanien und Deutschland, ist dabei zeitweise angespannt. Bis 2045 könnte der Aufbau einer exportorientierten und verlässlichen Wasserstoffproduktion aus dem nordafrikanischen Raum nach Europa aber durchaus gelingen, so dass von dort ein signifikanter Anteil unseres Pri-

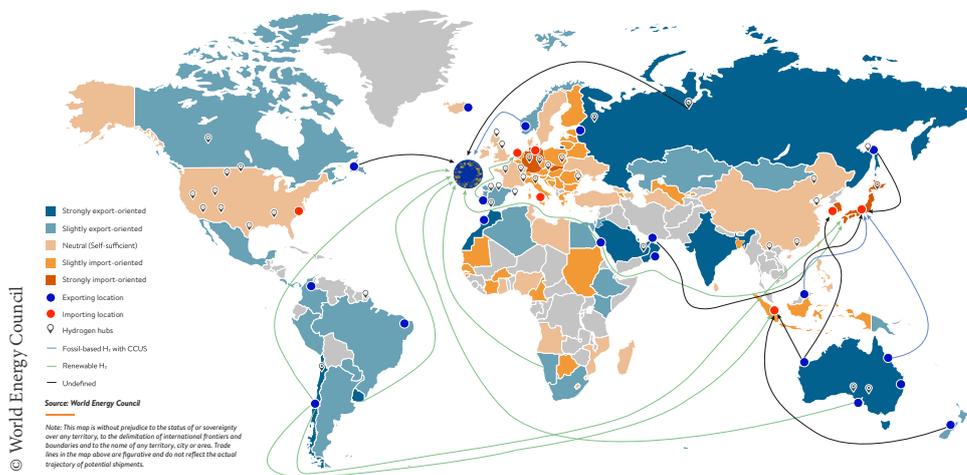


Entwicklung des deutschen Energieimportbedarfs in Abhängigkeit vom Energieverbrauch und von der Erzeugung Erneuerbaren Energie im Inland

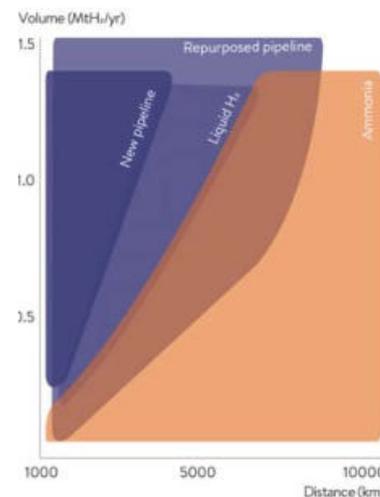
märenergiebedarfs kommen könnte. Für die Endphase des geplanten Energiewandels um das Jahr 2045 herum könnte der Importanteil des über See transportierten Volumens 35% erreichen, das entspräche 21,5 Mio. t NH3 im Jahr, die auch 2045 noch ausschließlich aus den zuvor genannten drei Ländern stammen könnten. Aufgrund der geografischen Lage dieser sogenannten First-Mover zeichnet sich ein signifikanter Bedarf an Schiffen ab.

Wasserstoff kann als Flüssigwasserstoff (LH2) bei -253° C unter atmosphärischem Druck transportiert werden. Diese extrem tiefe Temperatur

nahe dem absoluten Nullpunkt stellt hohe technische Anforderungen an die Konstruktion eines LH2-Carriers. Tanks für Flüssigwasserstoff müssen extrem gut isoliert werden, was aber die Volumeneffizienz seines Transports signifikant verschlechtert. Trotz guter thermischer Isolation bleibt die Boil Off Rate (BOR) bei atmosphärischem Druck mit 0,52% der transportierten Menge pro Tag sehr hoch und erfordert einen großen baulichen und energetischen Aufwand, der bei der Rückverflüssigung des verdampften Wasserstoffs an Bord entsteht. Ob sich der Transport von reinem Wasserstoff – flüssig oder gasförmig –



Karte der potenziellen Import- und Exportdynamik von kohlenstoffarmem Wasserstoff im Jahr 2040



Kosteneffizienz nach Volumen und Entfernung

über interkontinentale Distanzen wirtschaftlich realisieren lässt, erscheint derzeit durchaus fraglich.

Zum anderen stellt sich die Frage, wie viel Energie und wie viel Wasserstoff sich in einem Kubikmeter eines Energieträgers wirtschaftlich über weite Strecken transportieren lassen. Dafür sind die volumetrische Energiedichte eines Energieträgers sowie dessen volumetrische LH<sub>2</sub>-Dichte ausschlaggebend.

Der Transport von flüssigem Wasserstoff (LH<sub>2</sub>) zur See ist dabei mit einer volumetrischen Energiedichte von 2.359 kWh/m<sup>3</sup> im Vergleich zu anderen Verfahren relativ ineffizient. 1 m<sup>3</sup> LH<sub>2</sub> enthält dabei lediglich 70,79 kg Wasserstoff.

## Gebunden in Derivaten

Für lange Transportdistanzen wie von Australien nach Deutschland über 10.400 nm oder aus Argentinien (7.200 nm) bietet Ammoniak (NH<sub>3</sub>) bei -33 °C mit 3.562 kWh/m<sup>3</sup> eine um den Faktor 1,5 höhere volumetrische Energiedichte als LH<sub>2</sub>. Ammoniak enthält dabei 17,5% Massenprozent Wasserstoff, was sich in einer spezifischen Wasserstoffdichte von 119,35 kg H<sub>2</sub> pro m<sup>3</sup> NH<sub>3</sub> ausdrückt – 1 m<sup>3</sup> flüssiges Ammoniak enthält somit gut 1,7-mal mehr Masse Wasserstoff als 1 m<sup>3</sup> flüssiger Wasserstoff.

Ammoniak kann am Zielort unter Energieaufwand wieder in Stickstoff (N) und Wasserstoff (H) aufgespalten werden, um ihn den Verbrauchern zuzuleiten. Da bereits 42% des derzeit auf Basis fossiler Energien weltweit produzierten Wasserstoffs exklusiv zur Herstellung von Ammoniak, zum Beispiel für die Düngemittelproduktion, verwendet wird, wäre der Import von grünem Ammoniak eine sehr effektive und effiziente

Maßnahme, um »fossiles« Ammoniak klimaneutral und direkt durch grünes Ammoniak zu ersetzen und unsere CO<sub>2</sub>-Bilanz entsprechend wirksam zu entlasten.

## LOHC als Alternative

In der Entwicklung befinden sich flüssige, organische Wasserstoffträger, kurz LOHC (Liquid Organic Hydrogen Carrier). Diese Stoffe können Wasserstoff speichern (ca. 6% Massenanteile) und bei Bedarf wieder abgeben. LOHC sind zum Beispiel Benzol, Toluol oder Dibenzyltoluol (DBT).

LOHC haben den Vorteil, dass man die vorhandene Infrastruktur der Mineralölwirtschaft in Teilen weiter nutzen könnte. Bestehende Kfz-Tankstellen könnten im Laufe des weiteren Fortschritts auf LOHC umgebaut werden – der Wasserstoff würde vor Ort wieder aufgespalten und von zukünftigen Lkw, zur Nutzung in deren Brennstoffzellen, getankt werden. Das abgespaltene und dann wieder H<sub>2</sub>-freie LOHC würde in einem Kreislaufverfahren wieder verwendet werden.

Die große Herausforderung dieses Verfahrens besteht aber darin, die bei der Hydrierung und De-Hydrierung der LOHC (Hydrierung = Aufladung mit H<sub>2</sub>, De-Hydrierung = H<sub>2</sub>-Entladung) benötigte thermische Energie durch lokale Kraft-Wärmekopplungssysteme so zu kombinieren, dass ein wirtschaftlicher Gesamtwirkungsgrad erzielt wird.

LOHC bieten nach Angaben in der Fachliteratur Vorteile auf kurzen Transportdistanzen zwischen Produktions- und Verwendungsort. Zu nennen sind weitere »Power to X«-Energieträger wie Methanol, eMethan oder eDiesel, die unter Verwendung von CO<sub>2</sub> aus der At-

mosphäre derzeit mit noch recht niedrigem Wirkungsgrad hergestellt werden könnten.

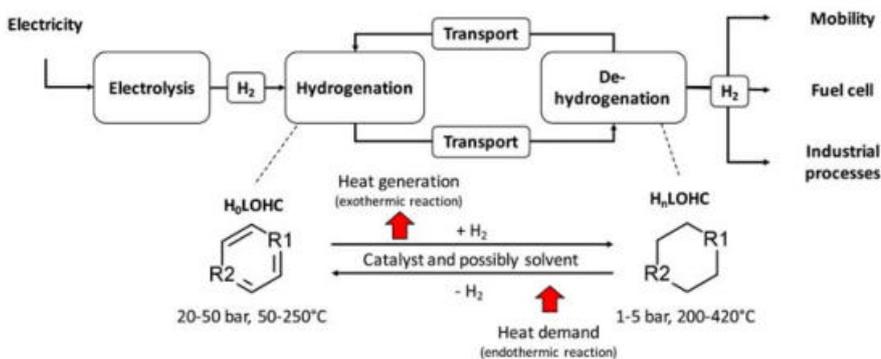
Eine Darstellung der IRENA zeigt die Transporteffizienz der unterschiedlichen Wasserstoffträger. Es wird dort das breite Einsatzspektrum von Ammoniak verdeutlicht. Besonders bei großen Wasserstoffmengen, die über weite Distanzen zu uns transportiert werden müssen, bietet Ammoniak Vorteile als Trägermedium gegenüber anderen H<sub>2</sub>-Derivaten.

Trades zwischen Deutschland und Südamerika (7.000 nm) oder Australien (10.000 nm) sind nur per Schifftransport möglich. Aber auch bei Trades in die Länder der arabischen Halbinsel (4000–7000 nm), die aufgrund der angespannten politischen Situation in dieser Region Wasserstoff auf absehbare Zeit via Pipeline nicht nach Deutschland liefern werden können, hat der Seetransport gute Perspektiven. Aufgrund der genannten Vorteile kann Ammoniak (NH<sub>3</sub>) zunächst als der favorisierte Energieträger betrachtet werden, um klimaneutrale Primärenergie über große Distanzen nach Deutschland zu importieren.

## Bedarf an Tankern

Das in der Tabelle dargestellte Beispiel zeigt, wie sich die zuvor definierten Importmengen für die Planungsjahre 2030 und 2045 mit Hilfe einer Flotte von für diesen Zweck optimierten Ammoniak-tankern aus den First-Mover-Ländern Australien, V.A.E. und Argentinien nach Deutschland transportieren ließen. Der skizzierte NH<sub>3</sub>-Tanker besitzt eine Tankkapazität von 170.500 m<sup>3</sup>, die den Abmessungen eines üblichen LNG-Carriers entsprechen. Zu 98% befüllt ergibt sich ein nutzbares Tankvolumen von 167.090 m<sup>3</sup>, was bei einer NH<sub>3</sub>-Dichte von 682 kg/m<sup>3</sup> gut 114.000 t dw ausmacht. Das Schiff hat dabei einen Tiefgang von etwa 14,3 m. Die Servicegeschwindigkeit wird unter realen Wetterbedingungen bei im Mittel Bft 4 mit 16,3 kn Basis »clean hull« angenommen.

Es werden zunächst Pendelverkehre mit jeweils einer Leerreise pro Rundlauf dargestellt. Der für den Transport per Schiff erforderliche NH<sub>3</sub>-Kraftstoff-Eigenverbrauch der Flotte beträgt rund 6% der transportierten NH<sub>3</sub>-Menge. Für den Normalbetrieb ohne Dockungen ist ein Bedarf von sieben NH<sub>3</sub>-Tankern der beschriebenen Größe mit gut 52 Rundreisen für das Jahr 2030 und 26 Einheiten bei gut



Speicherung und Transport von LOHC – schematisch dargestellt

200 Rundreisen für das Jahr 2045 abzusehen. Ausfallzeiten von konservativ gerechneten 10 Tagen per annum für etwaige Reparaturen in den Jahren zwischen den Dockungen sind dabei berücksichtigt.

### Das Liberty-Schiff

Um die angenommenen Mengen Primärenergie in Form von »grünem« Ammoniak aus den genannten, nicht pipelinefähigen und weit entfernten Ländern nach Deutschland zu bringen, werden Spezialtanker benötigt. Weltweit waren laut Drewry 2021 lediglich 28 NH<sub>3</sub>-fähige Very Large Gas Carriers (VLGC) mit einer Tankkapazität von 70.000 m<sup>3</sup> und mehr verfügbar. Bei den hier beschriebenen NH<sub>3</sub>-Zuwachsraten erscheint ein Ausbau dieser Flotte dringend geboten.

Ein NH<sub>3</sub>-Tanker, der heute geplant wird, muss einen mehrfachen Spagat vollbringen. Es muss zwischen dem fossilen »Heute« und dem de-fossilen »Mor-

gen« einen gleitenden Übergang ermöglichen. Dabei sollte er aus dem Stand heraus wirtschaftlich sein – und bleiben. Da Deutschland, nach der schrittweisen Lösung von fossilen Versorgungsstrukturen abhängig von absolut verlässlichen »grünen« Importsystemen wäre, sollte die Technik eines solchen Schiffes ausgereift und für die Besatzungen sicher handhabbar sein und somit eine hohe Verfügbarkeit der NH<sub>3</sub>-Tankerflotte gewährleisten. Dabei sollte zugleich eine hohe Energie- und Umwelteffizienz des Schiffskonzeptes angestrebt werden.

### Das richtige Design

Gehen wir hier von einer Inbetriebnahme eines solchen Schiffes im Jahr 2025 aus, werden sich für einen wirtschaftlichen Betrieb ausreichende Ladungsmengen von »grünem« Wasserstoff aufgrund der sich noch im Aufbau befindlichen Produktionskapazitäten in den Exportländern nicht sofort in den

ersten Betriebsjahren einstellen. In Kombination mit LPG-Rückfrachten könnte die Anzahl von Leerreisen unter Umständen reduziert werden, da fossile Energieträger noch auf absehbare Zeit die Weltwirtschaft begleiten werden.

Um eine hohe Volumeneffizienz des Schiffes zu ermöglichen, wählen wir für die Ladungstanks das von JMU patentierte SPB-Design (Self-supporting, prismatic-shape IMO type B). Die Vorteile dieses Designs sind unter anderem eine hohe Volumeneffizienz, hohe Betriebssicherheit gegen Sloshing, ein hoher Verfügbarkeitsgrad aufgrund geringer Rissneigung und kurzen Dockzeiten (Herstellerangabe 14 Tage), eine schnelle Reparaturfähigkeit und eine gute Begehrbarkeit rund um die Tanks. Zudem kann man dieses Tankdesign im Gegensatz zu anderen Tanksystemen sicher teilbefüllt betreiben, was für einem »Aufsamletrieb« in der Frühphase der grünen Wasserstoffwirtschaft, zum Beispiel durch das Beladen des Schiffes an zwei

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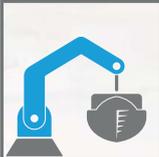
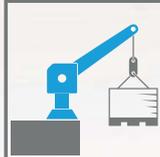
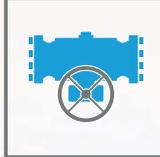


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Terminal in Skagen. Skandinavien könnte bei der Energieversorgung eine wichtige Rolle einnehmen

bis drei Produktionsstandorten mit jeweils einer geringen Produktionskapazität, von Vorteil sein kann. Die Ladung wird mittels einer Kühlanlage während der Reise fortlaufend gekühlt (»fully refrigerated«), um Boil-Off-Verluste an Ammoniak oder LPG zu vermeiden. Nach Angaben von JMU ist das SPB-Design für Drücke bis 4 bar auslegbar, was den Aufwand für die Ladungskühlung senken könnte.

### Der Hauptmotor

Das beschriebene Schiffskonzept bedient sich eines 8 S 60 ME-C-Motors (MCR 19.920 kW) in der Ausführung LGIP oder LGIA. Für einen heute geordneten Tanker bietet sich der mit LPG zu betreibende MAN-LGIP-Motor an, da der Preis von »grünem« Wasserstoff in der Hochlaufphase der Wasserstoffwirtschaft noch zu hoch sein könnte, um ihn unter wirtschaftlichen Gesichtspunkten als Kraftstoff zu verwenden. In dieser Konfiguration würde ein Kraftstoffvolumen von 7.250 m<sup>3</sup> LPG für eine Rundreise Deutschland-Australien genügen. MAN plant, ein Angebot zur Umrüstung von Motoren auf Ammoniaktauglichkeit ab Q1/2025 anzubieten, so dass ein Wechsel auf NH<sub>3</sub> technisch möglich wäre.

Ein LPG/NH<sub>3</sub>-Tanker mit LGIA-Motor und NH<sub>3</sub> als Hauptkraftstoff benötigt ein Kraftstoffvolumen von 2x 7.250 m<sup>3</sup> NH<sub>3</sub> für diese Strecke. Beide Konzepte sind als Dual-Fuel Motor ausgeführt, so dass sie auf Basis der insgesamt 2.000 m<sup>3</sup> fassenden Dieseltanks (ULSFO oder eDiesel) betrieben werden könnten. Dabei ergeben sich Reichweiten von gut 8.000 nm (voll abgeladen) oder 11.000 nm (Ballast). Der erste Serienmotor soll 2024 als 7 S 60 ME-C LGIA vom MAN Lizenznehmer Mitsui an den ersten Kunden abgeliefert werden.

Erwähnenswert ist, dass die Vermeidung von klimaschädlichen Lachgasemissionen (N<sub>2</sub>O, 300-fache Klimawirkung gegenüber CO<sub>2</sub>), laut MAN durch innermotorische Maßnahmen (Abgasrückführung & Motortuning) sowie durch Abgasnachbehandlung (SCR-Katalysator) realisiert wird.

Ein Wellengenerator von 1.800 kWel. sowie ein ORC-System mit zirka 850 kWel., welches die Abwärme aus Kühlwasser und Abgasen nutzt, könnten die Versorgung der elektrischen Verbraucher im Seebetrieb abdecken. MAN und Wärtsilä arbeiten mit dem Zieldatum Ende 2023 an NH<sub>3</sub> Konzepten für passende 4-Takt-Motoren zum Antrieb der Hilfsgeneratoren – Details oder gar Liefer-

daten sind aber noch unbekannt. Die Generatorleistung wird hier mit zunächst 3 x 2.000 kWel. angenommen.

Das beschriebene Schiff ist mit 115.000 tdw gut doppelt so groß wie die größten verfügbaren LPG/NH<sub>3</sub>-Tanker. Die beschriebenen Abmessungen orientieren sich daher an einem aus der LNG-Fahrt bekannten Schiffstyp, was eine weltweite und weitestgehend uneingeschränkte Fahrt ermöglichen soll. Die Entwicklung von größeren Einheiten zu einem späteren Zeitpunkt müsste in Anbetracht der dann absehbaren Entwicklung des H<sub>2</sub>-Markthochlaufs neu betrachtet werden.

Auf Basis von klimaneutralen Kraftstoffen wie zum Beispiel einer »grünen« NH<sub>3</sub>-Ladung in Kombination mit »grünem« eDiesel als Pilot-Fuel würde das Schiff sowohl die Anforderungen nach EEDI als auch CII mit dem Bestwert »Null« erfüllen. Da das aber noch etwas dauern mag, wird das EEDI-Limit 2025 von 3,86 auch unter Verwendung von fossilem LPG und ULSFO (Pilotfuel) mit 3,44 gCO<sub>2</sub>/DWT x nm unterboten. Das CII-Limit des Jahres 2026 wäre in den oben beschriebenen Trades mit fossilem LPG als Kraftstoff und unter Verwendung von 100% klimaneutralem eDiesel erfüllbar.

Abgerundet wird das Konzept durch die für heutige Neubauten zum Standard werdenden Energieeinsparmaßnahmen wie einem optimierten Schiffsform-Propeller-Ruder-Konzept, einem wirksamen Anti-Fouling Konzept, einem Air Lubrication System (ALS), bedarfsgesteuerten Kühlwasserpumpen und Lüftern, einem LED-Lichtkonzept, einem integrierten Performance Data Logging und Reporting System sowie einem Weather Routing & Voyage Planning System.

### Fazit

Angesichts des von deutscher Politik und Wirtschaft breit getragenen Wunsches nach einem schnellen Hochlauf einer defossilen Wasserstoffwirtschaft erscheint die Frage nach dem passenden Schiffskonzept für den interkontinentalen Import von Wasserstoff in Form von Derivaten wie zum Beispiel Ammoniak aus den sich abzeichnenden First-Mover-Ländern dringend nötig und technisch machbar. Eine dafür benötigte Flottengröße von zunächst sieben Schiffen, die bis 2045 auf 27 Schiffe anwachsen müsste, erscheint praktikabel. In Hinblick auf einen schnellen Markthochlauf ist der

Planungsjahr	2030			2045		
LH2 – Importbedarf und Anteil Importmenge See	1,21 Mio. t LH2/a x 80% Transport über See = 968.000 t LH2/a			10,77 Mio. t LH2/a x 35% Transport über See = 3.770.000 t LH2/a		
Transportmenge NH3 - See	968.000 t LH2/a   0,175 t LH2 per t NH3 = 5,5 Mio. t NH3/a			3.770.000 t LH2/a   0,175 t LH2 per t NH3 = 21.500.000 t NH3/a		
Trades	Australien - D	Qatar - D	Argentinien - D	Australien - D	Qatar - D	Argentinien - D
Lieferanteil %	50,0	35,0	15,0	33,3	33,3	33,3
LH2 Bedarf in t/a	484.000	338.800	145.200	1.256.667	1.256.667	1.256.667
NH3 Transportmenge in t/a inkl. 6% Eigenverbrauch	2.931.657	2.052.160	879.497	7.611.812	7.611.812	7.611.812
NH3 Transportmenge per Rundreise / m <sup>3</sup>	167.090	167.090	167.090	167.090	167.090	167.090
NH3 Transportmenge per Rundreise / t	113.955	113.955	113.955	113.955	113.955	113.955
Bedarf Rundreisen /a	25,7	18,0	7,7	66,8	66,8	66,8
Distanz / Rundreise	20.800	14.000	14.400	20.800	14.000	14.400
mittlere RR-Geschwindigkeit in kn	16,3	16,3	16,3	16,3	16,3	16,3
Seetage / Rundreise	53,2	35,8	36,8	53,2	35,8	36,8
Suez-Kanal - Tage / Rundreise	2	2	0	2	2	0
Tage Laden und Löschen/ Rundreise	3	3	3	3	3	3
Tage / Rundreise	58,2	40,8	39,8	58,2	40,8	39,8
Tage / a	365	365	365	365	365	365
Tage Wartung / a, Jahre 1 - 4 nach Ablieferung	10	10	10	10	10	10
Tage Operations / a, Jahre 1 - 4	355	355	355	355	355	355
Rundreisen / Schiff x a, Jahre 1 - 4	6,10	8,70	8,92	6,10	8,70	8,92
Rundreisen gesamt, Jahre 1 - 4	51,5			200,4		
Bedarf Schiffe / Service, Jahre 1 - 4	4,2	2,1	0,9	10,9	7,7	7,5
Flottengröße - Jahre 1 - 4 nach Ablieferung	7,2			26,1		
Tage Wartung und Dock/a, Jahr 5 nach Ablieferung	20	20	20	20	20	20
Tage Operations / a, Jahr 5 nach Ablieferung	345	345	345	345	345	345
Rundreisen / Schiff x a, Jahr 5	5,93	8,46	8,67	5,93	8,46	8,67
Bedarf Schiffe - Jahr 5 nach Ablieferung	4,3	2,1	0,9	11,3	7,9	7,7
Flottengröße Jahr 5 nach Ablieferung	7,4			26,9		
Kraftstoffverbrauch t NH3 / Schiff x RR (See)	8.736	5.880	6.048	8.736	5.880	6.048
Kraftstoffverbrauch t NH3 / Schiff x annum (See)	51.755	49.681	52.356	51.755	49.681	52.356
Kraftstoffverbrauch t eDiesel / Schiff x a (See)	1.136	1.090	1.149	1.136	1.090	1.149
Gesamtverbrauch der Flotte t NH3/a	366.281			1.339.924		
Gesamtverbrauch der Flotte % der Transportmenge	6,2			5,9		
Angelandetes NH3 an deutschen Importterminals t/a	5.497.033			21.495.511		

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Beispiel einer interkontinentalen Importstruktur über See für Wasserstoff in Form von grünem Ammoniak

**Abstract: Shipping the sunshine ...**

... this analogy symbolizes the ambitions of western countries to detach their energy supply from fossil fuels and to jointly build up a resilient hydrogen economy by the middle of the 21st century. The article describes the German demand for sustainable, hydrogen-based primary energy and derives the required fleet size and the possible concept of a suitable ammonia tanker.

Faktor Zeit aber kritisch. Die Planungen für entsprechende Ammoniak-Importterminals, ob in Wilhelmshaven, in Stade oder in Brunsbüttel, laufen bereits. Nun sollten auch die benötigten Schiffe entwickelt werden.

Dabei wäre die Frage zu stellen, wie man diese schiffbauliche Aufgabe von nationalem Interesse so löst, dass praxistaugliche, wirtschaftliche Schiffe mit ausreichender Kapazität pünktlich zur Verfügung stehen. Eine Kooperation mit den in dieser Technik erfahrenen Japanern

wäre ratsam, wobei sich eine kooperative Fertigung und der Betrieb der entstehenden Flotte bei erfahrenen Unternehmen innerhalb Deutschlands oder auch in der EU, zum Beispiel in Finnland, zur Know-How-Sicherung anbietet.

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Ship Particulars (expected) LPG/NH3-Carrier 115.000 DWT			
Hull Dimensions	Loa	299,95	m
	L water Line	299	m
	Lpp	293	m
	B	46	m
	D	23,8	m
	Summer Draft	14,3	m
	DWT Summer Draft - Basis Ammonia	114.900	tons
	Displacement Summer Draft	153.700	tons
	Design Draft	12,5	m
	DWT Design Draft - Basis LPG	93.400	tons
	Displacement Design Draft	132.200	tons
Lightweight	38.800	tons	
Cargo	LPG or NH3 - SPB (Self-supporting, Prismatic-shape IMO type B), Ni-Steel, JMU-Patent, 0,7 bar, Fully refrigerated		
	Cargo Tank Volume - with LGIA-Engine (NH3 fuel): (4 x 29.000 m <sup>3</sup> , 1 x 25.500 m <sup>3</sup> , 1 x 14.500 m <sup>3</sup> , 2 x 7.250 m <sup>3</sup> ) - NH3-Cargo only	170.500	m <sup>3</sup>
	Cargo Tank Volume - with LGIP-Engine (LPG fuel): (4 x 29.000 m <sup>3</sup> , 1 x 25.500 m <sup>3</sup> , 1 x 14.500 m <sup>3</sup> , 1 x 7.250 m <sup>3</sup> ) - LPG & NH3 Cargo	163.500	m <sup>3</sup>
	Cargo Tank Volume - with LGIA-Engine (NH3 fuel): (4 x 29.000 m <sup>3</sup> , 1 x 25.500 m <sup>3</sup> , 1 x 14.500 m <sup>3</sup> ) - LPG & NH3 Cargo	156.000	m <sup>3</sup>
Speed Performance	Service Speed at Summer Draft at NCR, calm sea, Bft 4, Shaft Generator on	16,3	kn
	Service Speed at Design Draft at NCR, calm sea, Bft 4, Shaft Generator on	16,5	kn
GHG 100	Carbon Factor CO2 neutral green Ammonia	0	gCO2/g Ammonia
	Carbon Factor LPG - Propan	3,00	gCO2/g LPG
	Carbon Factor ULSFO 0,1 % Sulphur	3,206	gCO2/g ULSFO
EEDI	EEDI on Green Ammonia and eDiesel (N2O-Emissions presently unknown, not considered)	0	gCO2/DWT x nm
	EEDI on LPG and ULSFO	3,44	gCO2/DWT x nm
	EEDI required	3,86	gCO2/DWT x nm
C-II	CII on Green Ammonia and Green eDiesel - All Speeds, all drafts - (N2O-Emissions presently unknown thus not considered)	0	gCO2/DWT x nm
	CII on fossile LPG & 100% Green eDiesel - Summer Draft, 16,0 kn, Bft 4, AUS - Germany	4,24	gCO2/DWT x nm
	IMO C-II reference Line	4,77	gCO2/DWT x nm
	IMO C-II required 2025	4,34	gCO2/DWT x nm
	IMO C-II required 2026	4,24	gCO2/DWT x nm
Main Engine	M/E - Commencing on LPG-fuel as LGIP, later modification into LGIA-type to operate on NH3 permanently	MAN 8S60ME-C10.5-LGIP or LGIA	
	IMO Annex VI Nox Emission ability	Tier II & III	
	Propeller	FPP	
	Fuel Type (main)	LPG (LGIP) - Ammonia (LGIA)	
	Fuel Type (Pilotfuel & emergency)	ULSFO or eDiesel	
	MCR	19.920	kW
	RPM	105	rev./min-1
	NCR	17.920	kW
RPM	101,5	rev./min-1	
Fuel Tank Capacities	Ammonia - as LPG/NH3-Carrier	2 x 7.250	m <sup>3</sup>
	Ammonia - as pure NH3-Carrier	from Cargo Tanks	
	LPG - as LPG/NH3-Carrier	1 x 7.250	m <sup>3</sup>
	ULSFO or eDiesel Bunker Tank Capacity (in normal operation as Pilotfuel and for Auxiliary Engines)	2.000	m <sup>3</sup>
Operational Range	LGIA-Engine: 16,3 kn & Summer Draft, Bft 4 Sea only, S/G on - LPG Cargo - NH3 fuel	abt. 22.000	nm
	LGIA-Engine: 16,3 kn & Summer Draft, Bft 4 Sea only, S/G on - NH3 Cargo - NH3 fuel: Limited only due to ULSFO/eDiesel	abt. 180.000	nm
	LGIP-Engine: 16,3 kn & Summer Draft, Bft 4 Sea only, S/G on - NH3 Cargo - LPG fuel	abt.22.000	nm
	LGIP-Engine: 16,3 kn & Summer Draft, Bft 4 Sea only, S/G on - LPG Cargo - LPG fuel: Limited only due to ULSFO/eDiesel	abt. 267.000	nm
	LGIP or LGIA-Engine: 16,3 kn & Summer Draft, Bft 4 Sea only, S/G on - LPG or NH3 Cargo - ULSFO or eDiesel as fuel	abt. 8.000	nm
	LGIP or LGIA-Engine: 16,3 kn Ballast Draft, Bft 4 Sea only - ULSFO or eDiesel as fuel	abt. 11.000	nm
M/E FOC at Sea	LGIA-Engine: Green Ammonia at 16,3 kn, draft 14,3 m, Bft 4, clean hull, S/G on	about 170	mt NH3/24h
	LGIA-Engine ULSFO or eDiesel as Pilotfuel at 16,3 kn, draft 14,3 m, Bft 4, clean hull, S/G on	about 3,5	mt ULSFO or eDiesel/24h
	LGIP or LGIA Engine on ULSFO or eDiesel as main fuel at 16,3 kn, draft 14,3 m, Bft 4, clean hull, S/G on	about 77,3	mt ULSFO or eDiesel/24h
	LGIP-Engine: LPG at 16,3 kn, draft 14,3 m, Bft 4, clean hull, S/G on	about 67	mt LPG / 24h
	LGIP-Engine: ULSFO or eDiesel as Pilotfuel at 16,3 kn, draft 14,3 m, Bft 4, clean hull, S/G on	about 2,4	mt ULSFO or eDiesel/24h
A/E FOC at Sea	Shaft Generator and Heat Power System cover electric base load and cargo reefer load	0	mt/24h
Electric Power Capacity	Shaft Generator	1800	kWel.
	Auxiliary Generators	3 x 2.000	kWel.
	Heat Power System - Waste heat from M/E Cooling water and Exhaust Gases	about 850	kWel.
Energy Saving Measures	Multicondition optimized Hull, High efficiency Propeller, Twisted Full Spade Rudder with Bulb, PBCF, High Efficiency Anti Fouling Paint, Under Water Cleaning Robot (permanent carry on board), Air Lubrication System, Waste Heat Recovery System, LED-Lighting, Resistance Optimized Piping System, Frequency Controlled Pumps and Ventilation Fans, integrated Performance Data Logging & Reporting System, Voyage Planning & Weather Routing System		

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# Rethink Shipbuilding

VAFT OPT is an innovative design approach to generate fuel savings of more than 5 % for newbuildings. The technology has been applied to optimize a container vessel (at SVA Vienna) and a bulk carrier (HSVA) for the purpose of validating the technology. Classes and flag states joined tests recently executed at HSVA as impartial witnesses for bulker tests

Maritime stakeholders face tough challenges in complying with future IMO regulations and natural demand coming from climate change and energy transformation. During this »most innovative SMM ever«, decarbonisation, fuel changes and fuel savings are amongst the hottest topics.

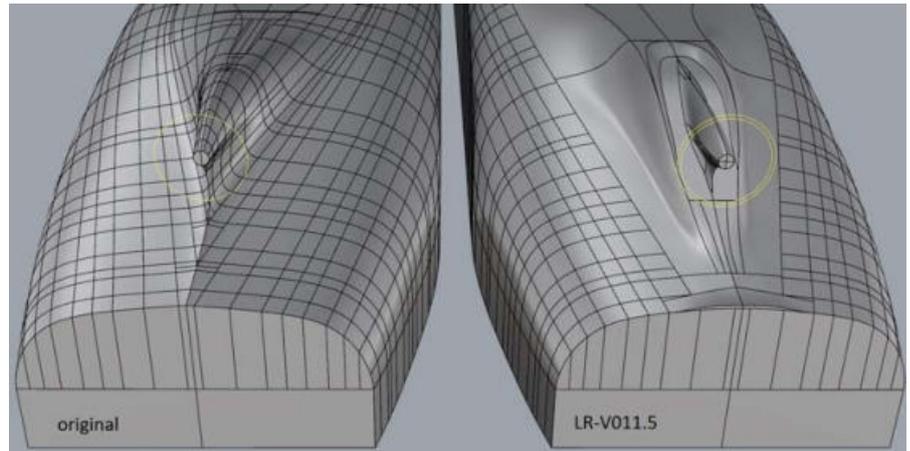
The traditionally very slowly adapting shipbuilding industry has to deal with challenges related to new designs from hull to engines. Stakeholders try to develop their know-how and improvements rather than utilising 3rd parties' technologies. Their main concerns are intellectual property rights and the cost of ship production, which seem to be more critical than the unutilised benefits for ship owners or charterers paying the bill.

While industry stakeholders focus a.o. on utilisation of different types of future fuels to comply with CII/EEDI-3 requirements, we, LR-Shipdesign AG, deliver previously unidentified solutions for ship hull design improvements with a unique patented hydromechanical and hydrodynamical innovation: AFT OPT.

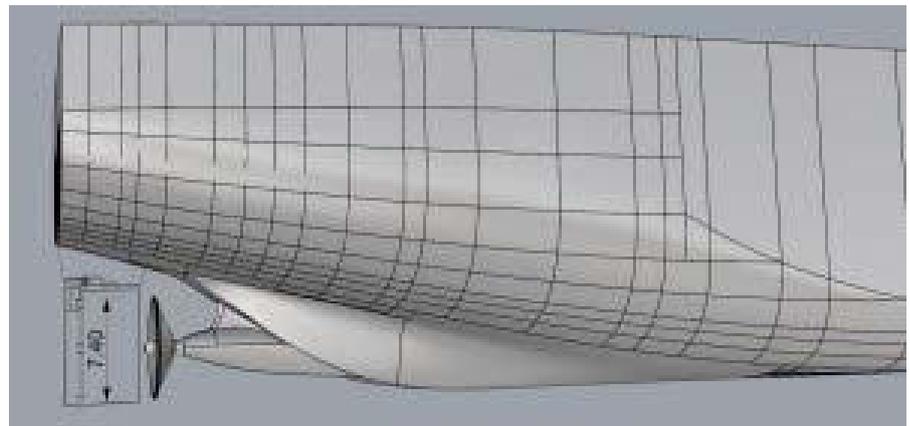
AFT OPT is nothing less than a unique detailed analysis of the flow of water cells underneath a ship's hull – from the bow to the rudder. The core of AFT OPT is a slightly modified area in the hull bottom aft section to accelerate the flow of water (»water jet«) in parallel to the main hull line. The effect: more water is delivered to the propeller disc with a better distribution to fill the whole disc area. Consequently, both a propeller and a twisted rudder, designed to deal with the vortex flow and increase propulsion, contribute to much more efficient energy utilisation.

All this can be implemented in ship newbuildings with minimal engineering effort compared to the shipbuilding cost.

Induced by the special AFT OPT form and input edges of the ship's bottom semi-circular form, the applied pressure is reduced, and the water flow is accelerated due to the indentation. The energy losses are reduced, and the flow pattern



An example of a bulk carrier tested at HSVA. Right hand side: AFT OPT modification of hull lines



long the edge lines (shoulder), stern, and trailing whirl are optimised.

This system essentially improves the water flow to the propeller and rudder. The propeller gains more pressure, especially in the 12.00 hrs position, and further savings are generated by an adaption of the transmission and/or propulsion.

Historically, the analysis of fuselage flow, the flow of air around the wings of aircrafts, led to the question at LR-Shipdesign, whether a specific new approach can be made to improve the flow of water underneath the keel.

AFT OPT today consists of its CFD and calculation tools. Results have been

validated at SVA Vienna (3,500 TEU container vessel) and HSVA for a Panamax bulk carrier. International partners delivered their latest designs as input information to LR-Shipdesign. The aim was to improve the vessels' efficiency without changing the cargo capacity. The engine manufacturer has approved minor modifications regarding the main engine room.

In both cases, the hull's resistance without attachments was improved by more than 3–4% in full scale (4–5% in model scale). The overall result for the bulk carrier reached a 9.7% improvement in full scale with propeller and rudder attached. These results were

Using the panamax bulk carrier as an example:  
The comparison of the flow of streamlines at the stern is shown (hydrostatic pressure is excluded);  
Original (above) vs AFT OPT (below)

achieved in June 2022 at HSVA; based on these tests, further slight improvements have been identified.

The competitive advantages of the Patented Lindinger Hull are:

- A Fuel reduction of more than 5%, up to 10% in regular operation
- No additional maintenance expenses during operation
- Enhanced efficiency of the propeller by reducing both – the thrust deduction fraction and slip
- Lower vibration and lower noise development due to the propulsion unit
- Functional for all semi-glider and displacement hulls

### Conclusion

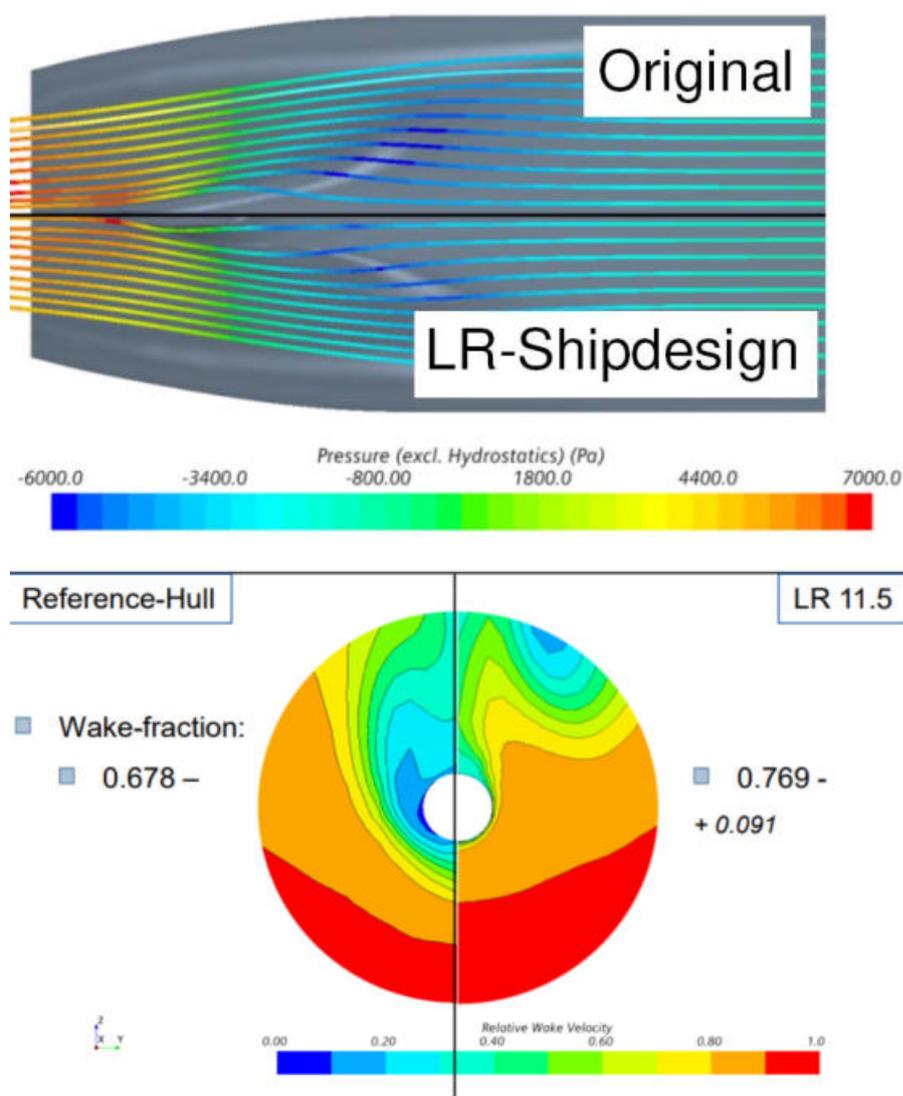
Ships are only sustainable future assets when combining all new requirements of builder and user. Shipowners should not be shy to use their purchasing power to combine more economical shipbuilding know-how with their ship's operational requirements. The cost for new merchant vessels is relatively low compared with the OPEX during a ship's lifetime.

#### Authors:

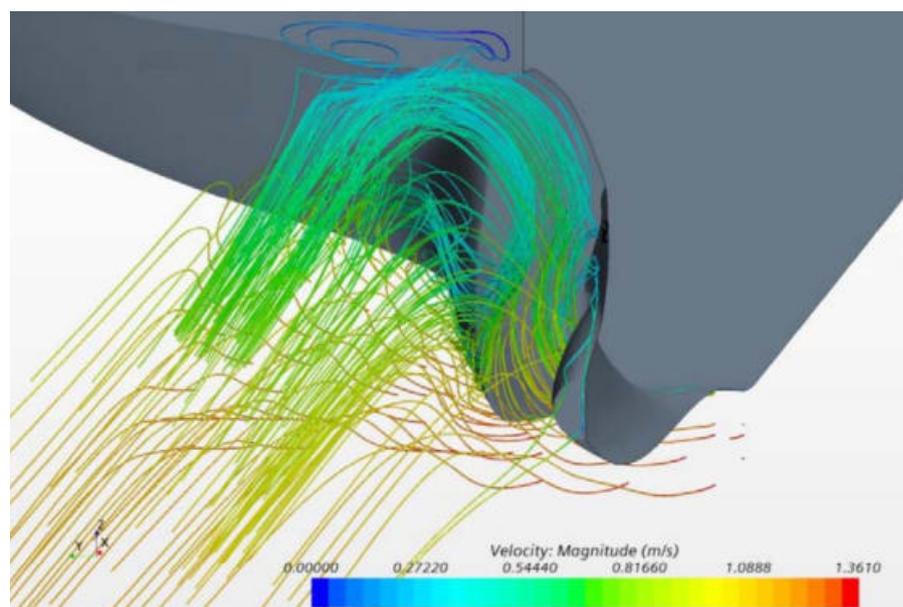
Roland Lindinger | LR-Shipdesign  
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#### Acknowledgements

We are grateful to our industry partners for providing their hull lines and support for developing holistic solutions for propeller design and main engine setup (MAN), and rudder design (Loewe Marine). We would also like to thank the managers of SVA Vienna and HSVA for their scientific support and all participating classification societies and flag states for the validation of AFT OPT technology.



In consequence, the propeller disc for the original hull on the left vs AFT OPT on the right: the better distribution of forces is recognisable already in the model scale. The full-scale vessel will have an even better-predicted wake flow in the propeller disc



The CFD simulation indicates the velocity streamlines with a slight vortex but without stall

# A&R's trainees against plastic waste

Oceans and rivers worldwide are contaminated with plastic waste. The shipyard Abeking & Rasmussen is taking action against this with the HiveX platform. A prototype is already in operation in Italy, another is being designed. Trainees play a major role in the project

In the course of its 115-year history, the traditional shipyard Abeking & Rasmussen has always been willing to explore new avenues and to get involved outside its traditional fields of activity. So no one was surprised when the trainees got involved with a forward-looking project.

Through a TV appearance in 2019, Toralf Zimmermann, Head of Research, Development and Innovation at A&R, became aware of the association Pacific Garbage Screening. At that time, no one could have imagined that this would develop into a long-term and trusting collaboration. The association, now renamed EverWave Community, and its associated social startup, everwave GmbH, have declared war on plastic waste in rivers and oceans. »Every year, over 12 mill. t of plastic waste ends up in our oceans. We, the people, are responsible for this. Through our behaviors and consumption, we ingest tens of thousands of plastic particles per year, including through our food, clothing and hygiene products. This, in turn, can have an impact on our health. Our oceans are extremely polluted by almost invisible mountains of garbage. This plastic waste threatens biodiversity and the lives of all marine life. Animal food chains and habitats are being massively disrupted,« says Tilman Flöhr, CTO at everwave.

In order to protect the oceans from the masses of

waste, everwave is already starting with the rivers, the main pathways for the plastic into the oceans. For this purpose, a stationary platform system was developed that continuously collects the plastic waste in an environmentally friendly way in order to recycle it afterwards. This is where Abeking & Rasmussen came in. Toralf Zimmermann remembers: »The commitment and enthusiasm for their cause made a lasting impression on me. However, there were some challenges to be mastered in terms of shipbuilding that did not necessarily correspond to the classic tasks of our design engineers.« Solutions were quickly found. In cooperation with the Institute of Hydraulic Engineering and Water Management at RWTH Aachen University, two »prototype« test series were checked for functionality in the laboratory. These findings formed the basis for the realization of the first prototype.

This prototype was built by the apprentices of Abeking & Rasmussen. The training department of A&R, which has just been awarded Top trainer by the Chamber of Industry and Commerce for the umpteenth time – approximate 10% of the workforce are trainees and have been for many years – became the construction site. Here, the buoyancy bodies were welded and the entire platform was assembled. For Helge Ziems-Gillerke, head of the A&R training department, this project was an exceptional opportunity to make a contribution to the environment with the ship-yard's junior staff. »Seeing the finished platform in the Weser and experiencing that the concept works was the absolute highlight for the trainees.«



The first platform built by A&R's apprentices is already in use near Padua

## The platform »HiveX«

HiveX is everwave's stationary system and can collect plastic waste continuously, in an energy-efficient and environmentally friendly way. The platform is capable of collecting up to 5 t of plastic per day and is designed to allow fish to swim through it unimpeded. Its modular system allows it to be adapted to local conditions and it can also be designed in combination with other modules.

The prototype is already in use under real conditions. In Italy, near Padua, the platform is helping to reduce plastic waste discharge into the Gulf of Venice. This is far from the end of the collaboration between Abeking & Rasmussen and everwave. A catamaran for actively collecting plastic waste is in the design phase. This, too, is to be built by the trainees. »We are very proud that we can contribute to ridding our rivers and oceans of plastic waste,« says Toralf Zimmermann.

ED

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POWERTRAIN SOLUTIONS. BUILT TO LAST.

## Abeking & Rasmussen, Lemwerder

Abeking & Rasmussen has stood for shipbuilding for more than 110 years and over 6,500 sailing and motor yachts, naval and special ships have been built. The shipyard, which carries out development, design and construction in-house in Lemwerder on the Weser, delivers to demanding customers all over the world.

Since 2015, yachts and ships up to a length of 125 m have been built at the yard. The shipyard has demonstrated this with the largest yacht constructed in the shipyard's history to date – the almost 100 m yacht »Aviva«. However, this internal shipyard record will not last long. At present, its »big sister« is being built in the shipbuilding shed on the Weser. But even this 118 m long yacht will not be the largest ship of Abeking & Rasmussen in the foreseeable future. One can already find the next yacht with more than 120 m in the order books.

The order books are well filled. In addition to numerous refit orders, the next generation of mine hunting vessels made of high-strength and non-magnetic steel made using an innovative 3D laser weld-



© Abeking &amp; Rasmussen

ing procedure is currently being built in Lemwerder. The Indonesian Navy has placed an order for two of these 62 m naval vessels with Abeking & Rasmussen. The shipyard can also draw on a long tradition and extensive experience with these naval vessels. In A&R's history, more than 360 units have been developed, designed and built for navies from all parts of the world.

Furthermore, A&R is building three multi-purpose vessels over 90 m in

length for the Waterways and Shipping Administration of the Federal Republic of Germany. These special purpose vessels (SPVs) will be the world's first vessels powered exclusively by LNG for use in hazardous atmospheres.

Learn more about the extensive orders and special features of Abeking & Rasmussen. We are looking forward to welcoming you again finally for personal talks at our booth.

**Hall B4 | booth EG 212**

## Alfa Laval, Aalborg

Through innovation, digitalisation and thought leadership, Alfa Laval is driving progress towards decarbonisation and other sustainability goals. Independently

and together with customers and partners, the company is making sustainable shipping a reality. Alfa Laval's SMM will showcase solutions for meeting

EEDI/EEXI and CII requirements, such as the Alfa Laval E-PowerPack and the Alfa Laval Aalborg Micro economiser. It will explore how these and other solutions, such as fuel handling, combustion, waste heat recovery and more, enable this.

Visitors will focus strongly on digital services, including connectivity for Alfa Laval PureBallast 3, which will be on display. StormGeo, a part of Alfa Laval, has a digital offering that extends from weather intelligence and route optimisation to simulating a vessel's CII. These services will have a dedicated area in the stand.

Finally, visitors will see how Alfa Laval collaborates with others on methanol, fuel cells and more. Oceanbird, a joint venture in wind propulsion between Alfa Laval and Wallenius, will be among the initiatives highlighted.



© Alfa Laval

**Hall A1 | booth 226**

## Alphatron Marine | JRC, Rotterdam

After a period of restrictions due to Covid-19 and cancellation of many exhibitions, JRC | Alphatron Marine is once again proud to present her leading products, innovations and solutions at SMM, one of the world's largest exhibitions. At the 30<sup>th</sup> edition of this exhibition we will show a total package with professional deepsea and inland equipment, demonstrate our new modular consoles and introduce the new AlphaRiverPilot MFS.

At SMM the company will present its latest innovation with regards to system integration, our modular consoles. This modular console is a unique and new bridge console concept. The main components of the console are made of light-weight aluminium. The top cover, hatches and optional sides are made of recycled ABS, primarily to save weight, but an additional benefit is that it is a sustainable product and therefore environmentally friendly. Also, the delivery time is significantly reduced because all parts are in stock.

JRC | Alphatron Marine will showcase a new motion control system, the . This is the successor to the AlphaPilot MF that has been used by our customers on a huge number of inland vessels for many years. The AlphaRiverPilot MFS will be obtainable in two different versions, a desk mount and a flush mount version. The new control units have the same form factor as our existing MFS repeater line and are equipped with a 5-inch color touch screen, providing a great and simple user experience. The new AlphaRiverPilot MFS is easy to install and also very accessible for updates. In addition, this river pilot can be linked to multiple devices, for example the AlphaRiverTrackPilot and compass.



© Alphatron Marine

On the show there will also be the JMR-611 river radar, the next generation in sensor technology. This radar characterizes itself by an excellent suppression of unwanted reflections from waves on wide water. In addition, this radar uses an aerodynamic scanner and an associated modified motor. This makes this radar extremely suitable for the most extreme weather conditions. The JMR-611 is the first river radar with an extreme low reflection on the monitor, according to the new regulations. With our JMR-611 river radar you are prepared for the future.

JRC | Alphatron will also present the JMR-5400 radar for CAT1 and CAT2 vessels, a high performance sensor tech-

nology. This radar significantly improves short range detection and target discrimination on high-brightness displays with intuitive icon-based operation. The system runs on the latest signal processing technology designed by JRC, allowing radar images to effortlessly run faster and more efficiently than ever before. With this fully in-house developed radar, we can guarantee a clear radar image with clear targets even during rain and rough sea. By adding the proprietary optimization technology to the automatic clutter removal function, image discrimination at close range has reached a whole new level.

Hall B6 | booth 202

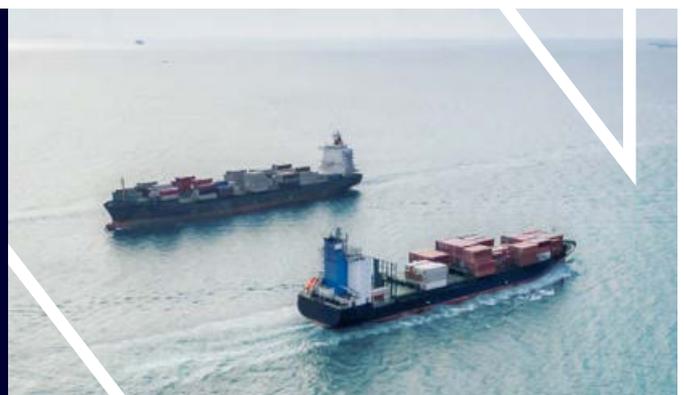


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## Andritz Hydro, Ravensburg

© Andritz Hydro



The engineers of Escher Wyss AG in Switzerland laid the foundation for the development of hydraulically operated controllable pitch propellers as early as 1933 and since the 1950s, production and development have been established by the company at its Ravensburg site.

Especially for propulsion systems with high demands on low noise and cavitation, Andritz Hydro can offer effective and tailor-made solutions, such as the new 6 or 7-bladed controllable pitch propellers. At Andritz Hydro Ravensburg, all components are manufactured using

sophisticated processes and regularly checked for the necessary high quality. Only in this way can we achieve the exacting specifications demanded by our customers.

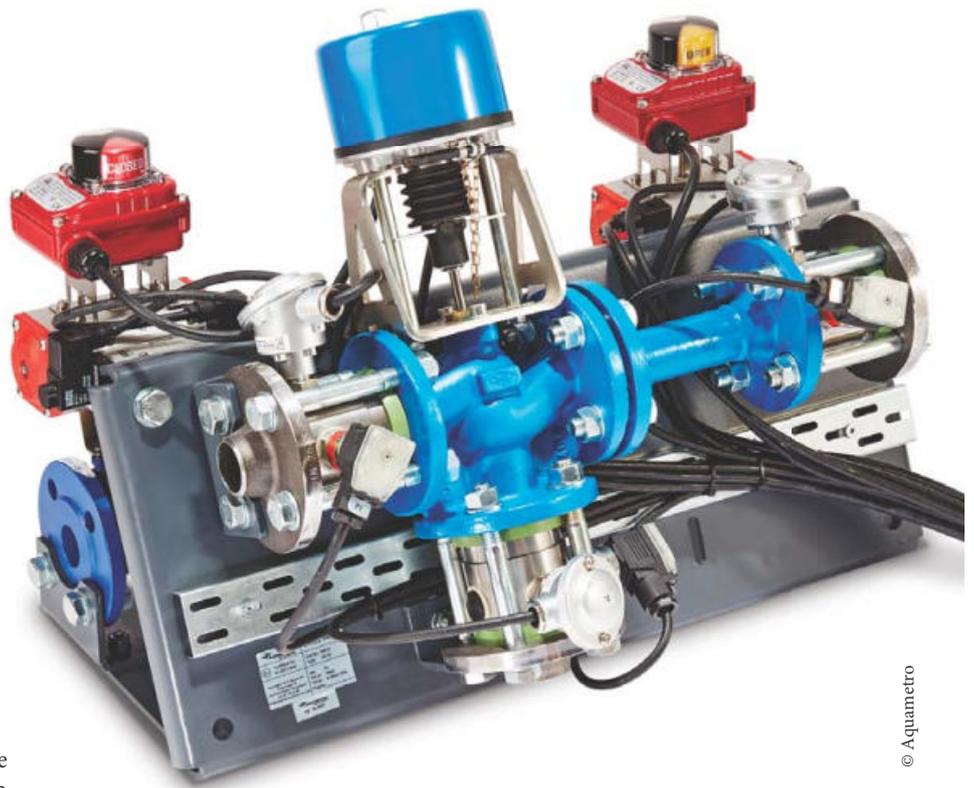
**Hall A3, booth 323**

## Aquametro, Rostock

Using alternative fuels plays an essential role in reducing CO<sub>2</sub> emissions caused by the maritime industry. Whether as an admixture to fossil fuels or as a pure alternative fuel such as carbon neutral methanol. While shipping companies are starting to convert their fleets to operate on alternative fuels, the corresponding measurement, regulation and control technology must also be able to measure and process these new fuels.

By using Aquametro Oil & Marine's »Fit for Alternative Fuels« solutions, such as the on-board fuel blending system, it is already possible today to add by small efforts sustainable biofuels to the ships which still mainly use conventional fuels such as HFO or MDO, and sustainably reduce CO<sub>2</sub> emissions in shipping or industrial applications. The onboard fuel blending system can be integrated into an existing fuel system with relatively low technical effort and has full type approval by DNV.

The EEXI, one of IMO's short-term measures to reduce greenhouse gas emissions, will enter into force beginning of 2023. The measure currently used most frequently on the market to minimise the EEXI seems to be the ship power limi-



© Aquametro

tation in the form of engine power limitation (EPL) and shaft power limitation (ShaPoLi). Our Shaft Power Meter is a cost-effective solution that provides all the necessary requirements to realise your specifications and stands as a critical element in our Fuel Performance System

(FPS) – an open PLC web-based signal recording system that provides complete transparency of all fuel and power parameters of the vessel operation process.

**Hall A1 | booth 414**



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## Asyad Drydock, Duqm

ASYAD Drydock serves the growing demand for world-class ship repair and shipbuilding services in the Middle East and North Africa (MENA) region. Located in Oman's port of Duqm, the drydock is at the heart of strategic shipping routes that are critical to international trade and commerce. It is the largest ship repair yard in the region. Formerly known as the Oman Drydock Company (ODC), ASYAD Drydock is a member of the ASYAD Group, Oman's flagship logistics and supply chain provider.

This year's SMM theme is digital transformation and emissions reduction, giving ship owners and operators visiting the exhibition the opportunity to see the latest options for efficiency improvement and decarbonization. ASYAD Drydock has the experience and expertise needed to integrate these advanced solutions into existing vessels in an efficient and timely manner. »Keeping pace with technological developments and ad-

vancements is a top priority for us,« says Ibrahim Al-Nadhairi, CEO of ASYAD Drydock & ASYAD Shipping.

The company offers repairs and conversions for ships and mega yachts, as well as shipbuilding, offshore rig repairs, and industrial fabrication. The yard features 1.2 mill. m<sup>2</sup> of seafront facilities, and a 2,800 m long quay with a water depth of 9 to 10 metres. With 14 sets of jib cranes, two graving docks, and a potential floating dock, the drydock can efficiently handle vessels up to 600,000 dwt.

Since 2011, ASYAD Drydock has served more than 1,100 vessels, and has shown consistent growth over the years. In 2021, 163 vessels were repaired at the yard – an increase of 21% compared to 2020. The operational efficiency of the yard can be seen by the fact that during last year it was able to accommodate and work on 23 ships simultaneously.

In addition to its repair and integration capabilities, the company also offers ship-



Ibrahim Al-Nadhairi, CEO of ASYAD Drydock

building services for vessels of all types and sizes. The group also owns a growing fleet of more than 60 state-of-the-art vessels with a total capacity of 9 million tonnes.

Hall B3 EG | booth 204

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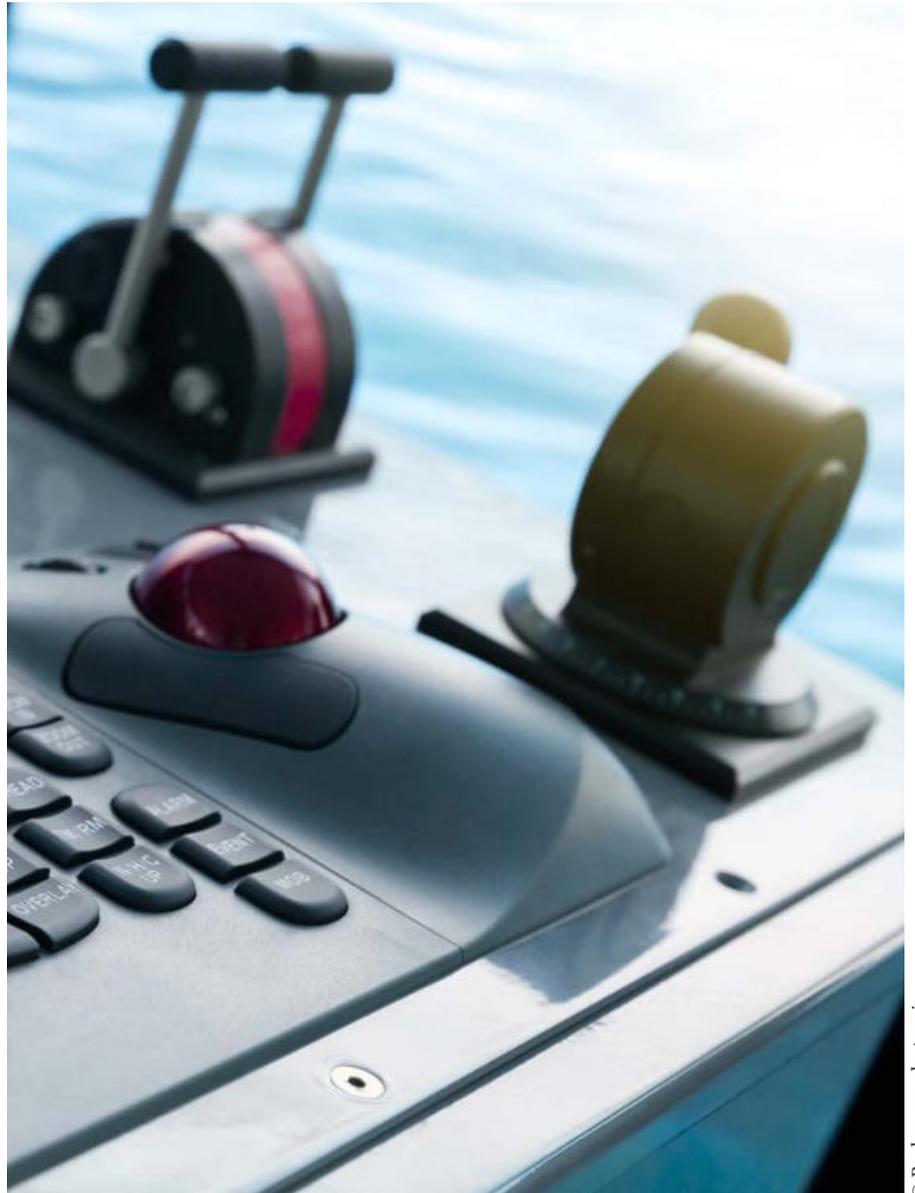
## Bachmann electronic, Feldkirch

The company is preparing for the autonomy of vessels, which is becoming a reality through the standardisation of the interfaces between different technology suppliers and is presenting its solutions at the SMM.

The MTP (Module Type Package) standard, which describes the standardisation of communication between systems and the control level, reduces commissioning times and protocols such as DDS (Data Distribution Service), enabling redundant, easy-to-integrate applications to provide information in real-time. Bachmann's expertise in intelligent maintenance applications enables shore support during operation and prevents unexpected failures. Even though ships are currently still primarily conventionally powered, Bachmann is contributing to an environmentally friendly maritime future with integrated energy management and control solutions. The company supports safe control and operation in conventional shipping by offering Openbridge design objects in a standard Scada solution.

Bachmann brings together partners, customers, product managers and application engineers to exchange individual strengths, ideas, solutions and technologies. Through joint efforts, visions are transformed into tangible automation solutions. Industry-wide collaboration allows system integrators and equipment manufacturers to focus on their solutions with minimal development and commissioning time.

Hall B6 | booth 305



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## Baumüller, Nürnberg

Baumüller is now better positioned in the smart shipping sector with the expansion of its solutions and services portfolio to include hydrogen propulsion systems, battery charging systems, and marine services. Baumüller not only offers motors, converters, and appropriate operating systems but also a comprehensive marine service portfolio.

As automation experts with a wide performance range, from the motor to the converter and the control through to the diagnostics software or to the battery management system, Baumüller highlights its experience when it comes to hybrid and fully electric propulsion systems.

Baumüller is a partner for shipyards, system integrators and ship owners, as well as being an independent supplier of complete systems. Besides fully electric solutions, diesel-electric hybrid drives are the technology of choice when it comes to finding an economical, environmentally friendly alternative to equipping ships with state-of-the-art technology.

Alternative planning pays: For example, ferries benefit from improved



© Baumüller

manoeuvrability, yachts from lower noise emissions and workboats from higher performance. Operators can look forward to lower fuel costs and the environmental benefits from the lower emissions.

One of the main advantages of a fully electric or battery-run e-motor for ships and boats is that it is quiet and free of fine particulates. The motors are run with rechargeable lithium-ion batteries, without any diesel engines.

The advantages of the battery-powered ship solution from Baumüller lie, on the

one hand, in the overall intelligent concept based on the company's many years of experience in the ship propulsion sector and, on the other hand, in the highly efficient synchronous motors. The drive system thereby achieves a degree of efficiency of over 95%.

For several years, Baumüller has been equipping inland vessels, work boats, yachts, offshore vessels, passenger ships, and ferries with alternative marine propulsion systems.

**Hall A4 | booth 234**

## Bender, Grünberg

Electrical safety has the highest priority on ships. At the same time, it is a challenge to detect and localise electrical faults on board in good time. Insulation faults can generate currents that endanger the safety of crew and passengers or accelerate the corrosion of ship parts.

Whether in the engine room, in accommodation or in cabins: electrical faults occur quickly but are only found manually with a great deal of experience and time. In addition, there are dangers to people from electric shock as well as downtimes of machinery. To protect

against this, Bender Isometer in interaction with fault localisation devices (EDS) or residual current monitoring systems (RCMS) always monitor the electrical systems on your ships.

Insulation monitoring devices permanently monitor the insulation resistance of unearthed systems and alarm when the value falls below a response value. These systems detect deterioration of the insulation level early and safely.

Insulation fault locators are used to locate insulation faults in unearthed power supplies. They use measuring current transformers to detect the test current signals generated by the insulation monitoring device and evaluate them accordingly.

Residual current monitors are used to monitor earthed systems (TN and TT systems) for fault currents or residual currents. Residual current monitors detect deterioration of the insulation level early and reliably.



© Bender

**Hall B6, booth 233**

## Bindemann, Halstenbek

Blending on-Board (BOB) technology allows owners to produce a Fit-for Purpose cylinder lubricant onboard, by blending the in-use system oil with a higher-BN cylinder oil product, which facilitates the addition of fresh system oil to the engine sump.

This gives the engineers onboard the possibility to adjust the BN of the cylinder oil to meet different Sulphur contents and detergency needs in the engine without raising the feed rate, the need for additives can be adjusted with the BN and not with the feed rate as has been the norm previously.

On vessels using compliant fuel this has shown to be a huge benefit, before 2020 it was often said that with the lower Sulphur contents the need for different BN cylinder oil would be reduced but experience has shown that with the low BN cylinder oils the detergency has been a challenge and this has created the need for many vessels to shift between different grades.

With a blender they can instead blend the cylinder oil to a BN number that gives enough detergency without causing over lubrication issues which makes it easier to optimize the feed rate.

Whether the vessels are using Scrubbers or Compliant fuels the use of system oil from the engine and renewal of the oil in the engine keeps the system oil renewed and clean which reduces the build up of deposits in sensitive areas of the engine like the piston crowns and reduces the wear on sensitive hydraulic components in modern engines.

The blender is connected to the oil system onboard taking high BN cylinder oil from the storage tanks, used system oil from the main engine settling tank and then feeding the blended oil to the cylinder oil day tank. The installation can be done by the crew onboard while the vessel is sailing.



Hall A1 | booth 201

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## BIO-UV Group, Lunel

The French UV water treatment pioneer BIO-UV Group will exhibit a pair of BIO-SEA ballast water treatment systems at this year's SMM. The company will showcase its new »M«-Series BIO SEA unit alongside its low-flow BIO-SEA »L« series.

All BIO SEA units incorporate BIO UV Group's next-generation UV-C lamp technology, developed in response to market demand for a BWTS with reduced operational costs, a small footprint and simplified maintenance and installation.

The low energy consumption UV reactor in the BIO-SEA »L« Series is based around an entirely new type-approved 6 kW UV lamp arrangement. The system is sized to guarantee full IMO and USCG compliance, treating flow rates of between 13 m<sup>3</sup>/h and 120 m<sup>3</sup>/h from one of the most compact, least energy consuming BWTS on the market. The UV technology has been applied across the range of BIO-SEA systems developed for flow rates between <100 m<sup>3</sup>/h to >2000 m<sup>3</sup>/h.

BIO-UV Group is also now providing customers with complete turnkey sol-



© BIO-UV Group

utions, offering everything from front-end engineering and design, 3D scanning through to pre-installation pipework, installation, commissioning and through-life service and maintenance. Visitors to Hall A1, Booth 124 will be able to see

first-hand why a BIO-SEA unit has been recognised as the most compact and powerful ballast water treatment system in the marketplace.

**Hall A1 | booth 124**

## Bremen's One-Stop-Shop

International and national maritime economics and logistics, the federal state of Bremen unites inspiring competence and experience. More than 1,800 innovative firms with about 41.000 employees create a yearly sales volume of nearly eight billion euros.

The sister cities of Bremen and Bremerhaven combine pure manpower and solid handcraft with the most modern technique, digital knowledge and foresighted technologies. Hydrogen drives, sustainable commercial spaces for Green Economy or ships powered by wind ener-

gy systems are in focus as autonomous watercraft.

Thinking in clusters, optimising maritime trade and harbour logistics, to deliver solutions for any maritime sector is the speciality of Bremen and Bremerhaven – from visionary scientific development, communication systems, engines and energy up to ship supply and excellent shipyards.

The impressive maritime competence of the federal state of Bremen and its firms is presented on a joint stand and organized by the Bremerhavener Gesellschaft für Investitionsförderung und Stadtentwicklung (BIS). See and visit

- HS Hafen Service GmbH & Co. KG
- Lloyd Dynamowerke GmbH
- Mittelstand 4.0
- Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)
- Gehr GmbH
- ISL – Institut für Seeverkehrswirtschaft und Logistik
- marinom GmbH
- Maritimes Cluster Norddeutschland e.V.



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**Hall B7 | booth 130**

## Bureau Veritas, Puteaux

New regulations, stakeholders and priorities pose new challenges for the shipping industry. With an increased focus on decarbonisation and sustainability, the maritime industry is responding not only to political regulations but also to popular demands. Bureau Veritas is committed to working with all stakeholders on this journey towards a better maritime world.

The decarbonisation goals, combined with tighter regulations of the International Maritime Organisation (IMO) and increasing digitalisation and scrutiny, lead the shipping industry to a whole new scale of transformation. A transformation is needed even more today to protect the most critical resource of the maritime industry – the oceans – for a sustainable and better world. Bureau Veritas Marine & Offshore set its mission to help design and operate ships more efficiently through various innovative solutions and services. From future forms of propulsion, performance optimisation



© Bureau Veritas

and the development of new regulations to the establishment of the necessary processes within the industry – with the BV Green Line, the classification society takes a holistic approach to achieve the set goals. The overall role is to provide trust between all marine players based on expertise and independent validation for

safe innovation. The appeal to all stakeholders: Everyone must rethink and work together to have a chance. Because the path to emission-free shipping can only be taken together, the drive to shape a better maritime world and the passion for protecting the seas is what unites us.

**Hall B3 | booth 103**

## UNSER ZIEL: EINE EMISSIONSFREIE SCHIFFFAHRT

Unsere neue Octopus-Serie von EST-Floattech ist ein leistungsstarkes, modulares und sicheres Energiespeichersystem, welches mit verschiedenen chemischen Technologien und Leistungen individuell an Bord integriert werden kann. Die Octopus-Serie ist äußerst sicher konzipiert und in den Ausführungen High Energy und High Power erhältlich. Gerne beantworten wir Ihnen Ihre Fragen an unserem Stand, wir freuen uns auf Ihren Besuch!



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## Cassens & Plath, Bremerhaven

In 2022 Cassens & Plath celebrates not only 120 years of existence, but also the new compass model BETA/125 is one of the reasons why the company is pleased to finally participate in SMM again.

120 years of development, material science and know-how are behind the Cassens & Plath brand. Sailors and captains worldwide rely on the nautical precision instruments of the Bremerhaven family business. The compasses and sextants are carefully assembled, ad-

justed and tested by hand in Germany. In the process, they are subject to a quality standard that makes these instruments unique.

The latest is the BETA/125, which, with a card diameter of 125 mm, is now close to being approved as a MED/4.1 Class A/A2 compass and can be used worldwide. This makes the BETA/125 our only spherical compass with this approval.

Hall B6 | booth 326



© Cassens & Plath

## CODie, Potsdam

CODie's latest product, the MMC (maritime-management-centre) – a modern digital assistant, will automate routine tasks, streamline operations and support everyone involved in ship operation and management. MMC is an all-around Ship and Fleet Management System, combining the experience of more than 30 years in this field. It covers all working areas in the day-to-day work in shipping:

- Planned Maintenance System (PMS),
- Asset Management & Ship Stores,
- Procurement & Purchasing,
- Crew Management & Payroll,
- Document Control (ISM, TMSA ...),
- Fleet Reporting & Performance Monitoring,
- Ship Inspection & Survey,
- Dry Docking,
- Claims Management,
- Newbuilding Supervision.

The shore system can be operated in-house or online (»Cloud«). Ships have an

autonomous system, ensuring that the fleet is always fully operational, even offline.

An intelligent, self-optimising data transmission takes care that data are there when needed, at the lowest transmission costs and without user inter-

action. Modern, future-proof development systems and database concepts ensure that processes and procedures can be streamlined and optimised in the long run.

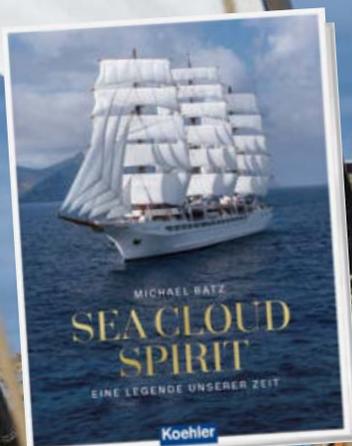
Hall B6 | booth 420



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## d-i davit international-hische GmbH, Sulingen

d-i davit international-hische GmbH is a developer and supplier of davit systems and cranes for shipbuilding and manufacturer of industrial equipment for the oil and gas industry. At the location Sulingen, Lower Saxony, it has been a medium-sized company with 165 employees for 40 years.

Apart from the delivery of complete components for seagoing vessels e.g. for cruise ships, ferries, commercial vessels, yachts, special ships, navy ships, megayachts and systems for the offshore industry, it also delivers oil and gas supply systems for onshore gas turbine power plants.

The extensive, individual product range includes the following products: In addition d-i davit international-hische GmbH has its own customer service department combined with a worldwide service network and specially trained service stations. d-i davit international-hische GmbH extensive spare parts warehouse also increases flexibility and reliability.



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Hall B5 | booth 223

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## Deutsches Maritimes Zentrum (DMZ), Bremen

The German Maritime Centre is happy to present its topics at SMM, e.g. autonomous maritime systems, alternative fuels, funding, bunker guidance, young talents, social media, Maritime Map, and Maritime Funding Compass Europe. The German Maritime Centre will focus on:

- Tuesday, 6 September: Technological Change – New Technologies,
- Wednesday, 7 September: Sustainability and Climate Change – Ship Recycling,
- Thursday, 8 September: Competitiveness – Green Financing and the Zero Emission Maritime Economy,
- Friday, 9 September: Demography and Securing Young Talent – New Talent for the Maritime Industry.

Each day will start with a Brown Bag Breakfast (10.30 am) – approximately 30-min keynote presentations by experts. Presentations (will be held in German):

- Tuesday, 6. September: Sönke Stich (Gebr. Friedrich GmbH & Co. KG) - New technologies in shipbuilding from the perspective of a medium-sized shipyard
- Wednesday, 7. September: Doris Kostka (Dr. Schackow & Partner) - Applicable law in ship recycling
- Thursday, 8. September: Philipp Wünschmann (Berenberg Bank) - Sustainable financing in the maritime sector



© HHM / Hasenpusch

- Friday, 9. September: Sabine Zeller (Berufsbildungsstelle Schifffahrt), Claus-Ehlert Meyer (Deutscher Boots- und Schiffbauer-Verband), Prof. Thomas Pawlik (Hochschule Bremen) - In search of bright minds for the maritime industry. In the afternoon at 2 pm, you can expect further exciting talks with guests from the sector about start-ups, resource-friendly demolition, hydrogen logistics and attracting young talent.

**Hall A3 | booth 100**

## DVZ Services, Syke

For over 40 years, DVZ has been a synonym for custom-made, sustainable and holistic solutions for wastewater treatment in the maritime sector. More than 10,000 of our systems »MADE IN GERMANY« are in reliable service on board a wide variety of ships, thus contributing to preserving the ecological balance of the oceans.

Technologies such as the Jet-Zone-Bioreactor DVZ-JZR and the membrane units of the DVZ-BMSU (Biomass Separation Unit) achieve the result of clearwater without solid residues. All this with a minimal footprint, maximum efficiency, and without adding further chemicals or accelerators.

A high material standard and the possibility of cleaning membrane modules (even during system operation) up to 100% of their filter performance create a sewage treatment system with an exceptionally long service life without changing membranes or essential components. The membrane units of the DVZ-BMSU are located outside the system tank so that it does not have to be opened for maintenance and cleaning.

The company notes that its high standards of quality, operational safety and ease of maintenance make our biological ship sewage treatment systems DVZ-JZR »BIOMASTER« a good solution for super and mega yachts, navy and special ships, ferries and RoRo vessels as well as offshore platforms.

The DVZ-JZR »BIOMASTER« systems are recommended for new build and refit ap-

plications. Due to their modular design and the possibility to place process stages separately, they find their place even in the most confined spaces.

Besides its sewage treatment plants and the oily water separators DVZ-FSU »OILCHIEF«, the company also offers fat traps, automatic pre-filters, buffer and collection tanks, lifting units, pump stations and all peripheral equipment for our systems.

**Hall A1 | Stand 136**



© DVZ



© DNV

## DNV Maritime, Hamburg

The new Maritime Forecast to 2050 report, decarbonization and digital solutions to support the industry in complex times are at the core of DNV's activities at SMM 2022

This year's SMM is special. While the world's biggest maritime trade show will once again make Hamburg the global focal point of shipping for nearly a week, the industry event will also celebrate its 30<sup>th</sup> anniversary. Featuring major shipyards and shipping companies, Hamburg has gained a strong reputation as a leading maritime city over the years, attracting top experts, suppliers, and industry professionals.

Hamburg has also been DNV's home for almost 160 years. The world's leading classification society has supported the German maritime industry over several generations. In Hamburg and all over the world, we have been providing classification and advisory services through every stage of the construction and operation of vessels. DNV's maritime headquarters in Hamburg is located at the heart of the city's harbour quarter – known as »HafenCity« – where modern architecture meets historical warehouses that have been declared a UNESCO World Heritage Site. At the DNV headquarters, German, European and global customers enjoy the unique benefit of having access to over 600 of our maritime experts.

Between September 6–9, DNV will welcome customers, partners, and stakeholders at SMM as the main sponsor of this leading maritime trade fair, while also contributing sig-

nificantly to its diversified and innovative conference programme. On **Tuesday, September 6**, DNV will launch its latest Maritime Forecast to 2050, which is part of the Energy Transition Outlook (ETO) series of reports. The publication is a powerful tool to turn strategic uncertainty into confident decision-making. At the Maritime Forecast to 2050 launch event at SMM, a stellar line-up of experts from the industry and DNV will discuss the report's findings.

The maritime world is transforming as new technologies emerge, digitalization is speeding up and the sustainability agenda continues to play a crucial role. At SMM 2022, DNV will offer expert insights and advice on how to capitalize on its broad digital service offerings to keep the global fleet running with confidence. This will enable our customers to take a strategic approach to their fleet management, managing compliance obligations in a straightforward way, as well as empower crews with easy-to-use digital tools which they can access at any time.

Cyber security is also high on the agenda at SMM as it plays an increasingly important part of DNV's risk approach. On Tuesday, September 06, DNV will invite representatives of maritime and offshore system suppliers and yards to a cyber security seminar focused on the digital developments, while also giving an outlook on increasingly automated and connected vessels and systems.

Hall B4 EG | booth 221

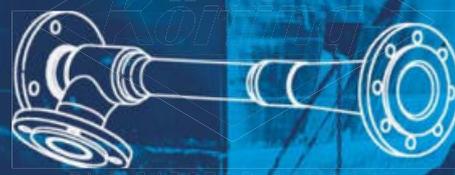
# Körting ejectors for the shipbuilding industry

SMM HAMBURG

06.09. - 09.09.2022

HALL A2 | BOOTH A2.133

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## DW-ShipConsult, Schwentinental

Underwater noise emission from ships has been a hot topic for decades for navies worldwide. But in recent years, the environmental aspect of this issue has become more and more relevant among regulators, in public discussions, and the shipping industry.

In a global climate abuzz with anticipation of upcoming regulations for international shipping and growing demand for ferries and cruise vessels compliant with Silent Class notations, DW-ShipConsult has formally joined the JASCO Applied Sciences group of companies.

The benefit of this combined expertise is being demonstrated on the Canadian West Coast, the habitat of the endangered Southern Resident Killer Whale. In a navigation channel where vessels often travel in the proximity of whales, an Underwater Listening Station developed and operated by JASCO has already recorded thousands of ship passages and provided valuable acoustic data on each



© DW-ShipConsult

vessel. Port authorities, regulators and shipping companies can use these data to assess parameters influencing each ship's underwater noise emissions and potential impacts on marine life. Adding to this service, DW-ShipConsult interprets the information and advises ship owners on

how to retrofit their existing fleet for lower noise emissions or how to build quieter vessels right from the start. This is especially important for vessels applying for a Silent Notation to certify their reduced impact on marine life.

**Hall A1 | booth 406**

## EMHA, Norderstedt

EMHA specialises in measuring, maintaining and optimising machines and systems in industry and shipping. Our specialists work daily to make drive systems and rotating equipment more efficient and durable. EMHA supplies all over the world. EMHA feel responsible for its customers and only want to deliver the best quality. No off-the-shelf solutions, but tailor-made solutions – that is our aim. EMHA is not tied to fixed suppliers, so we can always offer independent advice.

**Hall B7 | booth 726**



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Hall B4, Booth 101

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## EST-Floattech, Badhoevedorp

EST-Floattech is a Dutch company that develops and delivers state-of-the-art energy storage systems (ESS) for maritime applications. With over 200 projects it contributes to a clean, compact, safe and reliable source of energy. EST serves clients worldwide from our headquarter and production centre in Badhoevedorp (the Netherlands), and from our sales office in Hamburg (Germany).

Before the EST-Floattech started supplying batteries, it was a system integrator in the marine market. This strong application and integration knowledge then paved the way to become one of the world's top suppliers of energy storage systems (ESS). EST-Floattech keeps learning from market developments to become a value-added battery provider, the company leverages its experience and track record to optimally serve clients in today's marine industry. EST-Floattech's Energy Storage Systems are implemented in fully electric ships, in powerful hybrid applications combined with diesel engines and hydrogen technologies. EST-Floattech strives to partner with industry-relevant stakeholders, such as shipyards, system integrators, ship owners, technical universities, and innovative, technology-oriented companies.

The company's maritime portfolio consists of a wide range of products and projects, covering segments such as superyachts, fishing, ferries, inland shipping, coasters, river cruise, defence & security, and workboats. Additionally, EST-Floattech develops



© EST-Floattech

swappable containers that are suitable for the rapid loading of ferries, inland waterway, or offshore vessels. With the newly developed product the Octopus series the mission is continued to offer the maritime world a safe and modular battery system plus, among others a very simple integration and remote monitoring system. The Octopus series will be available in High Energy and High Power, with DNV class certification.

Hall B6 | booth 208

## Fischer Abgastechnik, Emsdetten

Fischer Abgastechnik allows to reduce nitrogen oxide and soot emissions effectively. Users can meet current and future emission standards and even stay below them.

Clean air out of responsibility for people and the environment – that's Fischer's mission and motivation: The portfolio of products and services encompasses various systems, such as DeNOx systems and soot filters. The range includes particulate filters, catalytic converters and thermal management systems, such as the HeliosFFB full-flow burner developed in-house for engine sizes up to 1,000 kW. DeNOx systems round off a broad range of options. The Fischer in-house design, CFD, and FEM departments support the development and preparation of systems. The EU Stage V-ready and IMO Tier III systems are developed for



© Fischer Abgastechnik

customer-specific engine demands from 19–10,000 kW. The exhaust after-treatment systems, catalytic converters and diesel particulate filters developed by Fischer help to contribute to clean air.

Hall A3 | booth 320

Komplettfilter

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## Flensburger Schiffbaugesellschaft & Nobiskrug, Flensburg & Rendsburg

Flensburger Schiffbaugesellschaft (FSG) and Nobiskrug will jointly exhibit at the SMM to present their portfolio. Based in Flensburg and Rendsburg, both shipyards offer various products and services.

Since its foundation in 1872, FSG has designed and built more than 750 ships such as submersible heavy lift, seismic, well intervention or RoRo vessels for the most prestigious shipping companies in the world. This year FSG will display its latest development: the FSG RoRo 1600 powered by the maxE Drive concept (patent pending). The design provides a transport solution for small/medium-size RoRos. This design can be customised to individual customer requirements and transport tasks.

With a tradition of over 115 years, Nobiskrug has been involved in shipbuilding since before the term superyacht was even coined. Nobiskrug has also delivered the Sailing Yacht A and announced its



© FSG

latest delivery of the high-tech and environmentally conscious hybrid superyacht Artefact.

Together the two shipyards also offer a 200 m open dry dock and a fully covered

climate controlled 160 m dry dock for refit, repair or complex modernisation projects for all types of vessels.

**Hall B4 EG | booth 214**



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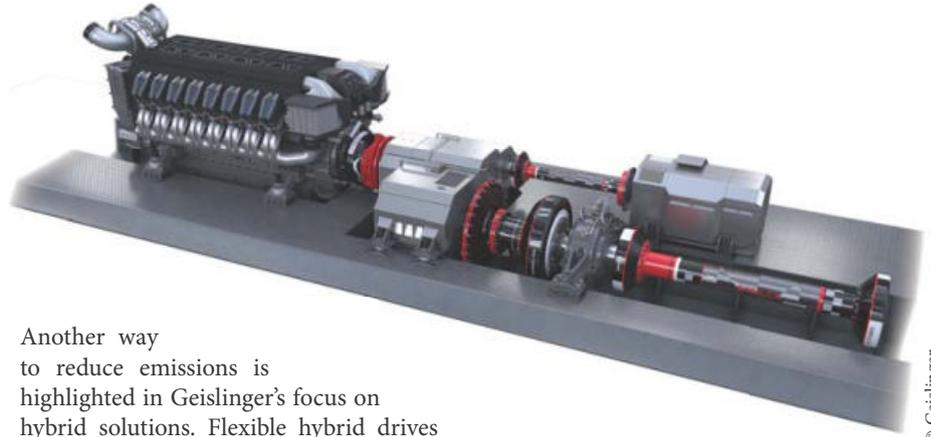
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## Geislinger, Hallwang

Geislinger's focus for SMM is Geislinger Digital Solutions and custom solutions for innovative hybrid powertrains.

One highlight of Geislinger's Digital Solutions is the Monitoring System Mk6, which enables the early detection of wear or fault patterns through torsional vibration and power monitoring of the powertrain. Maintenance can thus be planned more accurately, saving time and money on unplanned repairs. Geislinger Digital Solutions' newly implemented, cloud-based Geislinger Analytics Platform (GAP) utilises extensive data analysis in combination with the information from the Monitoring System to initialise predictive analysis and anomaly detection. Furthermore, it also enables ship operators and technical staff to gain insights into vessel and fleet performance remotely. In light of upcoming CII regulations, features like shaft power, vibration monitoring, and efficient data storage are getting even more critical.



© Geislinger

Another way to reduce emissions is highlighted in Geislinger's focus on hybrid solutions. Flexible hybrid drives offer reduced fuel consumption next to an optimisation of the main engine speed, which extends maintenance intervals massively. Geislinger's GESILCO composite product line, for example, provides a wide range of misalignment couplings for use in series or parallel hybrid applications. When operated purely electrically, the torsional vibrations in the drive train and the noise radiated into the water can be significantly reduced. The's

### SILENCO

Coupling is described as »perfect fit«, as it provides optimal acoustic attenuation. The lightweight design of all products helps to enhance overall system efficiency. Geislinger's product portfolio offers a solution for nearly every type of vessel for »Built to last« powertrain solutions.

Hall A3 | booth 105

# HSS



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Hall B,  
Booth 324

Visit our stand at Hall B • No 324 to learn more about how our team of experts scientists focuses on addressing global challenges and adapting to local specifications and requirements throughout the world.



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## Gemak Shipyards, Istanbul

Gemak Group of Companies is one of the pioneer players in Turkey's ship repair, ship conversion, and new shipbuilding field. As one of the biggest shipyard groups in Turkey, Gemak has completed more than 3,000 projects so far from various ship-owners for different vessel types and sizes.

In 2022, Gemak group provided services to a wide range of vessels from pure bulk carriers to container vessels, RoRo/passenger vessels, pure car carriers, and dredger vessels. A broad scope of the works includes docking & general services, cleaning & painting works, steel works, pipe renewals; steel & mechanical outfitting repairs, electrical repairs, refurbishment works, ballast water system installation, and scrubber system retrofit projects.

Apart from the normal dry-docking and repairs, Gemak Group carries out different new building and conversion projects such as;

- Conversion project of a PSV to live fish carrier besides increasing the length of the vessel by 7,6 m,
- Upgrading of a vessel by increasing the jacking height by about 10 m and performance of structural modifications for new crane installation,
- New building of offshore wind energy platform,
- New building of offshore wind turbine,
- New building of the world's biggest live fish farm.

With extensive technical infrastructure, engineering quality, and relevant work experience; Gemak strive its best to keep its position as a preferable yard in

the Mediterranean area for unique projects and vessels. A permanent team of in-house designers and engineers represent the backbone of its design philosophy and culture. These are supported by multidisciplinary teams at the TGE Research and Development Center, Turkey's first R&D center for the maritime industry. In addition to all industrial activities, Gemak Group is proud to be the first shipyard in Turkey to start a sustainability program and plans.

For the following years, Gemak has competitive strategies and activities that are intended to strengthen its market focus, enhance its service quality, and improve its management efficiency.

**Hall B3 EG | booth 209**

## Gromex, Ammersbek

Whether O-rings, piston rings, shaft seals or special seals, Gromex has more than 40 years of experience with special seals for large machinery in the maritime sector. The headquarter including production as well as the main warehouse are based in the metropolitan area of Hamburg – with subsidiaries and production locations all over the world.

From Hamburg Gromex provides customers with important components in industries where precision is needed and where there is no room for tolerances. Not only with customized solutions, but also with international standard and DIN certified.

All threads come together on an area of more than 7.500 m<sup>2</sup>. The product range is bigger than 150.000 articles, of which more than 40.000 units are always available from stock.

**Hall A1 | booth 516**



© Gromex

## German Naval Yards, Kiel



© GNYK

German Naval Yards presents its new corvette design at this year's SMM 2022. The corvette was designed in close collaboration with the team from the sister shipyard CMN. Compared to the already built naval vessels from the extensive portfolio of the French group CMN Naval, this is a completely new development.

The new »Seaguard 96« design is the latest corvette capable of conducting a full range of naval operations. She is equipped with the latest generation of Combat Management Systems featuring a 3D radar and a full range of weapon systems and sensors dedicated to Anti Air and Anti Surface Warfare, customisable for the end user.

The hull form has been developed from the group's proven lines with a slender bow section to enhance sea keeping and efficiency. Topsides and superstructures are characterised by a state-of-the-art stealthy and modular design, with an integrated main mast and flush side hull compartments. The stern boasts an adequate helicopter platform with a hangar. The corvette is 96 m long and 13.5 m wide with a displacement of 2,000 t and accommodations for 60 persons. The propulsion and power generation system are centred on twin main diesel engines and CPP propellers, together with four diesel generators, providing a maximum speed of 28 kn and an endurance of over 4,000 nm.

**Hall B4 EG | booth 213**

## GSR Services, Südergellersen

Overtaking responsibility for the next generations by supporting competitive sustainability today. Requirements keep changing, and GSR Services has been at the forefront of all developments for over 15 years. The vast experience is based on R&D, participation in technical and legal forums, understanding stakeholders' demands

and looking beyond boundaries – from the cradle to the grave. A thorough understanding of requirements paired with innovative ideas, technical & legal know-how and customer orientation guarantees full compliance for clients without shortcuts.

Hall A4 EG | booth 01

## Hanseaticsoft, Hamburg

Driving digital transformation in fleet management: Cloud Fleet Manager (CFM) is offered by Hanseaticsoft, part of Lloyd's Register's Maritime Performance Services division.

It is a cloud-based all-in-one software solution for shipping companies and centralises all information by removing data silos and makes insights available for all employees as well as crews at sea.

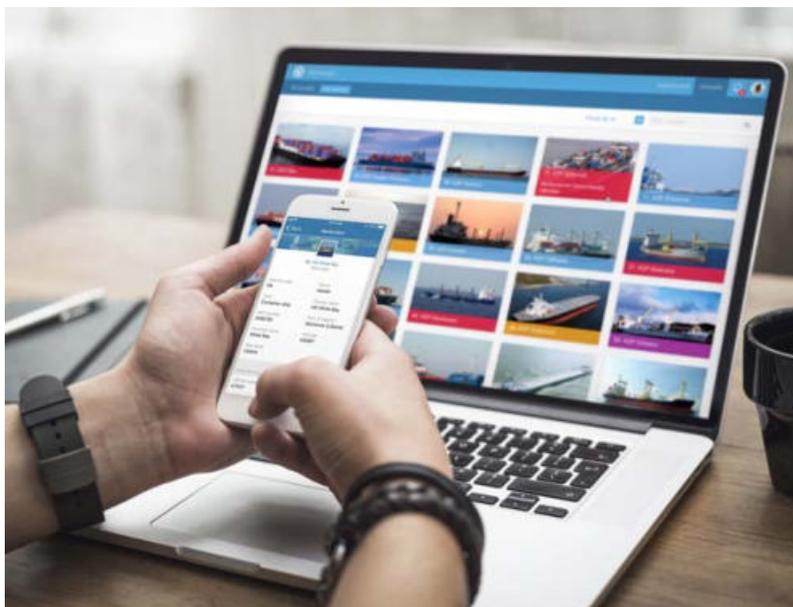
Cloud Fleet Manager offers applications that are optimised for all the different departments of shipping companies and increases collaboration, streamlines processes, and can be used intuitively. The cloud-based design offers the freedom to use it anytime, anywhere, and browser-independent. Even on a smartphone, a user always has ac-

cess to the most important information. Since the system is web-based it can be used in the office without any installation.

With Cloud Fleet Manager, staff can work in interactive teams to e.g., simplify crew management or seamlessly share, manage and resolve service requests.

From payroll to purchasing, CFM promotes higher productivity and economies at fleet rather than vessel scale. Whether it's finding relevant data on vessels, crew members or employees or scheduling maintenance, all can be done with just a few clicks. Thanks to powerful APIs it's simple to integrate existing systems. Enhanced reporting and analytics options, paint a powerful picture.

Hall B4 EG | booth 112



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## Dr. E. Horn, Gärtringen

Dr. E. Horn, a manufacturer of sensor systems for monitoring large engines in the maritime market, based in Gärtringen, Baden-Württemberg, announces a market launch of new Bearing Monitoring System BMS3 for 2-stroke engines.

The newly developed BMS3 generation sensor system is based on constant engine monitoring concerning the distance between the sensor and the crosshead in the lower dead position. Minimal deviations are registered and therefore indicate bearing wear. In addition, the temperature of the oil is measured at various places on the engine and dissolved water content in the oil is monitored (Water in Oil Sensor). As an option, the system offers precise

temperature monitoring of the cylinder liners. The new version meets the requirements for open data communication via modern interfaces. The BMS3 uses the latest hardware components and delivers data from terminal boxes to the HMI via Ethernet. Customer operator terminals can be easily connected as the Main Unit provides data via a web browser. A dual-core concept separates internal and external communication.

Lastly, a cost reduction program was implemented to respond to increased market prices for electronic components.

The Dr. E. Horn Bearing Monitoring System has been firmly established in the 2-stroke engine segment for over a dec-



Dr. E. Horn

ade: More than 2,400 systems for continuous monitoring of bearing wear have been in use since 2008.

**Hall A3 | booth 238**

## Imes, Kaufbeuren

The German Imes GmbH, a specialist in cylinder pressure sensors and engine monitoring systems, will present the next generation of its electronic handheld devices type EPM on its booth A2 235 at SMM in Hamburg.

Since 2008 the electronic indicator EPM-XP has been in series production, and now, Imes offers four different EPM types: EPM-Peak, EPM-XP, EPM-XPplus and EPM-XPplus-vibro.

All EPM devices are battery-powered, compact and lightweight handheld devices for 2- and 4-stroke diesel engines. They are easy to use, robust, and have high accuracy. There is no need for factory calibration after several years of operation. The measurements the user can perform depend on the EPM type. The digital peak pressure indicator EPM-Peak is designed to measure the maximum cylinder pressure value. At the same time, the engine analyser EPM-XPplus-vibro enables advanced combustion pressure measurements, including vibro-acoustic diagnostic on 2- and 4-stroke diesel engines. The further development of EPM Next Generation offers one standard hardware for all EMP types; this enables a simple upgrade from peak pressure indicator EPM-Peak to engine analyser EPM-XPplus-vibro. The user can download a higher version from the Internet and sending the device back to IMES is unnecessary.

The collected data of all EPM types can be displayed and evaluated from the EPM visualisation software. The device will be



© Imes

connected to a PC via a USB port, and the visualisation software identifies the EPM type and activates the corresponding software functions. Depending on the instrument, peak pressure, pressure- and combustion behaviour, performance data and valve timing will be evaluated and analysed. If the PC is connected to the internet, it will be automatically checked if there are any hardware or visualisation software updates. The user can install the updates, and they are free of charge.

Furthermore, the optimised handheld devices of the EPM Next Generation offer two additional function keys for easier handling and a more extensive and comprehensive display.

All devices of the EPM family are equipped with the very robust cylinder pressure sensor HTT-06, which offers good thermodynamic performance. They all have a battery capacity of more than 20 working hours.

**Hall A2 | booth 235**

## Kaeser Kompressoren, Coburg

Rotary screw compressors and blowers: Whether service air or compressed air for special applications such as nitrogen generation, Kaeser offers the solution for all shipboard compressors. Kaeser's marine compressors are certified by all principal marine industry authorities (American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, RINA, Lloyd's Register, Korean Register, etc.). In addition to the reliability of its equipment, Kaeser also offers a Marine Service for arising issues as well as for regular service intervals.

With its SK/ASK/ASD-series rotary screw marine compressors, Kaeser offers a solution for owners, who are looking for energy-efficient and cost-effective nitrogen systems. Flow rates range between 1.3 and 5.4 m<sup>3</sup>/min and stable discharge pressures from 8 to 16 bar(g). Kaeser



Kompressoren also offers specially adapted blowers in its marine product range, which can be used to supply air for such applications as air lubrication systems or wastewater treatment systems aboard cruise ships. Blowers are also used in anti-heeling systems to preserve cargo during loading and unloading.

Hall A3 | booth 114

## Knaack & Jahn Schiffbau, Hamburg



Knaack & Jahn present their comprehensive and sustainable portfolio with a full-service profile: »The 4-dimension specialists«. Four established service packages will continue to be the critical dimensions in shipbuilding services and modern retrofitting today and in the future: Piping, Steelwork, HVACR, Fire Protection.

The company is headquartered in Hamburg with branches in Bremen and Kiel respectively. In complex projects across the industry, Knaack & Jahn demonstrate their service dimensions and fi-

nancial efficiency. This is essential because the cost of ultramodern conversions and retrofits resulting from international requirements and regulations must be calculable for customers and their commercial challenges. The balance between technically oriented and forward-looking alignment in ongoing work processes is a positive reality for Knaack & Jahn. Clear messages, clear designs and clear mindsets are also value systems for quality and full-service profiles today and tomorrow.

Hall B5 | booth 524

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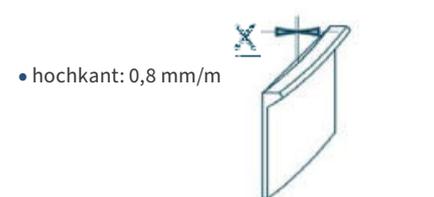
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## Korean Register, Gangseo-gu

Founded in 1960 and a member of the International Association of Classification Societies (IACS) since 1988, Korean Register (KR) is an internationally recognised classification society headquartered in the Republic of Korea.

With a network of more than 60 exclusive offices in major international ports such as Hamburg, Singapore, Shanghai, Busan, New York, etc. KR has been delivering comprehensive technical services to our customers in various industrial sectors, including ship classification, energy & environment, third-party certification and naval services. KR is also fully committed to developing state-of-the-art technologies designed to protect our precious environment and create a more sustainable future.

At the upcoming SMM 2022, KR will share its latest achievements in decarbonisation and digitalisation technologies, such as KR GEARS and KR SeaTrust-Real360, on stand B2.EG.214.

KR GEARS is an online GHG emission data management system and offers a simple way to calculate each vessel's compliance with GHG regulations using the basic key information. Through KR GEARS, shipping companies can use a fleet-based management system, a data collection plan and approval/verification of collected data, a CII/EEXI calculation function, a visualisation function and an additional operation efficiency index calculation function.



© Korean Register

SeaTrust-Real360 is a virtual reality-based ship training simulator that enables immersive and intuitive ship training. Using the simulator, trainees can experience working with the actual hull structure and equipment arrangement without time and space restrictions. Visitors will be able to experience SeaTrust-Real360 for themselves on the KR stand.

**Hall B2 EG | booth 214**

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Flywheel energy storage



**Hall 6**  
**Stand 124**

## Lloyd's Register, London

At Lloyd's Register (LR) booth the digital transformation and the maritime energy transition will be in sharp focus. »As we move forwards on the decarbonisation journey, we must look to mobilise our readiness for the challenges ahead, working together to recognise the potential that each new and alternative fuel has in contributing to a sustainable future in shipping«, the company says.

Transitioning the industry towards the safe adoption of these new fuels will require a considered approach. The industry needs standardisation, and LR has been driving the industry forward by leveraging the benefits of a prescriptive approach whilst embracing the necessary risk-based approach to manage all the novel challenges the transition presents.

Whilst safety is paramount for the adoption of future fuels, it's also important to address technology, investment and community readiness – factors that



© Lloyd's Register

are tracked by the LR Decarbonisation Hub's zero-carbon fuel monitor. Due to LR, the company knows how important these insights are for ship owners and operators to create safe and sustainable pathways to a zero-carbon future. From ship design and engineering to launch

and beyond, LR is committed to working with all major industry stakeholders to advance innovation and help customers get closer to their goal of building a more efficient ship.

Hall B | booth 107

# YOUR PARTNER FOR HYBRID SOLUTIONS

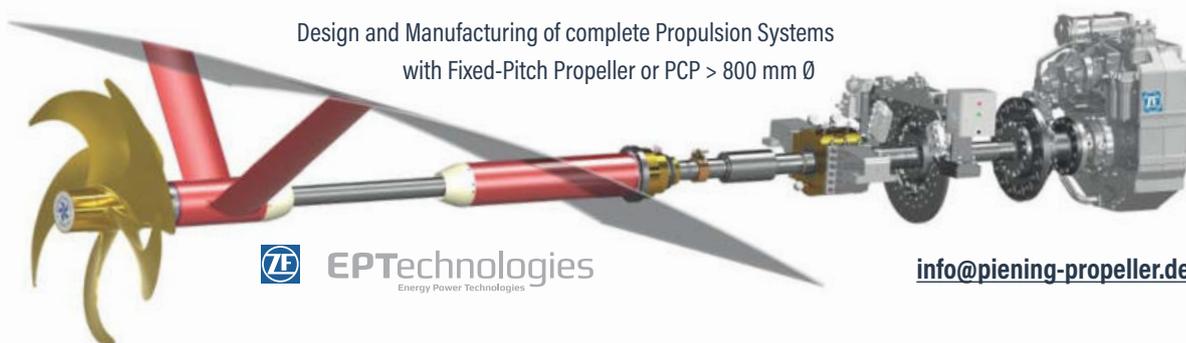
With its partners and in combination with their own FPP and CPP systems, Piening Propeller can realize Hybrid solutions for any kind of demand, with:

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## Loewe Marine, Bremen

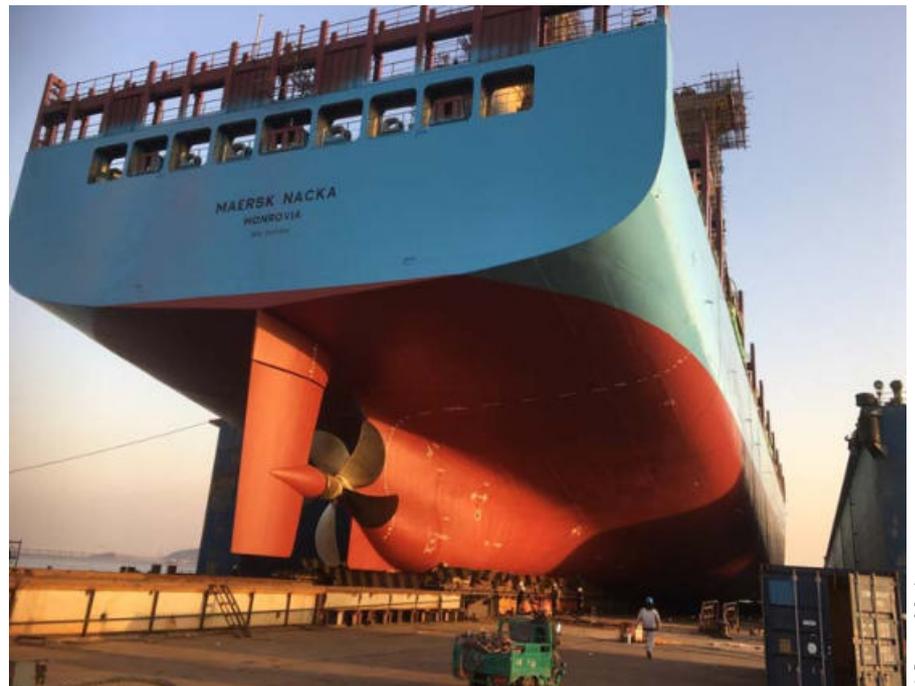
Loewe Marine, an independent, privately owned German company, was founded in 2011 and operates today as established shipbuilding supplier as well as consulting and service company for shipping companies, navies and shipyards. Key markets are modern manoeuvring and decarbonisation technologies.

Loewe Marine's current portfolio includes the design, production, installation procedures providing tailored operational performance requests of highly efficient manoeuvring technology and full spade rudders of all profile types and sizes for all ship types, the supply, repair and maintenance of customised steering gears, the production of WEDs (Wake Equalizing Ducts) to increase propulsion efficiency, as well as consulting for shipping companies, navies, yards and suppliers in the field of »Green Shipping« and decarbonisation.

The Loewe Biosecurity division, founded in 2018, meanwhile a company of its own, combines maritime know-how with state-of-the-art technology for the disinfection of surfaces, whole rooms, operating theatres, lounges and the most effective recirculating air disinfection approaches in enclosed spaces for maritime operations.

During SMM 2022, representatives from Loewe Marine and Loewe Biosecurity can be found as exclusive new-building agents for the Germany market and as sub-exhibitors at the stand of Swiss engine manufacturer WinGD.

The appointment of Loewe Marine as



© Loewe Marine

agent for WinGD was announced in June this year. The two partners reportedly agree that slow-speed engines will continue to be the most important propulsion system for shipping in the future.

To this end, Winterthur-based manufacturer WinGD, a member of the CSSC group of companies, has a portfolio of integrated technologies that is said to help shipowners and manager to achieve zero emissions. These include engines that use carbon-neutral fuels, electric hybrid drives and efficiency-enhancing digital technologies. An evolved energy system, the partners

say, goes hand in hand with optimised ship design, which includes more efficient propulsion systems – an area in which Loewe Marine is active.

With flexible ship designs and propulsion systems that can be reconfigured under all conditions customers shall be enabled to respond effectively to fluctuating fuel prices, alternative fuel options and new emission regulations. By partnering with Loewe Marine, WinGD intends to be able to advise customers on how best to be prepared for today's increasingly unpredictable markets.

**Hall A3 | booth 108**

## Lutz Aufzüge, Reinbek

The Reinbek-based company Lutz Aufzüge is expanding into Central America with a new subsidiary in Panama.

With Lutz Elevators Americas, the supplier aims to strengthen its presence in North, South and Central America. The core local business is »Marine Elevators Services«, which includes maintenance work, recurring inspections, modernizations, new-build installations, spare parts and repairs for marine elevators. The portfolio

includes solutions for various types of ships – from container vessels to cruise ships.

With the new subsidiary, the company can process orders »much faster and also strategically establish the brand even more strongly on the two American continents.« For international customers, Lutz Elevators Americas will provide service for own elevators as well as third-party equipment. Lutz's service technicians are offshore certified with

expertise on components from all leading manufacturers. They repair, maintain and modernize all marine elevators according to the latest safety requirements.

Since 1927, the Reinbek-based company has been developing elevator systems for a wide variety of areas on land and at sea. Currently 300 people at eight German and international locations are employed.

**Hall B4 EG | booth 101**



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## MAN Energy Solutions, Augsburg



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This year, MAN Energy Solutions' stand at SMM in Hamburg will concentrate on three main topics.

The first is that of »Future fuels and Decarbonisation«, including the pioneering role played by its subsidiary, MAN Cryo, within systems for the storage, distribution and handling of liquefied gases. Attention will also be given to the great, green potential of SNG (Synthetic Natural Gas) and other promising alternative fuels like methanol, ammonia and hydrogen. Re hydrogen, the company will also showcase its recent, significant investment in our daughter company, H-Tec Systems, the hydrogen electrolysis specialist.

The second topic has to do with new »Products and »Solutions, including such

engines as the methanol-burning MELGIM and the versatile, high-speed MAN 175D. MAN Energy Solutions will also reveal the latest addition to its four-stroke portfolio during the trade fair – a dual-fuel, medium-speed type. The company will also highlight LNG propulsion solutions – including some for methane slip – and look at the propeller and aft-ship solutions.

Finally, MAN Energy Solutions will highlight »Operations and Digitalisation«, covering software as a service – including PrimeServ Assist, its key digital, remote service – along with two- and four-stroke retrofits and MAN's Omnicare third-party service concept.

Hall 3 | booth 301

## MAN Engines, Nürnberg

At SMM 2022, MAN Engines focuses on sustainable drive solutions and presents two ways to reduce CO<sub>2</sub> emissions for workboats: The MAN Smart Hybrid Experience enables driving and anchoring without any emissions, while the dual-fuel engine can significantly reduce exhaust emissions when operating with hydrogen, the company says. MAN Engine's goal is to support the customers with »climate-friendly« drives. The manufacturer offers a wide variety of solutions for this. The MAN Smart Hybrid Experience is

based on a conventional marine engine connected to the permanent magnet synchronous motor/generator with an electromagnetic coupling. On this, in turn, the marine gearbox is flanged via another clutch. The electric motor-generator unit of the MAN Smart Hybrid Experience generates a rated output of 184 kW or 368 kW. The solution was presented for yacht applications for the first time in 2021. Because it can be combined with all MAN marine engines of the current D2862 (V12), D2868 (V8) and D2676

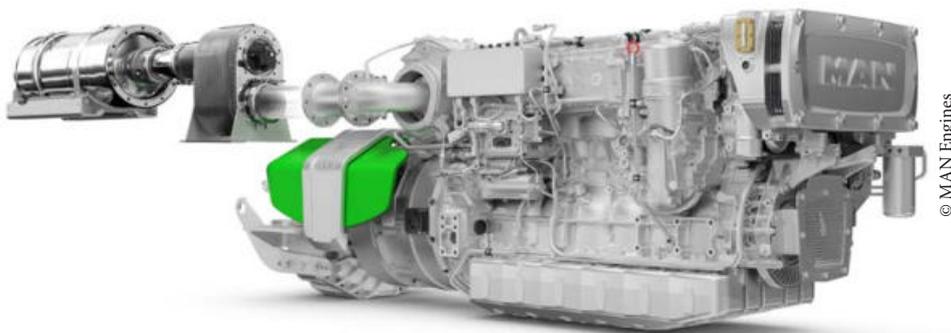
(R6) series, it can also be used to extend the performance of engines for light, medium and heavy-duty applications in commercial shipping.

Thus, total system outputs per powertrain from 147 kW to 1,838 kW can be displayed, and degrees of hybridisation of up to 71% of the total output can be achieved.

With the different operating modes, zero-emission, diesel-electric, cross-over, hotel, boost and diesel operation, economical driving styles, range increase, access to emission control zones (ECA – Emission Controlled Areas) through emission-free driving or additional power as a power boost can be »easily« implemented. In hotel mode, the battery capacities can also be used in reclining mode. With the MAN Smart Hybrid Experience, the company says, is the first engine supplier to offer a complete hybrid system from a single source.

At SMM in Hamburg MAN Engines will present an exhibit of the MAN Smart Hybrid Experience based on its D26 inline six-cylinder engine with an electric motor with an output of 184 kW and an exhaust gas after-treatment system. In this combination, a system output of up to 809 kW can be displayed. In addition, MAN Engines will present a dual-fuel hydrogen engine with an SCR system.

Hall A3 | booth 211



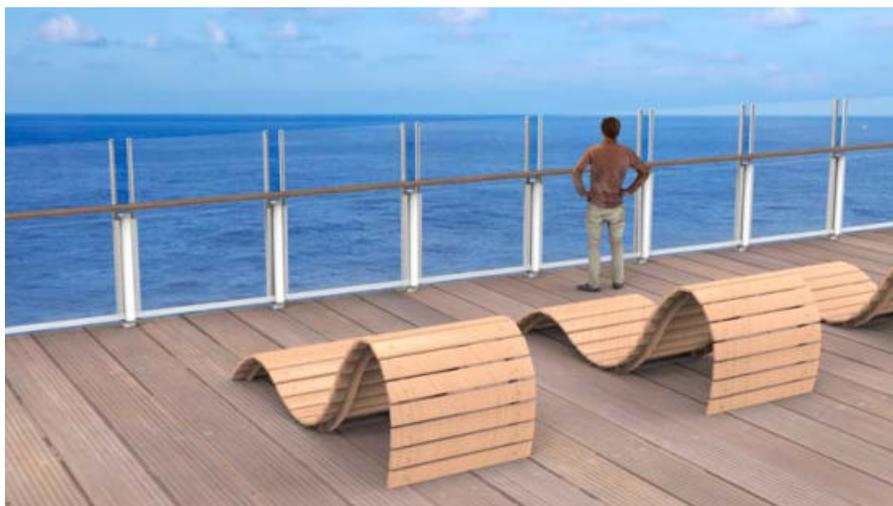
© MAN Engines

## Marine glazing Brombach + Gess, Sulz am Neckar

Marine glazing Brombach + Gess has been a specialist in glass bonding in the shipbuilding industry for more than 30 years. The broad portfolio of glazing solutions includes the Loggia-Cabin Window system. Through intelligent use of space, the system provides more comfort and privacy in passenger cabins than conventional balcony cabins, in which the outdoor area can only be used in appropriate weather conditions. A vertically sectioned panoramic glass front delineates the new cabin type. The upper pane can be lowered in front of the fixed pane and, together with the movable handrail, forms a glazed balustrade.

When closed, the two panes form a room-height, sealed glass facade. The concept ensures absolute weather resistance.

Another turn-key product is the Balustrade-Move system which is used where flexible design is required, such as for outdoor restaurant patios or sun deck



© Brombach

areas, to transform particularly windy places into cosy corners. The system can either be a new installation or upgrade existing balustrades. The movable pane is extended by lightly pressing onto the

glass's edge, transforming the railing into a windbreak. Lowering the movable pane is done similarly.

Hall B5 | booth 310

## Martechnic, Hamburg

At the SMM 2022, Martechnic will showcase its products for regular or continuous on-site oil analysis programs: portable oil test devices, test kits, and intelligent oil sensor technology. In the context of sustainability strategy and decarbonisation of the international maritime sector, Martechnic's oil analysis equipment is regarded as an excellent supporting tool during the testing of zero-carbon fuel options (e.g.,

ammonia, methanol, hydrogen, synthetic gas etc.) on board a vessel with dual-fuel engines and beyond that. Depending on a customer-specific application project, suitable oil analysis equipment enables effective routine monitoring of oil and machine conditions. Thereby, any possible off-specification issues could get detected and fixed at the right time, avoiding costly engine failures, significant damages and un-

controlled downtimes. Moreover, on-site testing can help assess alternative fuels' impact (e.g. methanol) on lubricating oil deterioration by means of trend analysis.

Martechnic will be pleased to share its expertise and to present its latest innovations for increasing engine operation efficiency at stand 432, hall A1.

Hall A1 | booth 432



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## Mecklenburger Metallguss (MMG), Waren an der Müritz



The manufacturer MMG shows its »modern and sustainable« propeller during the SMM. Due to the company, the use of innovative technologies guarantees design quality and manufacturing accuracy for the individual products. The complete manufacturing process takes place under one roof and is therefore particularly efficient and sustainable.

Highly »qualified employees, excellent design, many years of experience with different molding processes, various melting furnaces and versatile machining centers offer maximum flexibility to meet all customer requirements«, MMG says. »Quality, flexibility, reliability and adherence to delivery dates are the guarantee for successful projects in new shipbuilding as well as in the retrofit sector«, the company continues. MMG sets the »highest standards« in every step of pro-

duction. Future-oriented key technologies form the basis of highly efficient propulsion systems. For decades, MMG has been setting standards in the development of customized marine propulsion systems.

Since 2013, MMG has been equipping existing ships with new, significantly more efficient propellers in response to the increasing economic and ecological challenges in maritime transport. These individual propellers then perfectly match the ship's operational profile and lead to a significant reduction in fuel consumption as well as emissions. Together with its specialists and partners, MMG solves »complex problems and develop sustainable, holistic solutions for the world of tomorrow«, the company says.

Hall A3 | booth 308

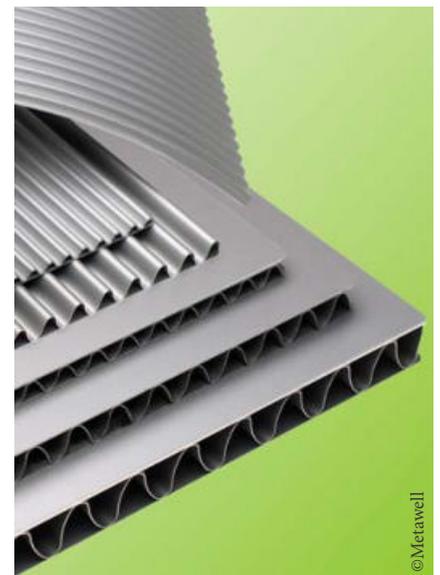
## Metawell, Neuburg

At the SMM exhibition the company Metawell shows its aluminium light-weight panels. Due to the manufacturer they are perfect for wide use in shipbuilding because of their low weight, high bending strength, additional corrosion protection and minimal material thickness.

The Metawell team puts great effort into finding weight-saving solutions wherever possible, the company says.

This year the focus of the exhibition will be on an innovative floor system, an easy-to-install wall system with panels of only 3.25 kg/m<sup>2</sup>, and customised columns. The panels are certified as non-combustible C-Class Divisions, according to MED/3.64.

Hall B5 | booth 215



 An advertisement for the book 'COLUMBIA SHIPMANAGEMENT' by Koehler. The background is a sunset over a body of water with a ship. The book cover is shown on the left, featuring the DSM logo and the text 'COLUMBIA SHIPMANAGEMENT PROUD TO MANAGE'. The main text in the center reads 'DSM COLUMBIA SHIPMANAGEMENT'. A blue circular badge on the right says 'AB JETZT FÜR 49,95 € ERHÄLTlich!'. The ISBN 978-3-7822-1516-9 is listed below the main text, along with '380 Seiten | Hardcover | Deutsch/Englisch'. A QR code is in the bottom right corner. The Koehler logo is at the bottom center.

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## Minimax, Bad Oldesloe

Alternative engines to reduce emissions and the storage of electrical energy create new challenges for fire protection.

Minimax develops, designs and installs fire protection and firefighting systems that meet current regulations and customer requirements. The solutions are individually geared to the customer's application and fulfil the requirements of the classification boards. Its range of systems covers protection for alternative engines such as fuel cells (powered by methanol or hydrogen), battery rooms, and transformers.

The high-pressure water mist extinguishing system »Minifog marine XP« offers comprehensive protection for all areas on a ship. A Minifog marine XP system can protect machinery space up to 8,235 m<sup>2</sup> and save up to 90% of water. Significantly fewer sprinklers are required than with conventional systems. The use of

the Minifog marine XP system satisfies the demand for minimising space and weight, along with the highest safety requirements.

Furthermore, Minimax offers an alternative solution – the MX 1230 marine extinguishing system with the proven and tested clean agent Novec™ 1230. As this extinguishant is neither corrosive nor electrically conductive, no damage can result from short circuits or residue on sensitive components. This makes MX 1230 marine systems perfectly suited to shipping applications and protecting sensitive components. The non-existing ozone hazard of the extinguishing agent ensures future viability.

Minimax also covers the entire supply chain for fire maxprotection systems, ensuring that the systems incorporate the latest technology and work reliably.

Hall 1 | booth 227



## Navis Germany, Flensburg

Navis, a provider of maritime software solutions for the cargo loading, stowage planning and vessel performance, will showcase its latest loading computer software.

The loading computer MACS3 offers a set of integrated calculations around stability, strength, lashing, dangerous goods and trim optimisation. The newly integrated Lashing Monitor with Operational Guidance helps crews and ship operators to minimise the risk of cargo incidents in heavy weather.

This set of loading computer calculation results is now also available in the

cloud on the MACS3 Connected platform and can be shared with respective internal and external stakeholders.

All calculations from the loading computer are integrated into the Navis stowage planning tool Stowman DS. In that way, all limits around the vessel's stability, strength, lashing, segregation and trim can already be checked during the planning stage and help considerably reduce the amount of communication between ship and shore. This combination allows liners to take informed action in the daily challenge of balancing maximised and

profitable cargo intake and safe sailings for the vessel, cargo and crew during sea passage.

Navis' cloud-based Fleet Performance solution Bluetracker helps shipowners and ship managers reduce fuel and emissions and develop strategies to meet future sustainability regulations. The dedicated CII module not only monitors emissions and ship ratings but also predicts and simulates results to prepare for the future of Greener Shipping.

Hall B | booth 434

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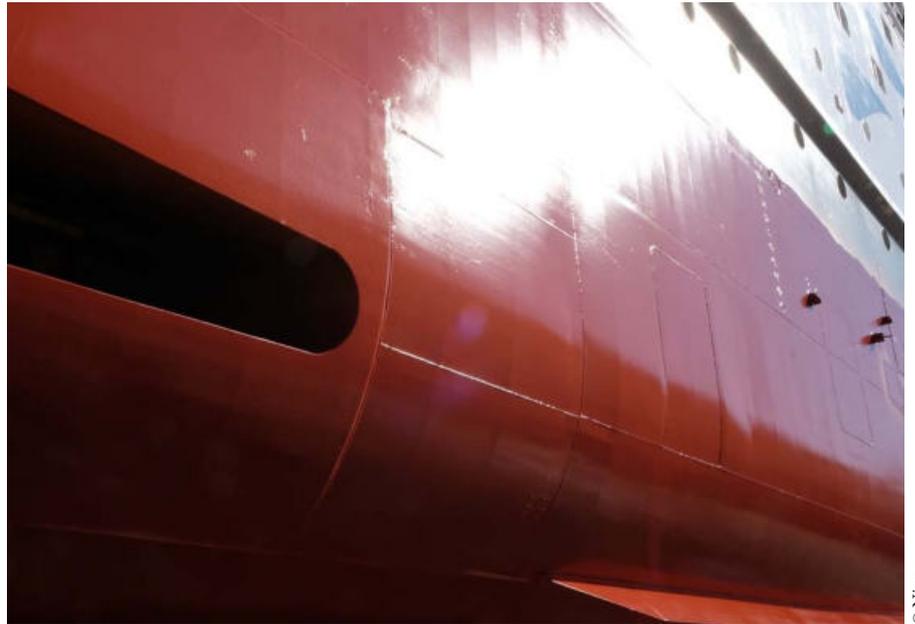
## Nippon Paint Marine Europe, Glückstadt

The marine coatings specialist Nippon Paint Marine will showcase its Aquaterras antifouling system and a range of protective coating technologies.

Aquaterras is a patent-protected micro-domain self-polishing copolymer antifouling material based on a carefully formulated mix of hydrophilic and hydrophobic components, similar to the technology used to create artificial hearts and blood vessels where surfaces are required to suppress platelet aggregation. It contains no heavy biocidal pigments, active ingredients or silicone but is proven to reduce ship's drag (frictional resistance) by up to 10%.

The technology has been incorporated into the company's newly launched nano-technology-based Fastar coating, developed to more precisely control the release of active biocides. A Fastar application reduces painting times in drydock by up to 37% and can reduce fuel consumption by up to 8%.

Nippon Paint Marine representatives will also be on hand to discuss other



© Nippon

products in the company's range of marine coatings, including the proven self-indicating corrosion protection system

NOA and its established A-LF Sea range of fuel-saving SPCs.

**Hall B5 | booth 204**

## Noris Group, Nürnberg



© Noris

The exhibitor Noris equips cargo, passenger and specialised vessels, as well as yachts. The supplier is also active in the inland navigation sector.

Alongside complex automation systems, Noris can also supply customers

with the complete measuring chain.

From sensors to signal processing, right through to visualisation. Due to the company the products meet the requirements of all common ship classification societies (American Bureau of Shipping, Bureau

Veritas, DNV, Lloyd's Register, etc.).

The product portfolio in shipbuilding includes:

- Propulsion control systems (Remote control)
- Alarm, monitoring and control systems for engines and gearboxes (IAMCS)
- Power and energy management systems
- Control systems for pumps, valves, fans and other auxiliary systems
- Emergency order telegraphs
- Solutions for bridge design for a uniform look and feel on the bridge

In the field of measurement technology and visualisation, Noris offers:

- Sensors (speed, temperature, acceleration, rotation angle, wireless, etc.)
- Analogue indicators (round or square design, different sizes, 360° indicators for rudder angle, individual scale design)
- Signal processing (measuring transducers, limit value switches, multifunctional devices)

**Hall B6 | booth 316**

## NVL Group, Bremen

At this year's SMM, the Lürssen group of companies' defence division exhibits for the first time under the new name, NVL Group.

On a stand of around 100 m<sup>2</sup>, visitors will find out everything they need to know about the NVL Group, the shipyards in Germany, and the international operations.

NVL will present its »comprehensive product and service portfolio, provide information on the latest innovations in naval shipbuilding and take visitors on a journey into the marine technologies of tomorrow«, the shipbuilder says. The stand's visual design »emphasises communication and interaction, inviting visitors to interact in a relaxed atmosphere«, the company continues.

NVL Group is an independent group of shipyards headquartered in Bremen, Germany. NVL stands for Naval Vessels



© NVL

Lürssen. Since October 2021, the company has taken on the construction, upgrade, maintenance and repair of naval vessels within the Lürssen group.

The company is also this year's main sponsor of the conference MS&D,

**Hall B4 EG | booth 219**



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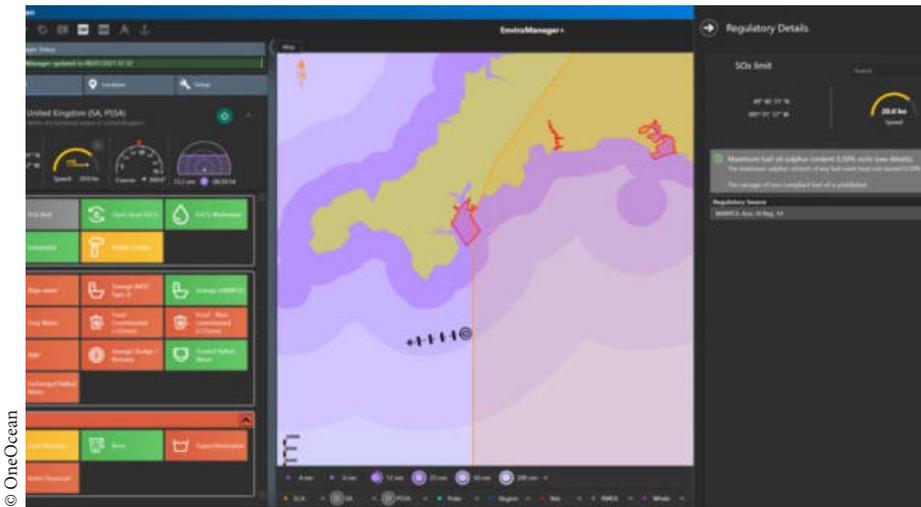
- TO OWNERS
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**MEET US IN HALL B5 |**

**BOOTH 304**

## OneOcean Group, London



© OneOcean

The London based company OneOcean puts data and customers »at the heart of everything they do, and their API solutions are no different«, OneOcean says. APIs

give customers access to previously out-of-reach data for valuable insights and more informed decision-making. OneOcean's navigation and environmental data sol-

utions allows them to tailor the content, frequency, and location where data is received from to embed it into your existing systems. OneOcean provides quality data; they say and the user can choose when and how to use it.

With increasing pressure to reduce emissions and minimise the impact on the marine environment, coupled with more regulations and reporting requirements – environmental risk management is a top priority for fleet owners and operators.

OneOcean's environmental products provide real-time data and clarity to fulfil requirements and make it easy for ship & shoreside teams to achieve fleet-wide environmental excellence.

The company will also be speaker at the Digital Transition Stage at SMM, on Wednesday, 10:30 – 10:40.

**Hall B6 | booth 503**

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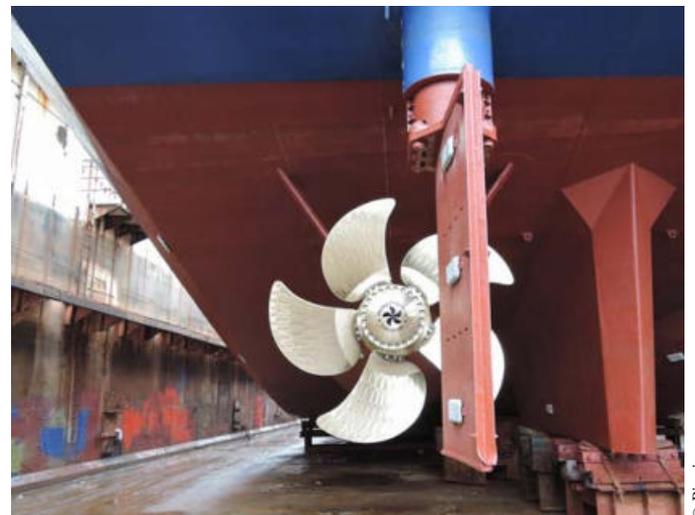


## Piening Propeller, Glückstadt

The company Otto Piening GmbH located in Glückstadt was founded in 1929. Since then the company it is specialized in the construction and manufacturing of complete drive lines with fixed pitch propellers as well as for the customer service, maintenance and repair. Piening has also launched its own concept and design for controllable pitch propellers.

The main focus aimed to integrate into the new design all the experiences, which were made in the recent decades with products of »Piening Marine Technic SL«, of the ZF Marine Group, as well as with service & overhauls of other original equipment manufacturers.

**Hall A3 | booth 226**



© Piening

## Phoenix Contact, Blomberg

Phoenix Contact is a provider of solutions in connection technology, electronics and automation. The company's headquarter is in Blomberg, Westphalia. More than 20,000 people are working for the company.

At the SMM the mGuard 4302 security router will be in focus. It has a DNV certification and is based on the newly developed router platform.

Due to its high processing speed, data throughput of almost 1,000 Mbps is achieved. This means that the device covers current and future requirements resulting from the growing digitalisation and networking of maritime systems and enables secure remote maintenance with augmented reality, Phoenix Contact says.

The device is based on well-established mGuard security technology and offers a wide range of security functions. The mGuard 4302 include a conditional fire-



© Phoenix Contact

wall for flexible rules and advanced firewall and NAT functions for regulating VPN communication and performing network segmentation. Central management, which can be implemented with

the corresponding Device Manager, means that the devices can be configured at any time.

**Hall B6 | booth 430**

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## Pleiger, Witten



© Pleiger

The German company Pleiger Maschinenbau, based in Witten, in the Ruhr valley, is a manufacturer of electro-hydraulic actuators (EHS) for control globe, butterfly and ball valves with diameters between DN15 and DN3400. Application ranges from liquid and gas cargo handling, ballast water, blackwater and greywater to the control of fuel oil tanks.

Advantages of the electro-hydraulic actuators system are that due to its decentralised design with a superposed hydraulic power pack, complex installations of long hydraulic pipes can be avoided. This means major leakages and contaminations can be eliminated. Apart from actuators, Pleiger also delivers control visualisation.

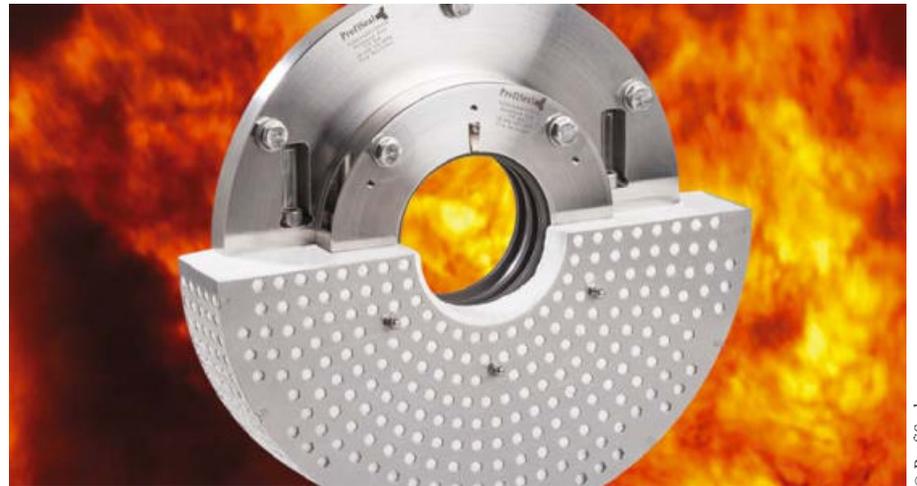
Hall A1 | booth 229

## ProfiSeal, Schornsheim

Since 1995 ProfiSeal is specialised in the design and manufacturing of highly reliable propeller shaft and stern tube seals as well as bulkhead seals for the shipbuilding Industry. ProfiSeal is the inventor of the only fireproof bulkhead seal worldwide, fulfilling the fire protection classification »A-60«. The seals are type approved by international classification societies, including DNV, LR, BV, and KR and have the product design assessment (PDA) from ABS. Hence, the products are fulfilling the highest demands and standards. ProfiSeal says, it offers fast and reliable engineering support for customised projects, and therefore its seals one can find in many new-

build and refit projects. ProfiSeal is supplying workboats, offshore-supply vessels, passenger vessels (including RoRo, RoPax), fast patrol boats, governmental boats, special crafts, yachts and super-yachts. Typically, the company's propeller shaft seals are used for propulsion systems with a shaft diameter of up to 200 mm, while our bulkhead seals are used in the range from 50 mm to 600 mm shaft diameter. ProfiSeals also offers contract manufacturing of components made of aluminium, bronze and stainless steel up to a dimension of 800 x 800 x 800 mm.

Hall A3 | booth 408



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## Proton Motor Fuel Cell, Puchheim

The hydrogen fuel cell producer Proton Motor Fuel Cell says, its enables ship and maritime manufacturers to implement climate-neutral fuel cell propulsion systems for the inland and offshore sectors. The company specialises in modular systems and uses graphitic bipolar plates, as only these meet the applications' technical and commercial performance requirements.

The core components of Proton Motor's systems are the high-performance fuel cell stacks developed in-house with their globally unique double integration possibility. Thanks to the modular system for hydrogen, air and cooling, specific requirements can be implemented quickly or can be easily delivered as pre-assembled »plug & play« solutions. The company works with customers and partners from concept development to implementation and throughout the entire product life cycle; plus, they will be certified on request. Twenty-five years of electrification knowledge and an extensive supplier network from related technical areas, such as hydrogen storage systems, are also available, Proton says.

The CleanTech specialist has a series production plant and has successfully established itself with maritime references for 15 years. Currently, this includes the delivery of the new fuel cell system »Hy-Ship 72« to the shipbuilding group Finc-



© Proton

antieri as well as the cooperation in the project »Ma-Hy-Hy« (Marine-Hydrogen-Hybrid), which is being implemented together with Torqeedo for the development of a marine high-voltage hybrid propulsion system with battery and hydrogen fuel cell.

In 2008, Proton Motor designed the »Zemships«-funded (Zero Emission Ships) fuel cell passenger ferry »Alsterwasser« with an alternative drive solution for »ATG Alster-Touristik GmbH« – which was in regular ferry service until 2014.

The UK company »Acua Ocean« was supplied with a fuel cell in 2021 for the world's first CO<sub>2</sub>-free unmanned ship for maritime surveillance and protection. The company is also an internationally recognised technology partner in the »e-SHyIPS« project at the EU level. The aim is to define guidelines on the practical introduction of hydrogen in maritime passenger transport for a clean and sustainable environment.

Hall 4 | booth 207

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Information and content provided by respective companies

## Raytheon Anschütz, Kiel



© Raytheon Anschütz

Kiel based Raytheon Anschütz joins the SMM fair trade with its portfolio of navigational products. Demonstrations include products and capabilities in current

and future bridge and navigation systems and the services provided to customers and partners.

The exhibit ranges from gyro compasses, which have proven their value in thousands of installations through fuel-efficient autopilots and modern navigational software applications, to innovations such as the »eLog« electronic logbook.

The electronic logbook provides high-quality, secured data documentation, eliminates the risk of incomplete or improperly filled logbooks and reduces the crew's workload onboard the ship. Further, transforming numerous manual data processes into a digital chain of data for exchange, processing and analysis could deliver valuable voyage insights in real-time for ship owners, managers or even authorities, ports and logistic com-

panies, the navigation expert says. Radar NX and ECDIS NX introduce additional smart features, including various naval and coast guard features. The new features combine with unparalleled intuitiveness to enable navigators to safely and precisely navigate the vessel or perform a specific mission.

Synapsis NX in the centre of the booth. Due to Raytheon Anschütz it is a state-of-the-art, compliant integrated navigation system (INS), created on modular network infrastructure and software, loaded with additional integration capabilities using a digital KVM matrix, and several options for customisation that are typically required onboard of vessels on advanced or safety-sensitive missions.

Hall B6 | booth 304

## Reintjes, Hameln

The Reintjes Hybrid System is a flexible propulsion system that combines two different power sources – an electric motor and a combustion engine (diesel, dual fuel or gas engine) – simply and efficiently, the SMM exhibitor says.

In the low load range, purely electric operation is possible. The electric motor can be switched on as an additional booster in the normal range using the combustion engine and the upper load range, e.g., with wind or sea from ahead.

When operating with the combustion engine, the electric motor can also be used as a generator and use the excess energy to charge a battery pack if installed.

In addition to installations in new-build ships, the system can be retrofitted to existing vessels.

Reintjes is a one-stop shop for engineering, hardware, installation and ser-

vice. The hardware scope of supply includes the gearbox, the electric motor/generator, the coupling between the electric motor and the gearbox, the frequency converter for the electric motor, and a drive control and monitoring system.

The combination of electric motors and combustion engines in the drive train enables an efficient and flexible propulsion solution across the entire power range. At low speed, smooth and quiet operation is possible, as only the electric motor drives the ship. A combustion engine with a lower power output can be selected, as the upper load range can be supplied by simultaneous operation of both propulsion systems.

This also results in fewer CO<sub>2</sub> emissions, as the operation is more efficient and thus more fuel-efficient than with conventional drive systems with only one combustion engine.



© Reintjes

Due to the company the Reintjes Hybrid System is a sustainable solution that contributes to achieving climate targets.

Hall A4 | booth 211

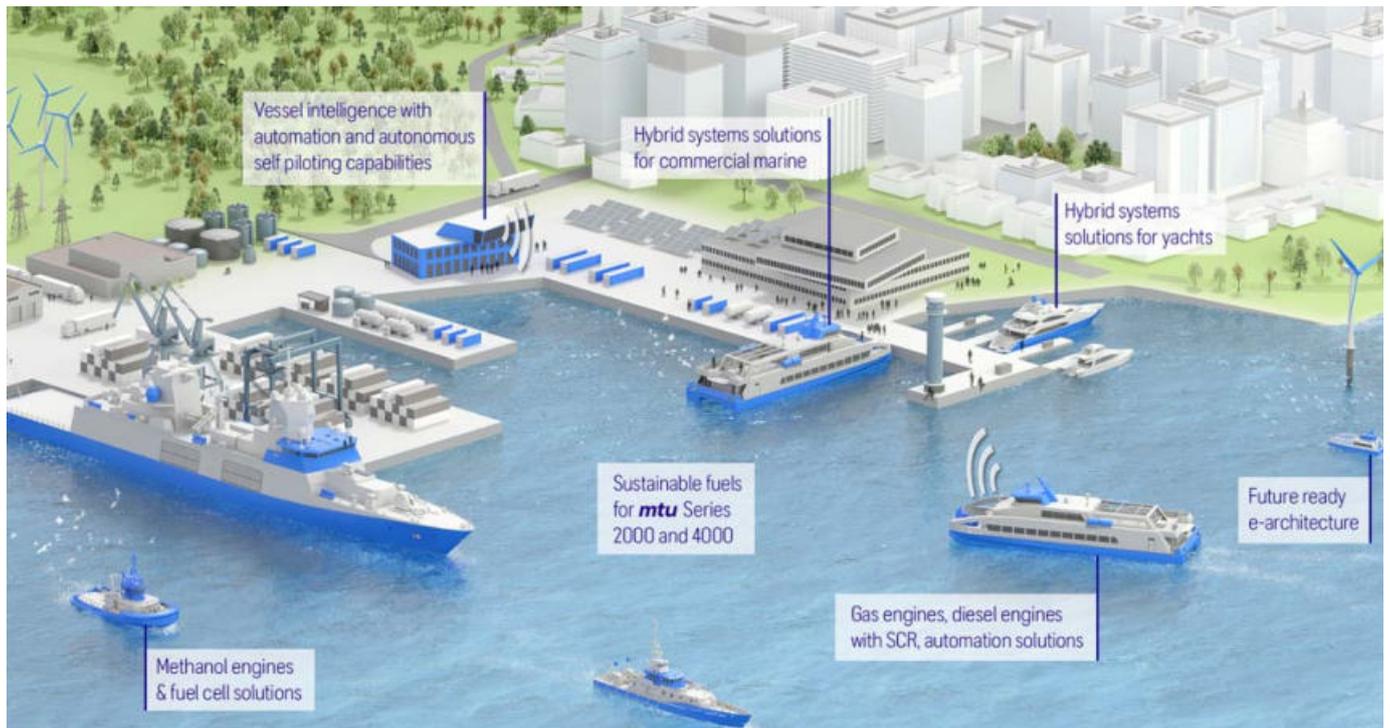


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## Rolls-Royce Power Systems, Friedrichshafen



Rolls-Royce presents at SMM the claim »Pioneering the journey to net zero« new mtu marine solutions for propulsion, automation and service. Rolls-Royce experts will take visitors on a journey toward climate neutrality – from diesel engines with exhaust gas after-treatment and gas engines to their use with sustainable fuels and hybrid systems to methanol engines and fuel cell systems, the company says.

With a view to its strategy of being »the innovation leader in the marine industry« and providing customers with complete

propulsion and control solutions from the bridge to the propeller, Rolls-Royce will also be exhibiting its latest range of mtu NautiQ marine automation products. In 2021 Rolls-Royce had announced, as part of its »Net Zero at Power Systems«-program, that it would realign its product portfolio so that by 2030, sustainable fuels and new mtu technologies can achieve greenhouse gas emissions reduction of 35% compared to 2019.

Since the last SMM in 2018, Rolls-Royce says, that its has fully realigned the marine portfolio to actively support their

customers on their journey to carbon neutrality.

In the meantime, the company is already working on methanol engines and fuel cell systems for marine applications and is developing electrolyzers to produce green hydrogen. According to a clear roadmap, marine diesel propulsion systems will gradually be approved for EN15940 sustainable fuels, such as HVO (hydrogenated vegetable oil), from the fourth quarter of 2022.

Hall A3 | booth 307

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## Schaffran Propeller + Service, Lübeck



© Schaffran

The Lübeck based company Schaffran designs and manufactures custom-made propellers, complete shaft installations up to a length of 16m, and hydraulically operated controllable pitch propellers.

Particular emphasis is being put on high efficiency with low fuel consumption and minimising noise and vibration for all ship propulsion systems.

Schaffran is approved by all common classification societies, and Schffran's factory is certified by Bureau Veritas according to DIN EN ISO 9001:2015.

At the SMM exhibition the manufacturer shows his portfolio with a wide range of products. These include among others:

- Fixed pitch propellers acc. ISO 484 class »S« or »I«
- Controllable pitch propellers acc. ISO 484 class »S« or »Iq
- Propeller- and intermediate shafts up to a length of 16 m
- Stern tubes with sealings and bearings
- Shaft brackets, Nozzles
- Repair-, assembly- and spare part service

Hall A3 | booth 415

## Schwepper Beschlag, Heiligenhaus



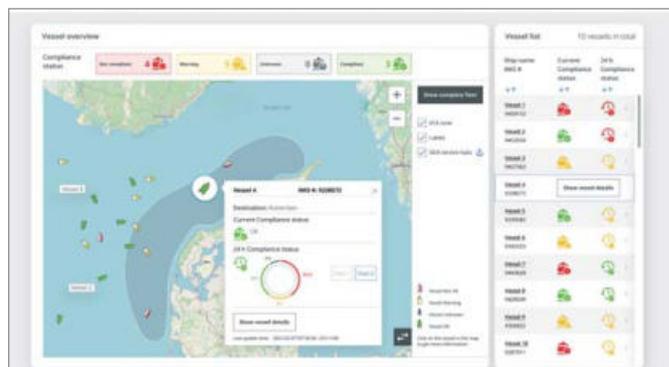
© Schwepper

Schwepper's product range comprises everything from locks to handrail systems or hardware for the interiors or accommodation areas. The company is DIN ISO 9001 certified. Mainly used materials are aluminium, stainless steel, brass and the according coatings. 70% of the sales are made with standard products and 30% for individual and customised orders. The company works with a worldwide network of agencies and distributors as its channel to the re-

spective country and culture. Numerous – in particular, US – Navy projects were also successfully realised, the company says, and Schwepper, a »preferred supplier« for various global navies, underlines this image.

Hall B5 | booth 122

## SICK, Waldkirch



© Sick

With the latest tracking software from SICK, customers can track and visualise the fleet's emissions. Making the efficiency of scrubber system transparent and minimising the risk of non-compliance and incurring fines.

SICK offers the complete solution portfolio to keep the ships safe at sea. The MARSIC ship emissions measurement device, competent on-site service through the global service port structure and intelligent service with digital solutions, SICK says.

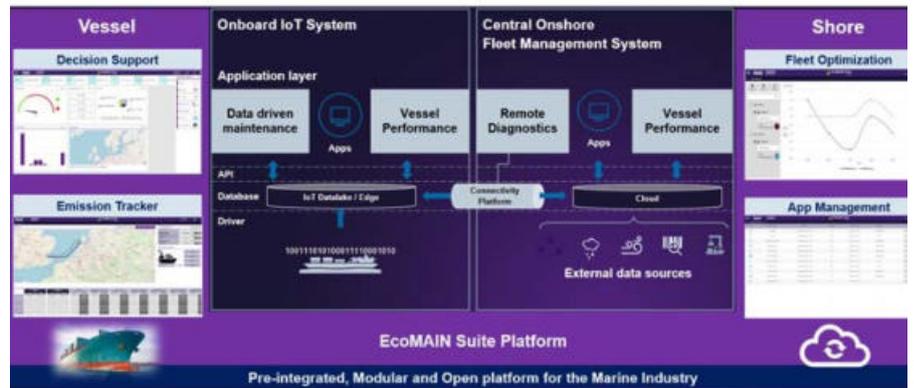
Hall A1 | booth 146

## Siemens Energy, Hamburg

Digital transformation, climate change and maritime energy transition are the key topics at this year's shipbuilding trade show. Siemens' focus at the SMM is digitalisation and decarbonisation.

Decarbonising the marine industry is important and complex. According to Siemens, the company is partnering with customers to develop propulsion solutions for marine vessels, making them environmentally friendly and economically efficient. The BlueDrive hybrid solution, fuel cells and batteries are just a few of Siemens' answers to face this challenge.

Digitalisation with the ecosystem SI-SHIP EcoMAIN means optimising ship operation, saving operational costs and reducing the environmental footprint. This comprehensive solution represents the latest developments in advanced digitalisation. The digital ecosystem generates the flexibility to combinedifferent solutions, both those from Siemens Ener-



gy's businesses or in partnership with highly specialised third parties.

Visitors can experience at the show how digitalisation is affecting all areas of ship operation. How innovations are the driving force to improve the environmental performance of vessels and

achieve ambitious decarbonisation targets. And how »open digital ecosystems« can increase data transparency, help to save fuel and minimise costs and emissions, Siemens Energy says.

Hall B6 | booth 324

A//

# Acceleron

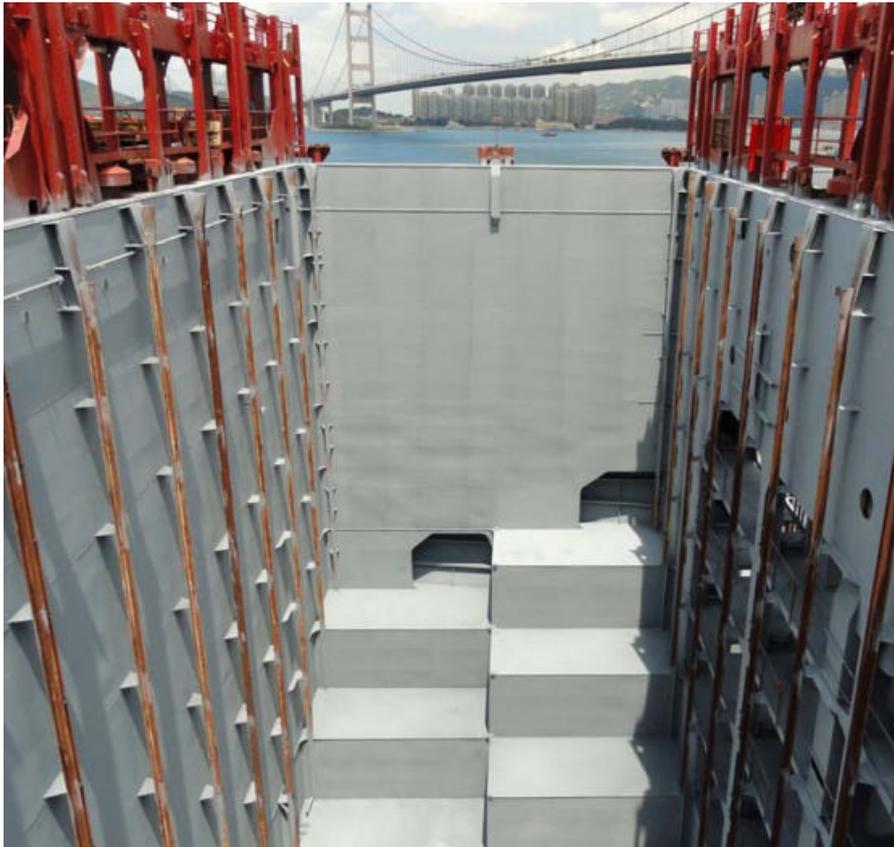
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Hall A3, booth 216



## Steelpaint, Kitzingen



© Steelpaint

Steelpaint is a German coatings company located in Kitzingen, Germany, producing high-performance single-component coatings based on polyurethane and silicone. These products

are marketed worldwide under the Steelpaint brand, a registered trademark, for use in hydraulic and civil structural engineering and the shipbuilding industry. The company highlights that the coat-

ings are reliable, long-lasting, hard-wearing, protecting structures anywhere, from the arctic to the tropics. Steelpaint MCPU products are suitable for application at temperatures ranging from  $-5^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  and at air humidity levels of up to 98%. All too often, two-component coatings suffer due to mistakes made during mixing or go to waste because the reaction time has been exceeded. Steelpaints MCPU coatings overcome these problems and can be applied using brushes, rollers or airless spraying. The MCPU coatings can even withstand high levels of mechanical strain, the manufacturer says. Cargo and Container holds, including the tank tops coated with Steelpaint SP-PU-ZINC primer, are protected from corrosion. And inter-coat adhesion is always problem-free, even when there are long intervals between the coating applications. The moisture-cured polyurethane (MCPU) products are suitable and reliable, long-lasting anti-corrosion coatings for ballast tanks. Steelpaint supports its clients on-site to provide solutions to their needs, analysing their specific anti-corrosion requirements and developing tailor-made concepts, after which application engineers assist throughout the coating process.

Hall B5 | booth 333

## Schiffbautechnische Gesellschaft, Hamburg

The Schiffbautechnische Gesellschaft (STG) is the »German Society for Maritime Technology«. STG is a network and a knowledge platform for maritime technology. The core of the STG is the technical and scientific progress in ship technology and operation.

The STG achieves this by disseminating and exchanging research and development results in maritime technology with a view to practical use cases. The support of practice-oriented research projects increases ship technology's economic efficiency and operation.

As the central contact point for transferring knowledge and experience in all maritime areas, the STG makes a decisive contribution to the industry's competitiveness.

In 17 specialist committees, maritime experts from research and businesses work in various areas of ship technology. Employees from shipping companies, shipyards, companies in the supply industry, universities and research institutions work on complex tasks on current technical, economic and ecological topics.

In interdisciplinary conferences, the STG members share their specialist knowledge, analyse deficits in action, ensure information flow, and develop system-compatible solutions.

The STG offers a pool of highly qualified members for everyone interested in ship technology and shipping.

Hall B4 EG | booth 209



© STG

## Survitec, London



© Survitec

Survitec, the product manufacturer in safety and survival technology, will showcase Seahaven, its latest evacuation system, at SMM this year.

Having received Lloyd's Register Type Approval earlier this year, Survitec is set to revolutionise how shipowners, designers and builders meet SOLAS requirements for passenger ships' safe and rapid evacuation. Survitec announced this year that it is teaming up with Norwegian Cruise Line Holdings

Ltd to work on a cruise ship design incorporating Seahaven as the primary means of evacuation for the cruise line's Prima class of ships.

The 1,060-person capacity Seahaven, a self-propelled inflatable lifeboat, marks a significant step forward in maritime.

Typically, a 4,000-passenger capacity cruise ship would require at least 12 to 16 lifeboats and up to four MES with life rafts, taking about 30 minutes to evacuate the ship. Just four Seahaven's would be

required to evacuate the same number of passengers in the same amount of time, freeing up to an additional 85% of existing lifeboat deck space for greater passenger experiences.

Visitors will also learn more about Survitec fire safety solutions for vessels operating and transporting alternative marine fuels and a portfolio of life-saving appliances and wearables.

Hall 5 | booth 528

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## TEHAG, Moers



At this year's SMM trade fair Tehag will present practical solutions for the after-treatment of exhaust gases from combustion engines. In previous years, the topic of »green shipping« has become increasingly important in both inland waterway and maritime shipping. With its product portfolio of various soot particle filter systems, SCR systems and oxidation catalysts, Tehag offers several solutions for the reduction of soot particles, nitrogen oxides and other pollutants from the exhaust gas of diesel and gas engines, both for the original equipment of new ships and the retrofitting of existing ships. In particular, the possibility of retrofitting modern exhaust gas cleaning technology to existing engines represents a particularly sustainable solution.

In addition to the effective systems for cleaning exhaust gases from combustion engines, the company, based in Moers, will present compact and robust solutions for reducing noise emissions from combustion engines with the Tenor spiral silencer and industrial silencer system.

Hall A4 | booth 230

## TGE Marine Gas Engineering, Bonn

The Bonn based TGE Marine is one of the leading liquefied gas systems' provider, specialising in the design and engineering of cargo handling systems and tanks for any type of liquefied gas carriers, bunker ships and FSRUs.

TGE Marine also work under engineering, procurement, construction and supervision (EPCS) agreements on liquefied fuel gas systems for LNG, NH<sub>3</sub> and future fuels. The company has designed and supplied more than 250 gas handling and storage systems for gas tankers, FSRUs and FPSOs in addition to fuel gas ap-

plications built at shipyards all over the world. TGE Marine says, its broad expertise in liquefied gas- and cryogenic systems is based on more than 40 years' of engineering experience in the marine industry.

With passion for innovation and strategy that focuses on innovations for greener shipping TGE Marine says, its supporting the industry with technical solutions for a sustainable future.

Hall A4 | booth 235

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Hall A2 / Stand 138

## Thompson Industries, Wood Dale

Thompson Industries., a manufacturer of linear motion control solutions, will be showcasing its comprehensive line of electric linear actuators for marine applications. Thomson electric linear actuators help increase productivity and quality, improve safety and ergonomics, and reduce fuel and maintenance costs, the company says.

Thomson electric linear actuators, including the Electrak and Max Jac product lines, are well suited for the marine industry due to their compact size, a wide range of load capabilities, high efficiency and optional 12, 24 or 48 VDC operation that allow for automating tasks, and improving efficiency and safety, the company continues. The actuators provide users with increased flexibility by allowing them to remotely control key aspects of a boat's operation without the complexity, high cost and maintenance associated with hydraulic systems. This capability eliminates the need for periodic maintenance and space-consuming hoses, pumps, filters and regulators and improves safety for the operator. Thomson electric actuators fits for a wide array of tasks in marine vessels.

Thomson says that its actuators are resilient, adaptable and engineered to withstand harsh environments. Other standard features include rugged IP67 (static), IP69K (static) and IP66 (static/dynamic) ratings for superior corrosion resistance and surface treatments that prevent oxidation in salinity environments. The Electrak platform offers further versatility with custom-tailored modifications to meet individual application requirements. Here are a few examples of linear actuator applications that can assist in the automation of marine vessels:

- Raising, lowering and holding hatch covers.
- Boom control when raising or lowering the mainsail



© Thompson

- Opening, closing and holding windows
- Downhaul control
- Raising and lowering trailer hitches
- Seat positioning/adjustment
- Engine hatch and wakeboard tower automation
- Throttle and shift actuation

Hall A | booth 201

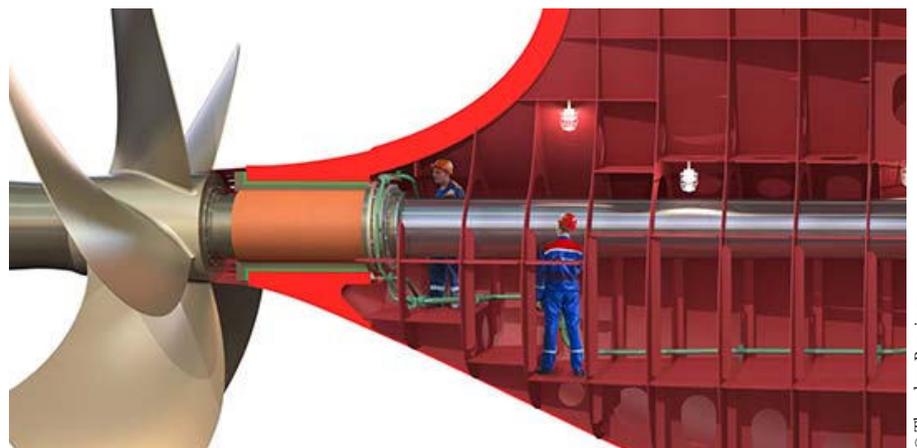
## Thordon Bearings, Burlington

Grease-free seals and bearings manufacturer Thordon Bearings will be fielding an executive team of technical experts at this year's SMM to answer questions about the revolutionary stern tubeless ship, which received ABS Type Approval.

Working in collaboration with Shanghai Merchant Ship Design & Research Institute (SDARI-CSSC), National Technical University of Athens (NTUA) and ABS Global Ships System Centre, Thordon Bearings has developed a ship design that removes the need for a stern tube.

According to the research parties, by simply reconfiguring the stern tube space with a shorter shaft and moving the engine further aft, high operational costs can be made, cargo capacity increased, and the vessel's environmental footprint greatly improved.

Thordon's award-winning Compac Open Seawater Lubricated Propeller Shaft System, which is integral to the new stern tubeless ship concept, is already in



© Thordon Bearings

use in more than 500 of the 700 or so ships worldwide operate water-lubricated bearings.

The Compac bearing is a proprietary non-metallic polymeric material lubricated by seawater that offers considerable advantages in bearing wear life predicta-

bility and reliability. It is also cheaper to maintain and easier to install than oil lubricated systems and meets classification society criteria for extended shaft inspections and withdrawal.

Hall A4 | booth 123

## Top Glory Marine Service, Hamburg

Top Glory Marine Service provides disposal services for seagoing ships worldwide, focusing on sustainability and cost efficiency. With two main offices in Germany and China and two representative offices in Dubai and Cristobal, its team of 19 experts in the waste management and the shipping industry is focused on the needs of our customers and the daily challenges.

With a constantly growing network of approximately 200 disposal companies in more than 400 ports, Top Glory says, it

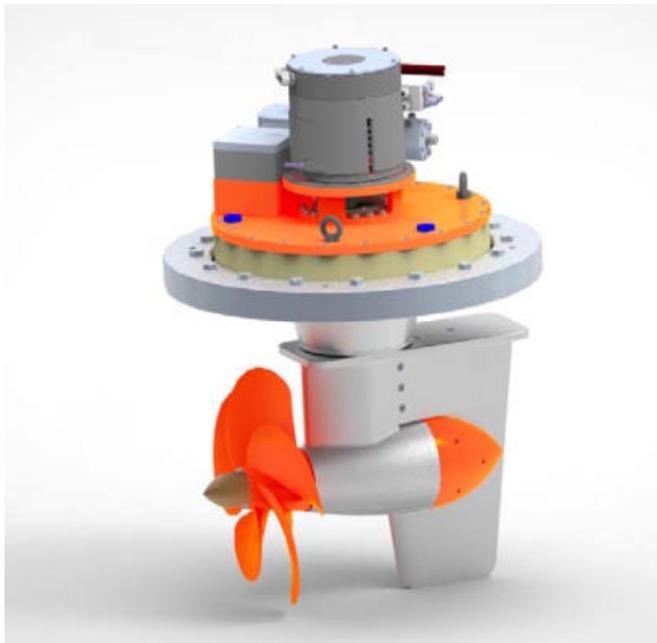
optimise the disposal strategy of more than 400 vessels based on their schedules.

The company's HSEQ Department regularly monitors and evaluates the disposal companies from the network to meet our customers' disposal obligations in accordance with local regulations and the International Maritime Organization (IMO) MARPOL Convention. To meet these important requirements, Top Glory conduct regular audits of disposal companies. In addition, Top Glory provides its customers with complete docu-

mentation of all services rendered to achieve a high level of transparency. The services are processed entirely via our Enviro Fleet Cloud and can be viewed via customer access. This enables the customer to analyse the discharged waste streams per ship and fleet in a particular period and to monitor set KPIs. This provides ideal support for ISO-certified companies and their ESG reports.

Hall B2 | booth 310

## Torqueedo, Gilching



© Torqueedo

says, it's ideal for manoeuvring on Europe's inland waterways. Visitors to this year's SMM maritime trade fair can view the latest product for green shipping and meet with Torqueedo's project sales staff at the VSM (Verband für Schiffbau und Meerestechnik) joint stand.

The thruster delivers continuous power of 50 kW and peak power of 65 kW and can rotate up to 360 degrees. Two drives are a typical configuration for the average 80 to 200-passenger vessel, but up to four may be installed. With service intervals of as long as 25,000 hours and the optimised efficiency of a pulling propeller, Deep Blue will further lower the total cost of ownership for climate-friendly ferries, water taxis, and shipping on inland waterways.

The first project with the new Deep Blue thruster was launched last fall and entered its first service season this year. The »Antonia vom Kamp« is an ES-TRIN-certified solar-electric passenger ferry that travels between the mainland town of Kamp and the island of Usedom in Northern Germany.

The 14.65 metre-long ferry has a 4.3 kWp solar installation and can transport up to 20 people and 15 bicycles per trip at a cruising speed of 8 km/h, with a max speed of 15km/h.

Deep Blue lithium-ion batteries power the system with a battery bank capacity of 80 kWh. These high-capacity batteries meet IEC 62619 and IEC 62620 requirements, making them suitable for inland vessels according to ES-TRIN requirements.

At the SMM exhibition Torqueedo will display a fully electric, steerable thruster system that provides up to 65 kW of emission-free power and directional thrust. The manufacturer

Hall B4 | booth 207





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## Transfluid Maschinenbau, Schmallingenberg



© Transfluid

Transfluid Maschinenbau is a producer of production of tube bending and tube processing machines. With the process of CNC-controlled rotary tube forming – newly developed by transfluid – the company is accordingly presented in the »Directory of World Market Leaders« of the South Westphalian chambers of industry and commerce.

The tube forming machines in the t form range offer the perfect tube shaping solutions, Transfluid says. Tube forming is important as an individual or supplementary process, in order to obtain optimally tailored tubes.

Automation systems are offered as fully developed concepts for bending and

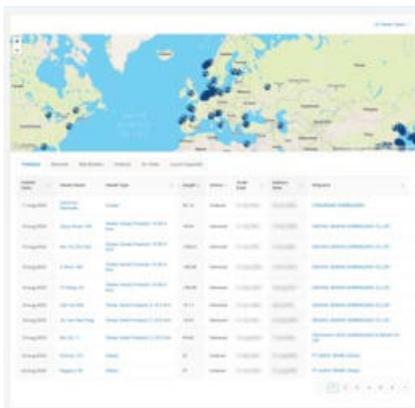
forming technology, under t motion. Transfluid offers also tube cutting machines. Here, the company is able to provide a range of different systems, for example for chipless orbital cutting and special knife separation processes.

Additionally, with the new tu go range, transfluid offers a standardized portfolio of machinery, which is available from stock for immediate delivery.

Besides the company offers the software t project for rapid tube processing. It can be used as an effective online solution for bending machines and the majority of CAD systems.

Hall B2 EG | booth 308

## Trenz, Bremen



© Trenz

Trenz GmbH, based in Bremen and Hamburg, is an international software and hardware company. In addition to individual software solutions, e.g. for the German maritime pilots, Trenz offers on-

line portals with the New Ships Orderbook ([www.new-ships.com](http://www.new-ships.com)) and the industry guide Quer Durch ([www.querdurch.de](http://www.querdurch.de)), which customers use for their daily research. New Ships Orderbook is an analysis and research tool for the maritime industry. It publishes both actual and expected ship orders (»rumours«) in the international shipping market. The comprehensive ship database includes all newbuildings with ship details since 2015. With useful features such as search query storage including email alerts for new search results, shipbuilding market statistics, a convenient export function and favorites savings, the online database is a daily market monitoring tool for any sales manager in the shipbuilding industry.

Hall B2 EG | booth 310



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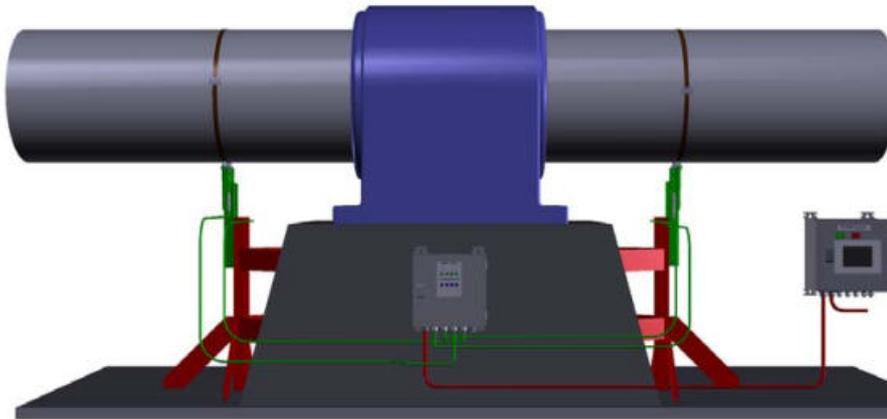


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## TX Marine Messsysteme, Kiebitzreihe



© TX Marine

TX Marine Messsysteme develops and produces innovative in-house products in the field of technical measuring and analysis equipment for the maritime industry. The company says, it grew to a

system provider for complete solutions in the field of on-board measurement technology. These include advice to the customer, depending on requirements and budget, delivery of measurement

technology, service providers, support and training. With its expertise in these areas, TX Marine also offers a comprehensive portfolio of services, especially when it comes to measuring data evaluation and diagnosis of the engine.

The product portfolio is divided into own developed and produced and trading goods with the product areas of engine performance monitoring, performance software & hardware, flow measurement, condition monitoring and emission measurement.

The core competence of the company are especially marine engines, therefore the visitors can find on TX Marine's booth systems to improve the performance and also increase longevity and efficiency due to available measurement values like shaft power, pressure curves from your engine or fuel consumption.

Hall B6 | booth 639





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## VDMA Marine Equipment and Systems, Hamburg

The industry association VDMA Marine Equipment and Systems, as part of the VDMA, the largest industrial association in Europe, represents the interests of its approximately 250 member companies. VDMA warmly welcomes its guests to the central stand. Personal exchange in a relaxed atmosphere is the focus of the trade fair presence and will once again be supported by the popular VDMA Barista. However, the VDMA will also be offering a varied programme of short presentations at its stand. One focus will be on information on the newly published MTP integration standard, which is now becoming particularly relevant for European shipbuilding.

VDMA will also offer in-depth information on the MTP (Module Type Package) at the panel event: »Smart Connectivity by MTP – Improvements for Shipping and Shipbuilding« on the Digital Transition Stage in Hall B6 on 08 September 2022, 14:30 – 15:30 h.

In addition, the online directory [german-marine-equipment.de](http://german-marine-equipment.de), a tool for identifying suppliers and partners from the German maritime industry, will be available on-site throughout the trade fair.

Hall A1 | booth 518



© VDMA

## Veinland, Seddiner See



© Veinland

The solutions have been developed and integrated into different industries and sectors. In the maritime industry, for instance, vessel performance monitoring systems, BNWAS, NMEA interfaces, DCU, PCI cards, digital inclinometers, sonar, wind and weather systems are some examples in Veinland's product portfolio since founded. The vessel performance monitoring system, also known as Veinland PIM Onboard Unit, not only helps to reduce CO<sub>2</sub> emission but also assists vessel operators with safe shipping and regulatory compliance in the shipping industry besides contributing to sustainability.

Hall B6 | booth 412

Since 2008, Veinland has been exhibiting at SMM Hamburg. The company offers various hardware and software solutions for maritime applications and professional consultation services in SEEMP, MRV and Cyber Security Management. Some of the SMM highlights include Data Acquisition System to collect ship operation data, Audio and Video devices with 4K resolution and integrated KVM switches, Industrial Gateways complying with IEC61162-460 standard, Digital Chart Servers, NMEA Interfaces and Multiplexers, Power Supply Units, Uninterruptible Power Supply (UPS) and network devices.

Ranging from PCB design, hardware and module development to graphical user interfaces (GUI), every process is carried out in-house thanks to Veinland's vertical integration strategy. Products and solutions are tailor-made to fulfil the needs and requirements of our clients. According to the company, Veinland has already equipped countless ships worldwide with products and systems.

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Information and content provided by respective companies

## Verope, Zug

Verope AG is a joint venture between Pierre Verreet, head and founder of verope and Kiswire Ltd. from South Korea.

The company utilises the expertise of Verope in the particular wire rope market and the long experience of Kiswire Ltd. in production. According to own information they combine long-term established engineering know-how with state-of-the-art improvements to provide the market with »excellent special« wire ropes for your deck crane applications at competitive prices and customised logistics.

For many years Verope has had close cooperation with the Kloska Group, which enables the company to offer technically and logistically customised solutions, Verope says.

Hall A1 | booth 435



© Verope

## V.Group, London

With over 35 years' experience in managing vessels in the shipping, cruise and energy sectors, V.Group is committed to delivering safe and compliant operations through transparency, proactiveness and strong partnerships. V.Group provides a full range

of ship management and marine support services to ship owners and operators around the globe, as well as the ability to blend those services together in unique combinations to meet specific customer needs.

V.Group is due to the company one of the largest marine services providers in the world, leading the way in technical maintenance and support and crew services. The company's services are flexible and provide value, giving the customer confidence that his vessel and crew are fully supported.

Through V.Group's services including travel, catering, well-being, training, supply chain, insurance and technical services, the company offers a one stop shop delivering a cost effective marine operation, enhancing your vessel's performance and sustainability. By providing vessels with global value-add services, the company helps to maintain assets.

V.Group's customers benefit from invaluable technical expertise, as well as a global network of people, data and influence to operate assets at the highest standard of safety and efficiency, the company says. Its holistic approach and detailed understanding of our customers' needs is complemented with a state-of-the-art digital platform. This combination enables V.Group to provide a comprehensive service spanning technical management, commercial operations, insurance and supply chain services for customers, maximising vessel performance and profitability.

Hall B4 EG | booth 200

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## Wallaby Boats, Kappeln

The German company Wallaby Boats from Kappeln has commissioned the Hitzler Werft shipyard in Lauenburg to build the hulls and chassis of the first WB-18 pilot. The WB-18 is the first vessel with a hydraulic suspension system using Nauti-Craft technology. Hydac is supplying the hydraulic system in cooperation with their affiliate Hycom, including engineering, HPU, cylinders and pressure accumulators.

By combining manufacturing techniques with state-of-the-art technology systems, including full »glas cockpit« by Thitronik, automation, power and energy management by Noris, and Nauti-Craft suspension, these vessels have been designed to make transit and personnel transfers to your destination as effortless and as safe as possible.

Slamming impacts are reduced by up to 80% due to the Nauti-Craft suspension technology. The transfer at the offshore wind turbine is as safe as it can be. Even at a sea state of more than 1,75 m Hs, the requirements for a safe transfer are fulfilled, as defined by the Carbon Trust. As a result of the advantages gained using the Nauti-Craft technology, much smaller and more economical vessels can be used than currently required to achieve the performance at the wind turbine or any other transfer situation. This reduces CAPEX and OPEX significantly. The system provides a much safer transfer than “normal” catamarans, even at floating foundations.

The currently designed fleet includes vessels varying in size and features. The smaller sizes, from 12 through 16 m in length, are designated daughter crafts or inshore pilot and rescue boats. They



© Wallaby Boats

are designed in FRP or CRP to optimise the power-weight ratio. The larger sizes, from 16 through 24 m, are made of aluminium and shall serve as CTV in the offshore wind industry, nearshore pilot- or rescue boats. All Wallaby Boats are designed modular and can be converted to suit clients' requirements in a short time.

The Wallaby Boats will be built under any classification society as requested by the owner. They fulfil all requirements for unrestricted operation with automation, power and energy management, and a powerful photo voltaic will have the hybrid power plus class notation.

Hall A1 | booth 138

## Weicon, Münster

Weicon offers a range of chemical products and stripping tools that can be used in the event of repairs, maintenance work and overhauls in the maritime industry. Examples of such products are Plastic Metal and the Marine Emergency Repair Kits.

Plastic Metal is an epoxy resin system consisting of two components, a resin and a hardener. After mixing the two components, Plastic Metal hardens into a solid metal-like material that immediately adheres to almost any surface. When hardened, Plastic Metal can be machined. The material can be drilled, milled, ground or filed as required.

In one field of application for the epoxy resin systems, modern shipbuilding, the materials used must be able to withstand extreme stresses, such as permanent contact with salt water or salty air.

For example, corrosion damage and pitting on tanks, leaking pipelines and castings, and cracks on machine parts can be repaired. Other products for use on the high seas are the Marine Emergency Re-



© Weicon

pair Kits. These kits are used for emergency repairs and maintenance work on board ships. They consist of numerous products that can be used in various cases. The repair kits differ in the scope of

the products included and are suitable for all ships on which repair and maintenance work is regularly carried out.

Hall B5 | booth 235

## WinGD, Winterthur



© WinGD

Swiss marine power company WinGD will present its latest fuel flexible technologies, including engine advances and the energy solutions needed to decarbonise the merchant fleet.

The X-DF engine has been enhanced with X-DF2.0 technology, now available in a compact on-engine version for easy installation. X-DF2.0 improves combustion control, minimising fuel consumption and pilot fuel requirements across the engine load range.

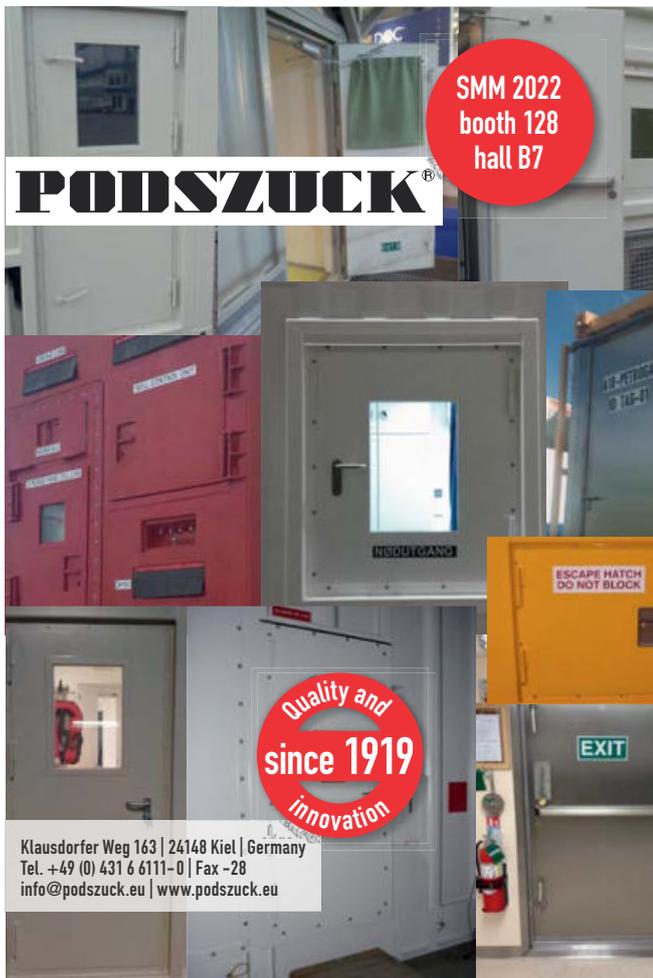
On top of emissions reductions – including meeting Tier III NOx limits in gas and diesel mode – X-DF2.0 cuts methane slip by up to 50%. All WinGD's engines, including those already in service, are retrofittable for ammonia and methanol fuels from 2025.

To drive emissions reductions further and reduce fuel costs, WinGD's X-EL Energy Solutions is a system integration and advisory service for electric and hy-

brid power arrangements with the two-stroke engine at their core. WinGD's expertise ensures the whole system is designed, configured and operated optimally to the vessel's specific requirements, the company says.

To meet the upcoming EEXI regulations, WinGD has developed a simple, cost-effective software-based Power Limitation Solution that assures compliance within a single port stay. And to enable intelligent planning for CII regulations, WinGD is partnering with emissions data specialist Chord X to supplement the WiDE remote engine monitoring platform with a class-approved CII reporting tool that will enable operators to view current and projected vessel CII ratings and drill down into component-level engine insights to see the potential for improving compliance.

Hall A3 | booth 108



## Wempe, Hamburg

The Wempe division Chronometerwerke Maritime Hamburg is a manufacturer of ship's chronometers, clocks and nautical instruments, as well as of electrical ship's time systems (Master and Slave clocks). Wempe time systems are designed for a long-lasting, trouble-free function at very low life cycle costs. They are used worldwide on various cruise ships, mega yachts, and merchant and navy vessels to guarantee a unified time distribution of the UTC and Local time around the vessel's clocks, automation systems and LAN.

Hall B6 | booth 505



© Wempe

## Wiska, Kaltenkirchen

Wiska is presenting several of its latest products from its in-house development. Within its constantly growing range of technical lighting products, the company is offering the new non-metallic LED multi-purpose luminaire 4010 with a luminous flux of 1,200 up to 7,200 lm and a lifetime of 100,000 hours. In addition to the long standard version with 775 mm, there is also a short version with 495 mm. The high-performance lighting, optionally with battery back-up, is corrosion-free and easy to install.

With the new LED searchlight, Wiska extends its existing range with a LED version. Its casing is its latest development to the familiar Wiska octagonal design. It can be used as a searchlight or floodlight and offers two times 18,000 lm. The new product features endless rotation, step-less speed control, a home and booster function and can be



© Wiska

used at minus 25 °C to plus 45 °C. The LED innovations are rounded off by a new high-lumen output version of the floodlight 5000.

The new CCTV camera series also offers a revamped design: The camera station can be rotated 360° endlessly thanks to its developed pan-tilt unit. In contrast, its variant as a fixed camera housing is fixedly installed. The new series replaces the previous stainless-steel series with a new compact design without external cables and an internal connection compartment.

Wiska will also be showing in its latest Combi 304 Mar series a junction box and a rotary switch. Due to the company the combi box brings along many years of experience in non-metallic installation material. The two-component injection moulding convinces at IP66/67 and is manufactured in Wiska's factory. Supplemented by its variant as a rotary switch, our 304 has what it takes to deliver a real alternative to HNA brass products.

Hall B6 | booth 212

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Hall B5, stand 311

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## Woodward L'Orange, Stuttgart

According to Woodward L'Orange the combustion engine industry accelerates the efforts to decarbonise and switch from fossil fuels to alternative fuels produced from renewable sources (P2X), such as hydrogen, methanol and ammonia.

There is a broad variety of combustion concepts for these fuels, and the optimum choice strongly depends on the target application. Woodward and Woodward L'Orange are developing a comprehensive portfolio of injection systems for P2X fuels for large engines, ranging from around 100 kW/Cylinder to over 1000 kW/Cylinder, to enable all possible combustion concepts.

For applications that require the highest power density and efficiency, we have developed our High-Pressure Dual Fuel (HPDF) platform for methanol and ammonia injection with full diesel back-up capability.

Woodward L'Orange's new product range of directly solenoid actuated injection systems is perfectly tailored to meet market demands that require a simpler and retrofittable system:



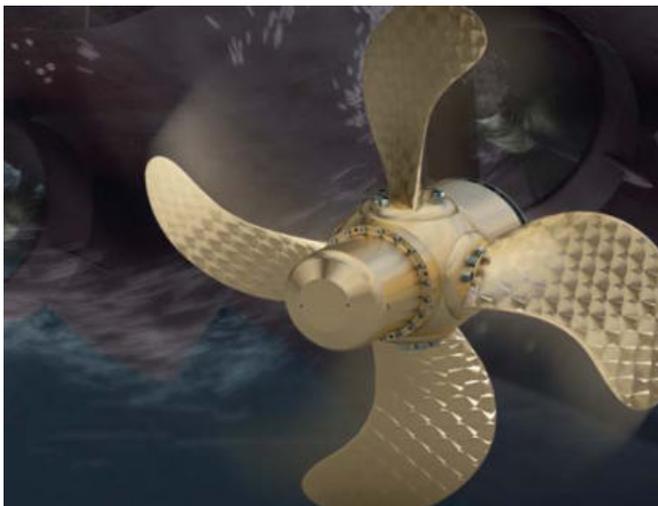
© Woodward L'Orange

- For methanol, the company is developing a family of injection systems for Port Fuel Injection (PFI) and Direct Injection (DI). The injectors are designed for optimal fuel atomisation to allow good mixing and minimise wall wetting.
- Injectors for hydrogen are also in development. Like methanol, they can either inject the hydrogen directly (DI) into the combustion chamber or inte-

grate the injectors close to the intake valves into the intake manifold (PFI). For gas engines that are adapted to run on gaseous P2X fuels such as hydrogen and ammonia, Woodward's SOGAV gas admission valves are being optimised to withstand the properties of these fuels, such as poor lubricity, corrosion behaviour and hydrogen embrittlement.

**Hall A4 | booth 407**

## Zeppelin Power Systems, Hamburg



© Zeppelin

At the SMM Zeppelin Power Systems will be together with Caterpillar on one booth. According to the company a team of experts will provide information on the comprehensive service for MaK and Cat engines throughout the entire product life cycle. Likewise in focus are efficient propulsion systems and digital and EEXI (Energy Efficiency Existing Ship Index) solutions to drive decarbonisation in the maritime industry.

Zeppelin Power Systems will continue to offer a international service for medium-speed MaK and Cat engines, the company says. In cooperation with Caterpillar, individual service contracts and benefits are implemented. These include maintenance, repairs, original MaK and Cat spare parts, the inset of mobile technicians and digital solutions such as real-time analysis of engine operating data. The company has its workshops and a substantial parts inventory. As a certified service centre for the Napier and KBB brands, it also offers a full range of services for turbochargers, including an optional onboard service. At SMM, the Zeppelin Power Systems service team will also advise on retrofit solutions to reduce carbon dioxide emissions through alternative fuels.

In addition, Zeppelin Power Systems will advise on ballast water treatment systems in Hall B7 at booth 306 of Optimarin. As an official partner of Optimarin the company offers shipyards and ship owners a broad portfolio. This ranges from complete planning and implementation to delivering appropriately adapted modules or turnkey solutions of ballast water treatment systems, individually tailored to the needs and spatial capacities. Comprehensive on-site services for ongoing operations on ships worldwide ensure the safe and efficient operation of modern shipping.

**Hall A4 | booth 206**  
**Hall B7 | booth 306**

## ZF, Friedrichshafen

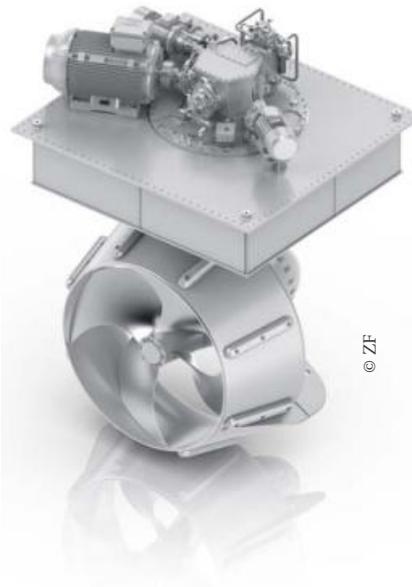
The Friedrichshafen based company ZF Marine is a manufacturer of marine propulsion system technology for all types of vessels, from motor yachts and sailboats to superyachts, high-speed ferries and commercial vessels.

At the SMM in Hamburg ZF will presents the ZF hybrid transmission 5200 A PTI, including an electric motor on site. Besides the show its latest hybrid version of the ZF AT 80 thruster series.

In addition to a broad portfolio of hybrid transmissions, ZF offers transmissions for electric drives. ZF can supply electric and hybrid-capable thrusters, electric motors, power electronics, and control levers as a systems supplier.

Due to the company shipbuilders and fleet operators benefit from the coordinated drive system from a single source.

Hall A3| booth 219



## Zöllner, Kiel

For 75 years, Zöllner has supplied sound signal systems such as ZET-Horns, Makrofons and Zetfons for all ship types and classes, according to Colreg 1972.

Zöllner offers products for new builds or retrofits. At the SMM the company presents the latest product in its horn range: Diamond Triple Makrofon YM125.

With great attention to detail, various specialists, designers and engineers worked together on the horn's appearance and sound. The sound of a horn is at least as important as its appearance. That's why a lot of time and expertise was invested in developing the sound. Tone nuances have been revised several times to create a sound experience that is as balanced as possible. Another big challenge was the sound level, which should match the requirements for yachts from 20-<200 m.

Hall B6 | booth 326

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Guest contribution

Serge Dal Farra – TotalEnergies Lubmarine

## *Critical Steps to Delivering Effective Marine Engine Lubrication*

There are three steps of effective engine lubrication including right engine oil selection, proper monitoring strategy and not forgetting the human element and engineer support. The development of low sulfur fuels through the introduction of IMO2020 has been the most significant change to the way in which the global fleet has been powered since the introduction of the diesel engines in the maritime industry a little over 100 years ago.

Whilst the use of low sulfur fuels has clear benefits on emissions reductions, what has been proven is that challenges around fuel quality – especially early 2020 – have brought real issues for modern 2-stroke marine engines.

For not only are these engines sensitive to corrosion but they also face an increased risk of engine deposit build up – potentially leading to problems including notably ring pack damage. What is without question is that selecting the right cylinder oil in tandem with a properly managed Monitoring Programme in the post IMO 2020 landscape has never been more important than it is today.

The lubricant Talusia Universal is a fully OEM approved cylinder oil with a patented chemistry, proven with over 125,000,000 successful operating hours. It has been approved by WinGD as a »Dual Fuel validated« product, one of the few cylinder oils on the market to have obtained this achievement. The latest entry in the range of cylinder lubricant is Talusia HD 40 for which MAN ES has granted a NOL Category II meaning this product has excellent overall performance with a special focus on cleaning ability and is applicable for all engines types and recommended for MAN B&W two-stroke engines Mark 9 and higher.

Using the right lubricant in the right amount to deliver optimum performance and effective engine cleanliness is just one piece in the puzzle. Rising to the challenge requires an understanding of the multiple operating parameters of the engine, combined with smart engine monitoring and drain oil analysis and interpretation – something that can only be achieved with the support of a lubricant specialist. By carefully and regularly monitoring lubricant and vessel machinery condition, ship owners together with their oil supplier can proactively detect and react to any abnormalities.

All OEM guidelines recommend careful engine monitoring and a sophisticated intelligence-led approach allowing for the most prudent management of two stroke marine engines.

Implementing an effective Drain Oil Analysis Programme is a simple, reliable and a proven way of helping optimize operations through lubricant consumption and component wear analysis.

We are now taking this approach to new and data-focused levels, with the launch of a new range of fully digitalized, interconnected global on-board lubricant sampling and testing services. Operators on board are guided through easy to follow, step-by-step on screen instructions when carrying out drain oil analysis without the need for specialist training, with the highly accurate



© Lubmarine

test results uploaded onto the customers' dedicated portal. Not only do the new services – LubInsight Neo – enable vessel operators and owners to upgrade their onboard testing laboratory facilities, but they also deliver real-time interconnectivity between crews on the vessel, all on shore operations, owners, operators and global teams involved in the running and maintenance of the vessel.

The third layer in achieving optimum engine performance including its cleanliness profile is to enlist the support of highly experienced engineers to assist with lubrication optimization and any lubrication issues vessel operators might be experiencing.

This level of support can include ship engine inspections and trouble-shooting, lubrication survey and technical investigations, shipyard and switchover support, crew and onshore teams trainings from lubrication basics to high level lubrication strategies. ■

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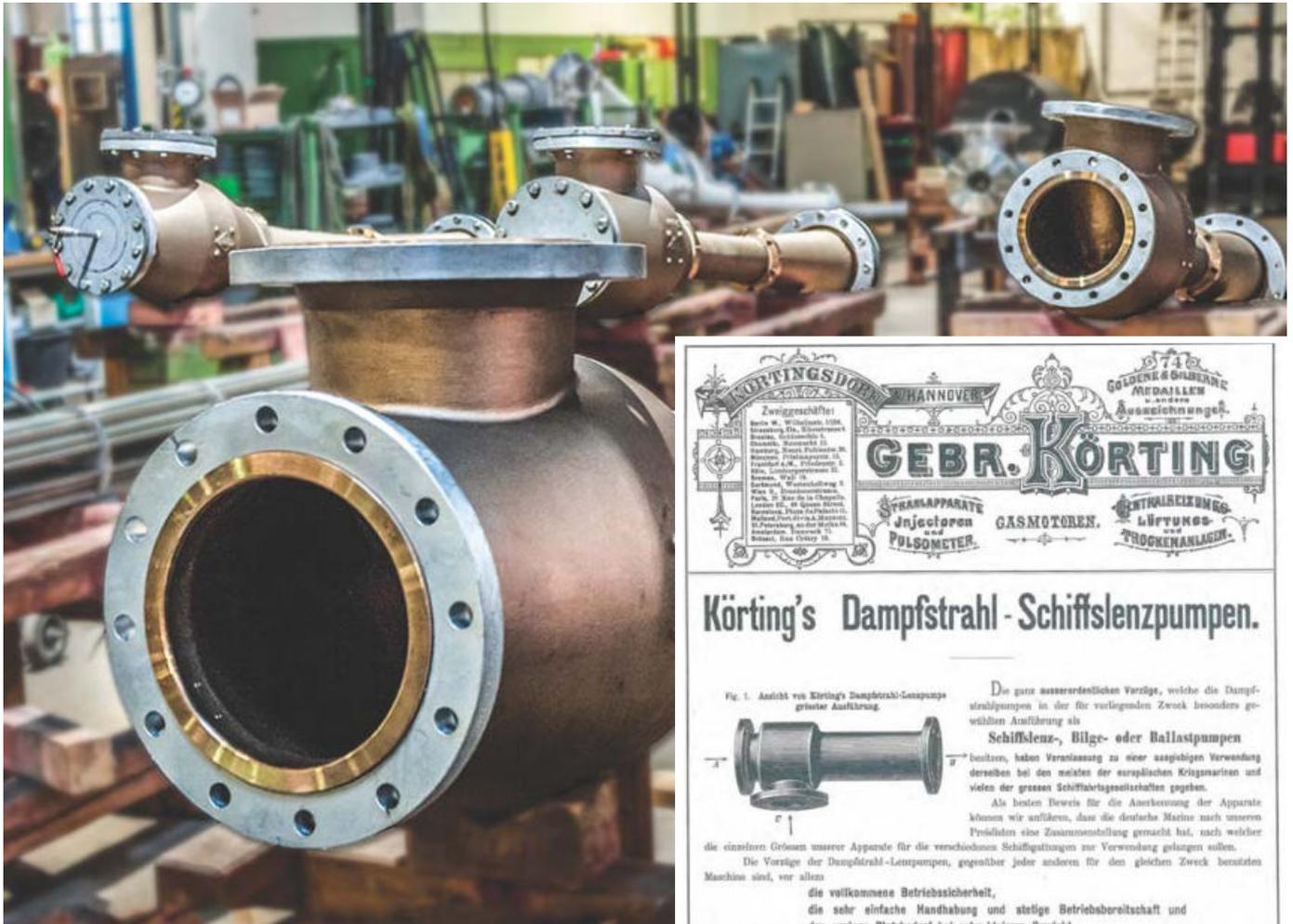
**Maritimes Highlight:** Schiffs- und Bootsparade auf der Weser von Bremen nach Bremerhaven am 30. September 2022



[www.deutscher-schifffahrtstag.de](http://www.deutscher-schifffahrtstag.de)

# Keine Pumpe von der Stange

Mit ihrer Strahlpumpe produziert die Hannoveraner Firma Körting seit mehr als 150 Jahren einen Dauerbrenner. Sie ist überall zu finden, wo ein Vakuum benötigt wird. An Bord wird sie vor allem in Bilge- und Ballastanlagen verbaut. *Von Anna Wroblewski*



Seit Jahrzehnten ein »Evergreen«: Körtings Strahlpumpen

Eigentlich plante das am 1. November 1871 gegründete Unternehmen im letzten Jahr eine große Feier. Coronabedingt musste diese ausfallen und wird nun im September am Firmensstandort Hannover nachgeholt.

Den Grundstein für das heute weltweit agierende Unternehmen legten einst die beiden Brüder Ernst und Berthold Körting. In einem Hinterhof in der Joachimstraße starteten der Ingenieur und der Kaufmann die Produktion von Injektoren; damals noch unter dem Firmennamen Gebrüder Körting. Die Nachfrage nach den patentierten Strahlpumpen wuchs rasch, sodass die Firma zu wachsen begann.

Heute beschäftigt das Unternehmen, das sich in fünfter Generation in Familienbesitz befindet, rund 250 Mitarbeiter. Weltweit sind es etwa 300. Außer am Standort Hannover sind Körting-Tochterunternehmen in Ratingen, Brasilien, Malaysia, China, Indien, Russland und Polen zu finden.

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**Körting's Dampfstrahl-Schiffslenzpumpen.**

Fig. 1. Ansicht von Körting's Dampfstrahl-Lenzpumpe  
größerer Ausführung.

Die ganz ausserordentlichen Vorzüge, welche die Dampfstrahlpumpen in der für vorliegenden Zweck besonders gewählten Ausführung als **Schiffslenz-, Bilge- oder Ballastpumpen** besitzen, haben Veranlassung zu einer sorgfältigen Verwendung derselben bei den meisten der europäischen Kriegsmarinen und vielen der grossen Schiffahrtsgesellschaften gegeben.

Als besten Beweis für die Anerkennung der Apparate können wir anführen, dass die deutsche Marine nach unseren Präsidialen eine Zusammenstellung gemacht hat, nach welcher die einzelnen Größen unserer Apparate für die verschiedenen Schiffstypen zur Verwendung gelangen sollen.

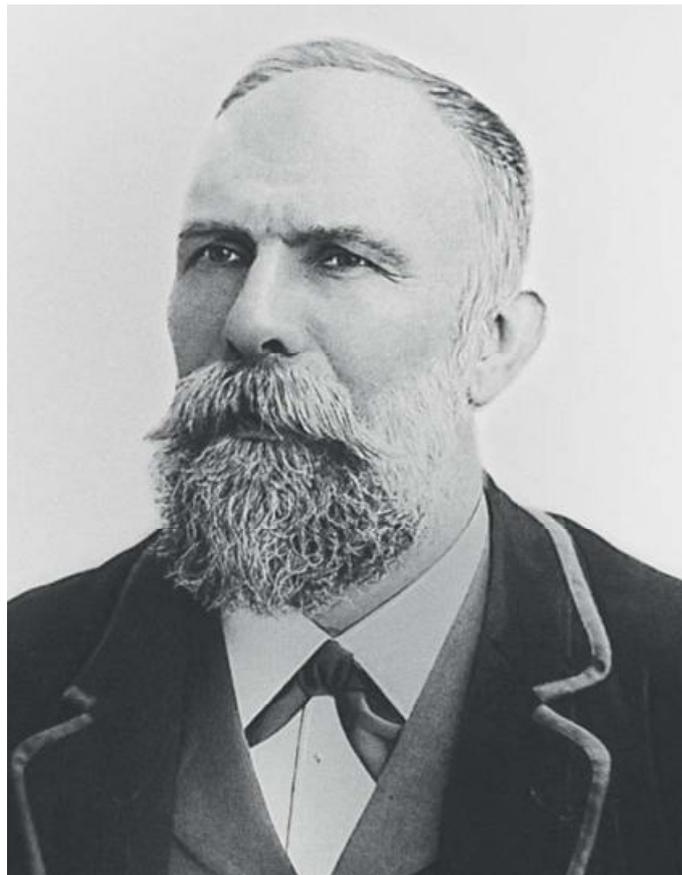
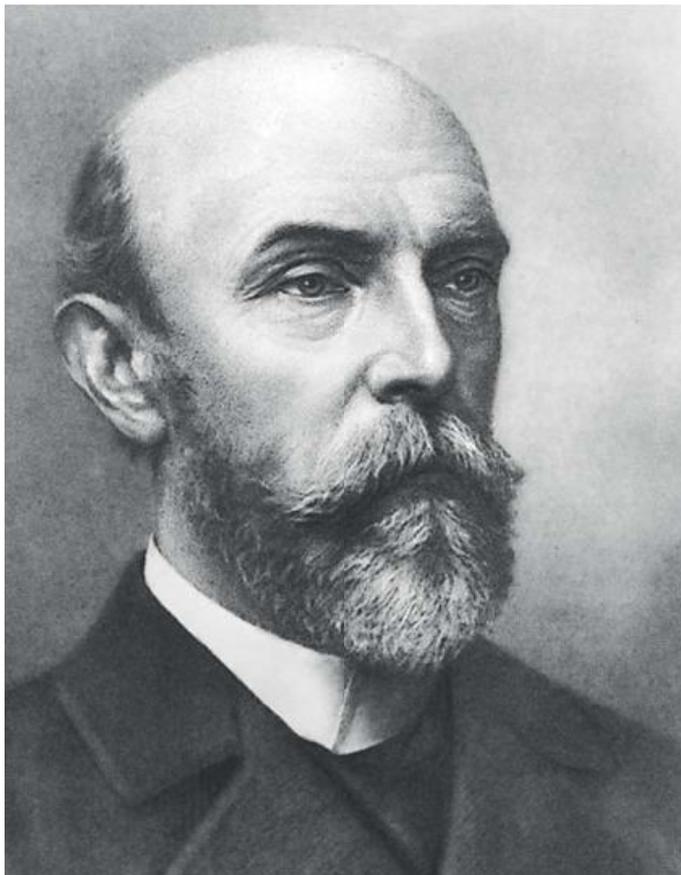
Die Vorzüge der Dampfstrahl-Lenzpumpen, gegenüber jeder anderen für den gleichen Zweck benutzten Maschine sind, vor allem:

- die vollkommene Betriebsicherheit,
- die sehr einfache Handhabung und stetige Betriebsbereitschaft und
- der geringe Platzbedarf bei sehr kleinem Gewicht.

Es kann nur einen Grund dafür geben, dass man eine andere Pumpe der Dampfstrahl-Lenzpumpe vorzieht, nämlich den, dass die vorhandene oder zur Verfügung zu stellende Dampfmenge nicht ausreicht, um die gewünschte Wassermenge zu fördern. In diesem Fall verdient der Pulsometer den Vorzug, mit welchem man die Mache Wassermenge zu fördern in der Lage ist. Unsere Fig. 2 zeigt den Pulsometer neben der Dampfstrahl-Lenzpumpe.

Von höchster Wichtigkeit ist von den erwähnten Vorzügen der erste, nämlich die unbegrenzte Betriebsicherheit und wir erwähnen heftig dieselben, dass selbst bei einer etwa eintretenden Verunreinigung des Saugloches in wenigen Sekunden die Betriebsfähigkeit wieder hergestellt werden kann, ohne dass man zum Apparat selbst zu gelangen braucht. Man braucht zu dem Zweck nur die Ausflussöffnung wenige Augenblicke zu schliessen, und zwingt dadurch den Betriebskolben, rückwärts durch das Saugrohr auszutreten, wodurch dasselbe von etwaigen Verunreinigungen sofort gereinigt ist. Aus diesem Grunde kann man sich auch selbst nach jahrelangen Stilllegen des Apparats auf denselben vollkommen verlassen, wenn er in Fall der Noth wieder einmal in Betrieb gesetzt werden muss.

Damals wie heute ist die Strahlpumpe das Kernprodukt des Unternehmens. »Wir haben mit Strahlpumpen angefangen und fertigen sie noch heute. Seit ihrer Einführung hat sie sich technisch nur unwesentlich verändert. Was sich jedoch geändert hat, sind die Anwendungsbereiche und die Verbesserung der Energieeffizienz der Strahlpumpe. Strahlpumpen sehen einfach aus, aber darin steckt viel Know-how«, erklärt Markus Kampers, Projektingenieur bei Körting, im Gespräch mit der HANSA. »Neben der Schiffbaubranche ist Körting in zahlreichen anderen Industriezweigen tätig, wie zum Beispiel in der Chemie-



© Körting

Berthold Körting (links) und Ernst Körting haben gemeinsam den Grundstein für das noch immer in Hannover sitzende Unternehmen gelegt

industrie, in Raffinerien, der Wasseraufbereitung, der Speiseölverarbeitung, Gaswäsche und vielen mehr«, ergänzt sein Kollege Nicolas Baris, verantwortlich für Marketing und Kommunikation.

Auf Schiffen, egal welchen Typs, sind Körting-Produkte in vielen Anlagen zu finden. Klassisch ist der Einsatz in Ballastwasser- oder Bilgensystemen. Die Injektoren werden auch in anderen Bereichen, zum Beispiel in der Seewasserverdampfung oder Speiseresteentsorgung verbaut. Und das schon seit vielen, vielen Jahren. Wie Baris und Kampers im Gespräch berichten, ist der Schaufelraddampfer »Hjelen« eine der ältesten Referenzen im Schiffbausegment. Das im dänischen Silkeborg registrierte 25,90 m lange und 3,81 m breite Schiff wurde 1861 bei Baumgarten & Burmeister in Kopenhagen gebaut und ist seit 1892 mit Körting-Injektoren im Einsatz.

Eine weitere Referenz ist eines der weltweit ältesten seetüchtigen Passagierschiffe, der Dampfer »Schaarhorn«. Das in Hamburg registrierte Schiff befindet sich seit 1908 im Dienst. Gebaut wurde der 42 m lange und 6,80 m breite Dampfer bei der bis 1929 bestehenden Hamburger Werft Janssen & Schmilsky.

Dass die Firma Körting sich über so viele Jahrzehnte erfolgreich am Markt behauptet, liegt Kampers und Baris zufolge unter anderem an der individuellen Auslegung der Strahlpumpe. »In vielen Kundengesprächen werden spezielle Wünsche und

Anforderungen an uns adressiert«, so Kampers. »Gemeinsam mit den Kunden suchen wir dann nach einer passenden Lösung. Wir bieten keine Produkte von der Stange, sondern maßgeschneiderte Lösungen an«.

Einen weiteren Grund nennt Baris: »Geraden in Zeiten, in denen der Fokus auf Nachhaltigkeit und Umweltschutz liegt, können wir mit unseren Strahlpumpen punkten. Denn dadurch, dass wir individuelle Lösungen anbieten können, die speziell an die Bedarfe der Kunden angepasst sind, können wir erhebliche Einsparungen generieren. In Bereichen, in denen Dampf erzeugt werden

muss, können unsere maßgeschneiderten Lösungen mehrere Tonnen CO<sub>2</sub> einsparen. Und das wird bei Kunden natürlich gern gesehen.« ■

*»Wir haben mit Strahlpumpen angefangen und fertigen sie noch heute«*

Markus Kampers

**Abstract: No off-the-shelf pump**

*With its ejectors, Hannover-based Körting GmbH has been producing a perennial favourite for more than 150 years. It can be found wherever a vacuum is needed. On board, it is mainly installed in bilge and ballast systems. At this year's SMM trade fair, visitors can find out more about Körting's products in hall A2, stand 133.*



© Hamburg Messe und Congress / Nicolas Döring

## Mega-turbines and hydrogen in focus

From 27 to 30 September 2022, at WindEnergy Hamburg everything will revolve around wind power. The development of ever larger offshore turbines and matching installation solutions will play a prominent role as well as floating solutions and Power-to-X

According to the Global Offshore Wind Report 2022 published by the Global Wind Energy Council (GWEC), a total capacity of 21.1 GW was connected to the grid in 2021, a new industry record and three times more than in 2020. This brought the cumulative global offshore capacity to 56 GW by year's end, equivalent to 7% of the total installed wind capacity. »We would like to support this development and highlight it at WindEnergy Hamburg. We are expecting more than 1,350 exhibitors from around the world. 45% of them will showcase products or services that are relevant to offshore wind farms. The spectrum comprises the entire value chain, from project planning and financing to production, equipment transport and installation using specialised ships, through to grid connection, operation and maintenance of offshore wind farms,« says Andreas Arnheim, WindEnergy Hamburg Project Director.

GWEC Market Intelligence expects over 315 GW of new offshore capacity to be added by 2031. The cumulative global will then be 370 GW. 29% of the new volume is expected to be operational by 2026. As for floating project development activities, the GWEC report now believes an installed capacity of 18.9 GW will likely be operating by 2030, with 11 GW in European waters, 5.5 GW in Asia and the remainder in North America.

However, GWEC's ten-year overall forecast might well need revising upward significantly in the near future after Russia's invasion of Ukraine has kickstarted comprehensive energy system reform packages in Europe and beyond. The EU plans to achieve full independence from Russian oil and gas imports, with a major part of the resulting energy gap to be filled by accelerating the build-up of new offshore wind capacity. Wind would then generate a much higher portion of clean electricity, which would be partially fed into the grid and partially used to produce hydrogen via Power-to-X. In an additional process, green hydrogen could then be converted to e-ammonia and e-methanol as ship fuels.

Wind turbines are the core segment of the wind energy market. A number of leading suppliers will be present at WindEnergy Hamburg 2022. They will showcase their latest 13–16 MW+ »flagships« and explain to visitors why they prefer medium-speed geared or direct-driven wind turbines, what options for Power-to-X integration are available, what other features and benefits their solutions provide, and what their respective roadmaps look like. This year also marks the planned installation of several 14–16 MW prototypes with 236–242-metre rotor diameters.

### Powertrain trends and blades

The German engineering consultancy Aerovide has developed 27 full turbine designs since 1983, including the pioneering 5 MW Multibrid design of the 1990's. The exhibitor currently participates in four international 10 MW turbine development projects: two medium-speed geared and two direct-drive wind turbines.

The wind turbine gearbox suppliers ZF Wind Power and Flender (Winergy) are shifting focus, expanding their roles to include (co-)development and manufacture of semi- and fully-integrated geared powertrains. The use of journal bearings in gearboxes has now become standard practice, helping to propel gearbox torque densities to over 200 Nm/kg.

Fraunhofer IWES will commission its new test bench this summer which can accommodate rotor blade lengths of more than 120 m. Vestas is the first customer to take advantage of Fraunhofer's new facility, testing a 115.5-metre blade to be fitted on the V236–15.0 MW. The current blade length record is roughly 118 m for Ming Yang's MySE16–242. Meanwhile well-informed market sources suggest that 17–18 MW wind turbines with 270 m+ rotors are already on the horizon.

### Jack-ups for 20 MW+ turbines

Anticipating these developments, leading international offshore installation contractors are ordering new installation vessels for next-generation 20 MW+ turbines. These ships will be fitted with powerful cranes to handle the resulting foundation, nacelle and rotor sizes. For example, in late 2021 the Dutch offshore contractor Van Oord, an offshore wind market leader, ordered a new jack-up vessel capable of installing turbines of up to 20 MW. As a novelty, the engines of this vessel, expected to enter the market in 2024, will be able to run on e-methanol.

DEME Offshore and Barge Master are introducing a high-tech feeder solution for US offshore wind farms. The concept fully complies with the Jones Act, which prohibits the transport of goods and passengers between US ports by foreign companies and ships. The two exhibitors have developed integrated motion-compensation technology for deployment in a feeder concept for the Vineyard Wind 1

project – the first commercial-scale US offshore wind farm. This integrated high-tech solution will allow wind turbine components to be transported from US ports to DEME’s offshore installation vessels. When a feeder arrives alongside an installation vessel, the Barge Master motion-compensation technology will ensure safe lifting operations, increasing efficiency.

### Floating turbines and safe transfer

The Dutch company Vryhof has been supporting floating wind developers since 2009. Vryhof will showcase two main innovations at WindEnergy Hamburg. Both solutions have been demonstrated at Stiesdal Offshore Technologies’ industrialised full-scale TetraSpar Demonstrator floater which has been operating off the Norwegian coast since December 2021.

Providing safe transfer of personnel from crew transfer vessels to turbines is essential, with hardware offers ranging from Ampelmann’s motion-compensated walking bridges to transfer-

basket solutions. The Danish supplier of davit cranes Seasight Davits will present its innovative »Spider« system in Hamburg. This is an upgrade for their davit cranes mounted at many offshore turbine platforms, combined with a transfer basket enabling the use of the same crane for transferring both personnel and cargo. A remote-control feature allows the crane operator to activate the crane from the ship while approaching the turbine foundation.

### Hydrogen in focus

With the H2Expo & Conference taking place in parallel with WindEnergy Hamburg, the city is making room for another future-oriented technology sector. The focal topic of »green hydrogen« expands and develops wind energy and links it via electrolysis processes to the world of hydrogen production, conversion and use. At the H2EXPO, it is all about the generation, transport, storage and use of green hydrogen. *ED*

The banner features the following elements:

- Top Left:** Logo with the text "BLUE WATER BREB" in white on a blue and red background.
- Top Right:** "LRQA CERTIFIED" logo and a circular badge stating "NO. 1 IN GERMANY".
- Center:** A large aerial photograph of a port area filled with wind turbine components and a large blue ship docked.
- Right Side:** Two smaller photographs: one showing a crane lifting a nacelle, and another showing a truck carrying a nacelle with a worker in the foreground.
- Bottom Left:** Two circular icons: one with wind turbines and another with a ship.
- Bottom Center:** A map of Germany with a red dot indicating a location, and a QR code with the website "www.blauwasserbreb.de" below it.

Gastbeitrag: Björn Wittek  
Geschäftsführer von Rhenus Offshore Logistics

## Mit Kreativität das Klima retten

**L**aut bestehendem Koalitionsvertrag soll Windenergie auf See deutlich ausgebaut werden – bis auf 30 GW im Jahr 2030 und 70 GW im Jahr 2045. Wie lässt sich das realisieren? Welche Möglichkeiten bietet die Ko-Nutzung bisher ungenutzter Flächen in den Windparks?

Ein enormer Ausbau der regenerativen Energien ist nötig, sollen die Klimaziele der Bundesregierung erreicht werden. Den Offshore-Anlagen kommt dabei eine besondere Bedeutung zu. War zunächst noch ein Ausbauziel von 20 GW für 2030 vorgesehen, so soll die installierte Leistung der Windenergieanlagen nach dem abgeänderten Windenergie-auf-See-Gesetz (WindSeeG) nun auf 30 GW angehoben werden. Zum derzeitigen Zeitpunkt sind gerade einmal rund 8 GW installiert.

Das WindSeeG sorgt für Anreize, sich ernsthaft mit der Thematik zu befassen und den Ausbau der Offshore-Anlagen voranzutreiben. Doch die Flächen auf See sind begrenzt und Nutzungskonflikte vorprogrammiert. Gleichzeitig bleiben viele Flächen zwischen den Anlagen ungenutzt – eine Diskrepanz. Einen Ausweg könnte die Mehrfachnutzung der in den Offshore-Windparks vorhandenen Flächen bieten. So ist im WindSeeG auch bereits ein Abschnitt zur »Sonstigen Energiegewinnung« enthalten, womit ein rechtlicher Rahmen für die Ko-Nutzung geschaffen wurde. Warum soll man darunter nur die Erzeugung von Wasserstoff verstehen? Was ist mit anderen Energieerzeugungstechnologien, beispielsweise schwimmenden Photovoltaikanlagen, Strömungsturbinen, Wellenkraftwerken und mehr?

### Züchtung von Aquakulturen und Floating-PV-Anlagen – sinnvoll oder nicht?

Rund um jeden Windpark erstreckt sich eine Sicherheitszone in einem Abstand bis zu 500 m. Diese darf beispielsweise von Fischereischiffen nicht befahren werden. Durch den geplanten Offshore-Ausbau stehen der Fischerei aber immer weniger Flächen zur Verfügung. Gleichzeitig steigt der Nahrungsmittelbedarf. Aquakulturen könnten eine sinnvolle Lösung sein, um diese Konflikte zu entschärfen. So ließe sich die bislang noch ungenutzte Fläche zwischen den Windenergieanlagen effektiv nutzen. Für Logistiker böten diese Ko-Nutzungskonzepte zusätzliches Potenzial, da sowohl am Hafen als auch auf dem Wasser entsprechende Infrastruktur und Dienstleistung benötigt werde, sei es für die Installation derartiger Anlagen oder die Wartung und den Betrieb.

Ebenfalls vielversprechend ist die Ko-Nutzung der Windparkflächen durch schwimmende Photovoltaikanlagen (FPV). Unterschiedliche technische Entwicklungen würden



© Rhenus Offshore Logistics

derzeit in vielen Projekten getestet. Der große Vorteil der PV-Technik besteht darin, dass sie grundsätzlich ohne großen Aufwand in bestehende Windparks integriert werden könne. Darüber hinaus ließen sich positive Skaleneffekte aufgrund sinkender Produktionskosten nutzen. Andere Projekte befassen sich mit der Befestigung von Solarmodulen direkt an den Masten der Windenergieanlagen. Derzeit werden viele innovative Energiekonzepte entwickelt.

Nun gilt es, diese kreativ umzusetzen. Der Ausbau der Offshore-Windenergieanlagen allein ist nicht die Lösung, um die Klimaziele zu erreichen. Wir können uns den Herausforderungen der Zukunft nur stellen, wenn wir Ko-Nutzung zulassen und Energieerzeugungstechnologien sinnvoll miteinander kombinieren. ■

## BSH-Chefin ist Leserin und Autorin



Zur Person:  
Karin Kammann-Klippstein

- seit 2018 Präsidentin des Bundesamts für Seeschifffahrt und Hydrographie (BSH)

- 2014 Leiterin des Referats EU-Politik, EU-Recht – Vertreterin des Abteilungsleiters für EU-Recht im Bundesministerium für Verkehr und Digitales

- Kammann-Klippstein ist promovierte Juristin. Ihr Studium absolvierte sie in Hamburg und Genf

Seit Mitte der 80 Jahre kennt die BSH-Präsidentin Karin Kammann-Klippstein bereits die HANSA. Damals fing sie als Seeverkehrsreferentin im Bundesverkehrsministerium an, die Zeitschrift zu lesen. Und nicht nur das. Sie hat in der HANSA auch eigene Artikel veröffentlicht. So zum Beispiel in der Mai-Ausgabe von 1986, in der ein Artikel über eine UN-Konferenz zum Thema Bedingungen zur Registrierung von Seeschiffen von ihr erschienen ist. Seither begleitet sie das Magazin mit kleinen, berufsbedingten Pausen, in denen sie nicht in der Seeschifffahrt, sondern unter anderem in der Luftfahrt tätig war.

### Flaggenartikel interessant

Wenn die BSH-Präsidentin Zeit hat, liest sie die meisten Artikel, erzählt sie der HANSA im Gespräch. Dabei fängt sie oft an, die Ausgabe von hinten zu lesen. Es sei für sie beruflich zwar wenig relevant, aber die letzte Seite behandle häufig historisch interessante Themen. So zuletzt die Geschichte der Reederei Hapag-Lloyd, die anlässlich des 175-jährigen Firmenjubiläums veröffentlicht wurde. Gern überfliegt sie auch Beiträge über Branchenevents, bei denen »man den einen oder anderen entdeckt, den man kennt«. Beruflich sei sie hingegen insbesondere an Artikel rund um Schifffahrt und Schiffstechnik interessiert. Themen wie die Flaggen-Performance lese sie zum Beispiel gern. Da das BSH stark bemüht sei, die deutsche

Flagge zu fördern, seien Artikel, in der die Flaggenstaaten, ihre Standards und Qualität verglichen werden, für sie wichtig.

Technische Themen seien für sie vor allem mit Blick auf den Umweltschutz interessant. Dazu gehören Artikel über alternative Brennstoffe, wie die über die Reederei Maersk, die Schiffe mit Methanol-Antrieben bestellt hat. Oder auch Beiträge über Ammoniak und die Risiken, die dieser Kraftstoff mit sich bringen kann. Spannend findet sie auch Artikel über Windantriebe, die Schiffe emissionsfrei als Ergänzung zu anderen Treibstoffen mit Energie versorgen. Das alles sei auch deshalb relevant, weil das BSH selbst fünf Schiffe bereedert und aktuell zwei Neubauten in Auftrag geben wolle, so Kammann-Klippstein.

### Mehr Artikel zu Beruf und Familie

Gut findet die BSH-Präsidentin die neue HANSA-Rubrik, in der in Kooperation mit WISTA Frauen aus der Schifffahrt porträtiert werden. Dazu würde sie sich mehr Artikel wünschen. Darüber hinaus würde sie gern Berichte darüber, wie nautisches Personal – sowohl Frauen als auch Männer – sich beruflich im maritimen Bereich an Land im Einklang mit der Familie verwirklichen können – in der HANSA lesen. Wünschen würde sie sich außerdem mehr Beiträge über die »UN Ozeandekade«, mit der sich die Staatengemeinschaft den Schutz und die nachhaltige Nutzung der Meere auf die Fahne geschrieben hat.

Themen rund um die maritime Umwelt und deren Schutz werden nach Einschätzung der BSH-Präsidentin eine zunehmend große Rolle für die Branche spielen, ebenso Digitalisierung und Automation. Auch das BSH ist an Automatisierungsprojekten beteiligt, berichtet Karin Kammann-Klippstein. Hierzu habe es sein eigenes Systemlabor und habe sich z.B. an dem »Galileonautic 2«-Projekt beteiligt. Bei diesem »lernte« das BSH-Forschungsschiff »Deneb« vollautomatisch im Hafen einzuparken – vor fünf Jahren hätte sie sich das noch nicht vorstellen können, so die BSH-Präsidentin.

### BEWERTUNG (1 BIS 5 STERNE)

#### AKTUALITÄT

★★★★★

#### THEMENSPEKTRUM

★★★★★

#### KOMPETENZ

★★★★★

#### RELEVANZ

★★★★★

#### LAYOUT / GESTALTUNG

★★★★★

#### VERSTÄNDLICHKEIT

★★★★★

#### GESAMTEINDRUCK

★★★★★

# Monaco Yacht Show seducing new clients

Following on from a successful MYS 2021 that saw the introduction of »Discover«, »Advi-  
se« and »Connect« experiences, MYS 2022 introduces »Adventure«, the »Sustainability  
Hub« and new-format »Yacht Design & Innovation Hub«. *By Nick Jeffery*



The event will feature two »Adventure Zones«

The Adventure Area was announced shortly after MYS claimed it would be combining education and seduction into a »Seduction« program to attract the younger generation. The »Sapphire« experience continues too with concierge services lining up meetings in advance for those new to the world of superyachts. Monaco Yacht Summit also returns the day before the show (Tuesday 27 September) where experienced superyacht industry professionals share information from the stage, while simultaneously hoping to catch a new client from the rookie audience. The Yacht Design and Innovation Hub is growing and potential

buyers new to the market would benefit from calling around a few superyacht designers before MYS to get educated on what to see and line up boat visits, before the brokers seduce them.

Recent years have witnessed much discussion about the new younger generation looking more at experiences than ownership. Quite who will end up owning the explorer yachts to cater for this demand remains to be seen but pride of ownership is unlikely to be discarded entirely and there will always be a market, albeit less ostentatious and more »rugged-4WD«-looking. Monaco Yacht Show states of the Adventure Area: »This extended exhibition

Monaco Yacht Show  
Wed, 28 September to  
Sat, 1 October 2022



[www.monacoyachtshow.com](http://www.monacoyachtshow.com)

for all adventure and leisure activities reflects the MYS' continued ambition to bring visitors the finest yachting experience. Today, charter clients want to drive all-terrain vehicles to the North Pole, go on underwater excursions, take tender rides off the coast of secluded islands, enjoy

tailor-made tours of historical and cultural sites in coastal destinations, discover animal species – while respecting their ecosystems – and even take part in scientific field trips.« Perhaps charterers could pay a premium in the future to experience »Superyacht Ownership« where the Captain welcomes them aboard and provides a list of issues and all the essential jobs to finance for the winter refit, discusses crew pay rises and says the media has been asking how the owner made his money... Y.CO's Charlie Birkett points out: »Last year's move to become more client-centric was a definite step in the right direction, especially with the addition of the first VIP day, and we were happy that the yachts we exhibited were booked up with viewings for the duration of the show. The market has continued to pick up pace since last year; demand remains high, and we've heard from a lot of our clients who are planning to attend this year. All this, and the fact that supply of brokerage yachts has been slower in recent months, means that this year's show will be a great opportunity for sellers hoping to make the most of the market in this buoyant state.« Fraser Yachts' CEO, Raphael Sauleau, adds: »As the industry leader in environmental initiatives via our FUTURE (Fraser Unites To Universally Respect the Environment) programme, we are pleased to see the introduction of a Sustainability Hub at this year's show, to once more help place this fundamental issue on the radar of more owners and charterers. For those buying and building yachts today, the tech and engineering that their yacht has on board is more of a consideration than ever before, both for the time they spend on board and for when they come to sell.«

As ever, MYS will have 100+ yachts quayside with as many again anchored



MYS is aiming to seduce younger clients by expanding the show by adding yachting adventures as well as shining a spotlight on sustainability

© Hill Robinson

off. As HANSA went to press, the exhibitor list was not yet online at [monacoyachtshow.com](http://monacoyachtshow.com) however Lürssen announced that they are exhibiting »Aho«, a 115-metre motor yacht, penned by Nuvolari-Lenard and the largest yacht at the show, delivered at the end of 2021.

Some 450 exhibitors, described by MYS as »hand-picked« companies, representing excellence and innovation in yachting, include designers and naval architects, yacht suppliers and service providers as well as builders of tenders and »toys«. In recent years, the show has slowly extended its exhibition offering to ultra-high-end markets by showcasing luxury products, cars and motorcycles and also helicopters as well as private jet manufacturers.

Opulent Designs International – a new producer (with Holland Marine Lifts) of carbon-fibre elevators – will be one of many prospective exhibitors, visiting builders at MYS and joining the ranks of

former-exhibitors who prefer not to man a stand. A handful of marina owners and operators are set to exhibit, with the competition – to make their SUPERPORTS the choice for new yacht owners – as fierce as ever.

Summing up, Fraser's Raphael Sauleau: »If 2020 showed the industry anything, it was that yacht shows are not essential to buying and selling yachts. However, when promoted and delivered with precision, they do offer an incredible opportunity for buyers to see some excellent yachts all in one place, as well as the opportunity to meet and greet their brokers, captains and in many cases the owners themselves.«

General Manager of the MYS Gaëlle Tallarida told HANSA: »The Monaco Yacht Show made its grand return to the international event scene in 2021, sporting a three-year development programme with a clearly-stated goal: to promote superyachting among a new generation of clients.« ■



»Artefact from German shipyard Nobiskrug

© Nobiskrug

»Perseverance« won Best Sailing Yacht under 40 m in 2021 as well as Best Sailing Yacht of the Year 2022



© Dykstra

## War, Younger Clients and Sustainability

»Don't mention the war!« seems to be the decision made amongst superyacht brokers with none of those polled by HANSA – on how Russia's invasion of Ukraine has affected them – wishing to comment. *By Nick Jeffery*

A cynic might speculate that cut-throat yacht brokers are secretly waiting to grab some of the »elite« Russian clients of one Russian-owned, sanctioned »Kremlin-aligned\* yacht brokerage« (\*sanction report's words, not the author's!), headquartered in Monaco, whose spokesperson stated, victim-like: »...it appears that due to our success, we are unfortunately being targeted by those who would like to bring us down.« Lawyers for Russian oligarchs (also apparently victims) were reported as claiming it was »against UN Conventions« impounding their superyachts and »illegal and contrary to all international legal norms«, on one international boat industry web site. Nobody replied to a comment that suggested the (Russian) correspondent might ask the lawyers whether they felt the invasion of Ukraine was against UN Conventions or whether Russian superyacht owners and their lawyers believed the bombing and killing of civilians of Ukraine is illegal and contrary to all international legal norms. Foreign Policy reported in July that President Putin stated that he is fighting a war of »Imperialist Conquest«.

Designer Martin Francis – who is presently mainly working on cruise ship designs and land-based architecture projects and is never one to hold back on criticism – speaks out boldly: »business-wise, I've not been affected at all but, personally, I feel profound shock and outrage at the lack of reaction, supporting Ukraine, by the yachting community«.



© Nick Jeffery

Fraser CEO, Raphael Sauleau: »Relentless attempted cyber attacks«

»Putin's war« will, of course, continue to cause turmoil worldwide, far beyond Ukraine's borders. The superyacht industry, despite »robust« sales and charter markets, is taking a hit not only from negative media coverage in the popular press about some of the more ostentatious superyachts and associated shenanigans, but also due to basic raw materials supply chains issues and increasing costs for shipyards. Builders, refit yards and managers were less reticent to speak out than brokers.

Vitters' Bas Peute points out: »Russia's invasion has the biggest impact on our cost prices. Energy and raw material prices are going through the roof. This has impact on our financial results for the projects we have on hand and on our cost calculation

for potential new-build projects. More and more suppliers use a very short validity time on quotations for parts. Some are so short that the quote has already expired before we are able to finish our cost calculation! Next to the prices, availability is another area of concern. With the long lead-times of our projects we should be able to plan our purchases well in advance but we still need to rely on the performance of our suppliers.« Arrow Yachts' Yerin Hobson confirms this: »We are lucky enough not to be effected directly with the Russian Invasion yet. However, with 400+ linear metres that we currently have under build management, we are seeing builders start to experience supply issues, along with drastic price increases for some materials and components«. Nikos Dafnias, of Alpha Marine (who recently designed a 47-metre diesel-electric superyacht, »The First«, newly building in Greece), states: »The increase of energy cost (gas, diesel and electric power) had begun before the invasion of Russia into Ukraine. The situation grew worse after this assault. I cannot appraise the calibre of Europe's counter-measures on the Russian economy, but I can say without a doubt that these measures had a huge effect on Europe: disproportionate increases in energy costs, in all materials and equipment, shortage of materials and increase of delivery times are the consequences that Europe has to face. The uncertainty for the future sets its own imprint on the psychology of all parties involved,



© Dykstra

»Lifetime Achievement Award« for naval architect Gerard Dykstra

including yacht owners. Certain market opportunist factions rushed to feast on the situation and attain excessive profits; this practice intensified the atmosphere of instability already prevailing in the market. The punitive measures imposed on these so-called 'Russian oligarchs' – many of whom are actual or prospective superyacht owners – also caused upheaval in the European yacht market and definitely had an adverse effect on it.« Dean Smith, Founder and Director of Hampshire Marine, points out: »Since Russia's invasion, we have had to stop supplying services to any yachts connected with sanctioned assets which of course will affect us as it has other service providers. The extension of the EU sanctions to include supply of marine equipment to Russian connected vessels has further affected service and supply companies in our sector. Fortunately the industry remains buoyant with plenty of activity in the fleet so it is simply a case of shifting one's focus of effort and priority for the near future». Giulio Maresca, General Manager of Palumbo Refit, Marseille, notes: »The sanctions against Russia have not affected us directly, as we have seen in other yards. We have nevertheless felt the effects of the conflicts in terms of the supply of raw materials as well as finished products regarding prices and delay.« Meanwhile Maresca's colleague, Francesco Carbone, General Manager and Sales Director of Palumbo Superyachts, adds: »Fortunately, we didn't have any financial impact, as our exposure to Russian buyers is minimal and funds have never been delayed. We have not seen a decrease in leads and negotiations in recent months as Eastern European clients have been offset by a growing number of US and Western European buyers.« Russians in the superyacht market

are quickly being displaced. The Black Sea, which might have become an adventure-superyacht cruising and exploring arena, with Ukraine's coast line sporting some stunning sites and cultural attractions, will be off limits to superyachts for years.

### Adventure and Sustainability:

William Molloy, Head of Charter of Monaco's Moravia Yachting, states: »The profile of charter clients has changed recently – we are seeing an increase in younger clients, and charterers who are more conscious of the environment and the impact of their yachting activity. This demographic of charterer also seem to have greater expectations, which we think stems from media transparency and social media – they see the water toys, the lifestyle, and the luxury experiences that superyacht charter can offer, and they want it.« Palumbo's Francesco Carbone notes: »The pandemic had a significant impact on most of industries across the globe, and yachting was no exception. As a sense of hope arose in 2021 and a 'new normal' manifests, the future is (again) perceived as unpredictable. As we can see from the new range of yachting clients: family yachting holidays have become the norm; go-anywhere yachts with



© Nick Jeffery

Jon Rysst, DNV Senior Vice President, Maritime, in Monaco

long range are rising in popularity; with more people working at sea due to the pandemic, and the increasing need for technology as time goes on, IT support, cybersecurity, and connectivity on superyachts are continuously advancing. Yachts are no longer seen as a vessel for simply getting from one place to the next; instead, the world's finest yachts are now viewed as destinations. Today's superyachts are the

pinnacle of luxury travel, boasting amenities akin to the world's best resorts, coupled with state-of-the-art technology and design features. Palumbo's Giulio Maresca adds: »In the past years we have seen a real concern regarding the environment, yacht owners want to increase their sustainability credentials and limit their carbon footprint. During refits this is realised by the use of lighter materials that allow a reduction of fuel consumption and the introduction of technology aimed at limiting all kinds of emissions. We have also witnessed the emergence of Yacht Explorers that are increasingly in demand in the yachting market.« Bas Peute of Vitters also feels change is imminent: »With increasing fuel prices, the global sustainability and enjoyment-friendly discussions, we see a trend of growing interest in sailing superyachts again. Zooming more into the sailing yacht market, we see upcoming requests for electrical solutions for propulsion, manoeuvring and sail handling. It will be only a matter of time before we see pure green sailing super yachts with no combustion engines on the water.« Arrow Yachts' Yerin Hobson notes: »We are lucky to have a good global client base from Australia/Asia to the UAE to Europe and the Americas. Our new clients are younger every year and more adventurous. This is great for our teams when building and operating yachts as every project or cruise is very different, from submarines, to helicopters, to cars and SUV's on board, as well as cruising Kodiak to Raj Ampat, more out of the way places than previously seen. The explorer nature of the younger wealth is definitely a new trait we welcome as a company.«

Y.CO Co-Founder and CEO Charlie Birkett gives a polished summary: »It's something that's been said over and over again, but it's true that we're seeing a new generation of superyacht owners, who aren't just younger, but are more principled as well. Clients are no longer interested in commissioning floating palaces and decking them out as symbols of wealth. Instead, they view their yachts as platforms for adventure, and are stocking them with everything from surfboards to submarines, helicopters to all-terrain vehicles, dive equipment and ROVs; and the list goes on. I think it's definitely true that the romance of yachting is coming back, not just in the design and how they look but in the way they're being used too. We work with some next-generation owners who are really pushing the boundaries of yacht design



Mark Kruidenier, DNV Business Development Manager, wraps up

and it is exciting to see how the ideas we have worked on with them through our new-build department are evolving into trends. On the one hand, there is increasing popularity for the long sleek hulls that are reminiscent of the 1930s, with perhaps less volume but with better integration of the outside living spaces and more intimacy in the living areas. We're also seeing clients who are choosing multi-hull platforms that have bigger living spaces but with a smaller overall length and crewing requirements, as well as better manoeuvrability and shallower drafts. All of this allows for exploration and discovery; the ability to visit those hard-to-reach bays and secluded inlets, fitting with how many of our clients are choosing to travel now. And of course, our clients' desire for more sustainable, responsible yachting solutions is having an effect on the design trends, with features like solar panels that double as awning structures becoming more and more common.

Alpha Marine's Nikos Dafnias told HANSA: »There is a remarkably positive attitude from the owners towards implementing modern diesel electric & hybrid propulsion technologies which lead to low or even zero emissions on yachts. I was recently informed by charter companies of flotilla sailing yachts that a high percentage – up to 25% – of small boat charterers are willing to pay a higher charter rate for »greener« boats, which is an unexpectedly encouraging development. The same trend appears in major refits and large yachts. At the same time several universities, research centres, designers and manufacturers carry out important research which evolves fast and provides tangible and applicable results which are implemented on yachts.«

One of the highlights of the past year was

a prestigious »Lifetime Achievement Award« going to Gerard Dykstra, after half a century of creating innovative sailing yacht designs and rigs and whose work will doubtless influence, and be continued by, the younger generation of naval architects. »Perseverance« won Best Sailing Yacht under 40 m as well as Best Sailing Yacht of the Year 2022, following on from the likes of: »Athena«, »Hetairos«, the DynaRig, »Maltese Falcon«, »Sailing Yacht A«, »Black Pearl«, »Aquarius« and »Sea Eagle 2«, as well as reviving the J-Class. Classification society DNV's well-attended super-yacht seminar in Monaco (»Turn Uncertainty into Confidence«), on 28 June, saw Towards Zero Carbon and the Future of Fuel form a substantial part of the day's agenda, the other topic discussed in depth – also drawing on DNV's vast expertise in shipping – being Cyber Security. Guest speaker, Fraser Yachts' CEO, Raphael Sauleau, was refreshingly open, sharing stories to the 60+ delegates about relentless attempted cyber attacks at Fraser. DNV experts were keen to point out that they offer consultancy even to non-DNV-classed superyachts.

### Refit and Sales Market

Pino di Mora, General Manager of Hill Robinson Italy, gives an expert overview of the strength of the refit market: »The superyacht fleet has more than doubled in the last ten years, with nearly 5,000 yachts of over 24 metres in length currently in service and it keeps growing steadily. As a consequence, the refit market grows accordingly, with Italy maintaining its top slot as the busiest destination country. We can't say the refit market is booming but it is certainly going through a very positive trend. With more and more superyachts getting delivered every year and, considering the ageing of the current fleet, we predict a strong refit market for years to come. In fact, we are seeing all major refit shipyards undertaking considerable investments in expanding their facilities.«

Fraser's Raphael Sauleau shares a sales and charter snapshot: »With last year's record number of new buyers and charterers discovering the experience of luxury yachting for the very first time (around 40% in the case of Fraser), 2022 has so far seen that level of demand continue. Sales across the industry are currently up 102% on the 13-year average, and Fraser is proud to have sold both the largest motor yacht (a 100 m+ vessel) and the largest sailing yacht

(a 56 m vessel) sold this year. Fraser is currently seeing our strongest year since records began for the total value of yachts sold. Chartering has also seen a significant rise this year, with bookings up over 120% on 2021 on the Fraser charter fleet, and bookings by our charter brokers up 59% on 2021.«

Y.CO's Charlie Birkett sums up: »The yacht sales market has been more buoyant than ever over the last 12 months with a strong appetite from buyers, especially from the US. With demand outstripping supply and few yachts entering the brokerage market especially in the bigger size ranges, and current new build delivery dates at 2025 – 2027, it is clear that we remain in a seller's market in 2022. The Palm



Martin Richter, Ship Type Expert Yachts, at DNV superyacht seminar

Beach Yacht Show earlier this year demonstrated that there is strong appetite among buyers in the US markets, with the exhibiting yachts each receiving considerable interest. However, the biggest trend of 2022 so far has been the large number of off-market sales, many of which Y.CO has been involved in. With demand as high as it is, and the strengthening of brokerage prices, many sellers have chosen to »test« the market by instructing a well-connected broker to find a buyer discreetly and quickly.«

Any Russian owners wanting to dispose of their superyachts quickly know what to do. Rather than bolstering your insurance and heading for Sochi marina – Burr Taylor of Howden Sturge insurance confided that any owner taking their superyacht to the Black Sea would be mad (even »M.V. Graceful« is in the Baltic Sea) – instruct a well-connected broker (checking if it is a »Kremlin-aligned« one if that might rock your boat). ■

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# Das Ende aller Zukunftssorgen?

Zum 1. Dezember startet bundesweit die neue Lotsenausbildung, deren Konzeption von allen Seiten der maritimen Wirtschaft große Vorschusslorbeeren erhalten hat. Nur bei den Lotsen selbst scheiden sich bis heute die Geister

In den letzten Monaten sind die Bewerberzahlen für ausgeschriebene Stellen im Lotswesen noch einmal so drastisch zurückgegangen, dass selbst die größten Kritiker jeglicher Änderung der bisherigen Zugangsvoraussetzungen erkennen müssen: Ohne drastische Maßnahmen wird auf Dauer die Qualität und Quantität dieses wichtigen Elementes im deutschen Verkehrssicherungskonzept nicht zu halten sein.

Die jetzt eingeleiteten Maßnahmen seien hier nur noch einmal extrem kurz dargestellt. Zugang und Ausbildung zum Lotswesen basieren nunmehr auf einem dreistufigen Modell. Erfüllt ein Bewerber die bisherigen Zugangsvoraussetzungen, so steigt er in der Stufe LA3 in die Ausbildung ein. Die bisher achtmonatige Ausbildung wird auf zwölf Monate erweitert. Bewerber, die keine 24 Monate Erfahrungsfahrzeit in »verantwortungsvoller Funktion« nachweisen können, steigen in der Stufe LA2 ein, bei der die Ausbildungszeit auf 18 Monate verlängert wird.

Vollkommen neu ist der Ansatz der Stufe LA1, bei der sich bereits Bewerber mit einem abgeschlossenen Nautik Studium mit Bachelor-Abschluss für einen weiterführenden zweijährigen Master-Studiengang »Lotswesen« entscheiden können, in den die weiteren Stufen LA2 und LA3 inkludiert werden. Es handelt sich damit also um Neuzugänge, die außer der erforderlichen Praxissemester über keinerlei unmittelbare Berufserfahrung verfügen!

## Falsche Finanzierung

Es dürfte klar sein, dass dieses Konzept insbesondere in der Endstufe langwierig, aufwändig und damit teuer ist. Und hier beginnt der erste drastische Fehler, denn bereits bevor die Lotsen an der Basis das Konzept überhaupt abstimmen konnten, reiste deren Aufsichtsbehörde GDWS durch die Lande und verkündete der maritimen Wirtschaft ein »sich selbst finanzierendes System« ohne jegliche Zusatzbelastung der Anlaufkosten. Das »Ei

des Columbus« war gefunden, indem die Lotsen durch einen Einbehalt der Ihnen nach der Verteilungsordnung zustehenden Lotsgeldanteile nach Abschluss der neuen Ausbildung diese quasi rückfinanzieren müssen. Wie konnte die Bundeslotsenkammer (BLK) ohne Druck solche Zugeständnisse machen?

Die Nachwuchssicherung für das Lotswesen ist allein eine staatliche Aufgabe und nicht die der Lotsen selbst. War es nicht immer eine vordringliche Begründung der erheblichen finanziellen Zugeständnisse an die deutschen Reeder im »Maritimen Bündnis für Beschäftigung und Ausbildung in der Seeschifffahrt«, dass der gesamte Sekundärbereich auf die in der Seeschifffahrt ausgebildeten Nachwuchskräfte angewiesen ist?

## Ein Non-Profit-Konstrukt

Beim Lotswesen in Deutschland handelt es sich um ein zwingend konsequentes »Non-Profit-Konstrukt«. Jegliche Mehrverdienste, zum Beispiel durch gestiegene Schiffsgrößen in einem Revier, werden bei der nächsten Tarif Tabellenanpassung an die maritime Wirtschaft zurückgegeben. Es steht außer Frage, dass ein Lotse in den ersten mindestens vier Jahren nach Abschluss der Ausbildung aufgrund der Schiffsgrößenbeschränkung nur kleinere und damit vermeintlich weniger Schiffe lotsen darf als der sogenannte »Voll-Lotse«. Aber die Arbeit bleibt deshalb ja nicht liegen, sondern muss von den älteren Lotsen dementsprechend zusätzlich geleistet werden.

Wie kann dieses Geld jetzt den Gesamt-Betriebseinnahmen einer Bruderschaft entzogen und damit alle Lotsen belastet werden? Die Lotsen sind doch nicht die Verursacher der Nachwuchsmisere! Nein, die Kosten dieser neuen Ausbildung hätten ohne »Wenn und Aber« auf die Anlaufgebühren umgelegt werden müssen.

Bereits heute stellt die Aspirantenzeit für einen erfahrenen Kapitän eine finanzielle Herausforderung dar. Die Ali-

mentation entspricht maximal 20% seiner Einkünfte gemäß Kapitäns-HTV. Und nun soll dieser Topkandidat abgeworfen werden, indem ihm die karge Ausbildungszeit verlängert und dann noch die Anfangseinnahmen heruntergeschraubt wird? Bei den heutigen außertariflichen Bedingungen, die ein Reeder seinen Kapitänen gewährt, dürfte ein Wechsel zu den Lotsen deutlich erschwert werden.

Unbestritten besteht auch bei den heute schon alle Voraussetzungen erfüllenden Bewerbern eine große Differenz in den für den Lotsenberuf wichtigsten Kompetenzbereichen. Die immer noch besten Kandidaten hätten die Lotsen anhand der üblichen biographischen Eignungsdiagnostik leicht identifizieren können – und dafür hatte der Gesetzgeber sogar eine Ausnahmeregelung verankert. Demnach hätte die Ausbildung auf Antrag der Bruderschaft auf die bisher üblichen acht Monate verkürzt werden können. Nun wurden aber die neuen Ausbildungsmodule so zentralisiert und durchgeplant, dass diese Regelung gar nicht greifen kann. Ob es rechtens ist, wenn eine de jure vorgesehene Möglichkeit de facto ausgehebelt wird, lassen wir einmal dahingestellt.

## Suche nach Work-Life-Balance

Womit sollen also die zukünftigen Bewerber nach LA1 gelockt werden? Die extreme Attraktivität für einen Kapitän beim Wechsel in den Lotsenberuf war immer die einzigartige Möglichkeit, nicht mehr monatelang von der Familie getrennt zu sein und trotzdem seinem ursprünglichen Tätigkeitsbereich nahezu bleiben. Zwangsläufig wurde auch ein Wechsel des Wohnortes billiger in Kauf genommen. Daher gab es schon immer deutliche Probleme einzelner Bruderschaften in einem weniger attraktiven Lebensumfeld.

Die nach LA1 zu rekrutierenden Bewerber werden eine solche Zeit gar nicht erlebt haben. Sie werden den Beruf als Lotse nicht als die familiär bessere Alter-

native zum Kapitänsberuf sehen. Sie fällen die Entscheidung vielmehr beim Beginn des Studiums und werden sich deshalb für einen Beruf entscheiden, der Ihnen die Erfüllung ihrer persönlichen Zukunftsvorstellungen und noch dazu möglichst am »Wunschort« bietet.

Haben sich die Entscheidungsträger eigentlich mit den Bedürfnissen der umworbenen »Generation Z« (nach 1995 geboren) beschäftigt? Das Lotswesen mit Master-Abschluss konkurriert dann nicht mehr mit dem recht einzigartigen Beruf des Seemannes und dessen positiven wie negativen Begleitumständen, sondern mit den Angeboten aus der Industrie und den dort gebotenen Rahmenbedingungen. Können wir Lotsen bei unserem »Job-Angebot« mit Firmen wie »Bosch« und »Daimler« konkurrieren? Allein darum wird es letztendlich gehen, und nur davon hängt das Gelingen des gesamten dargestellten Nachwuchskonzeptes ab.

### Attraktivitätsfaktor Einkommen?

Es ist unbestritten, dass es den Lotsen in den vergangenen Jahren gelungen ist, den monetären Teil der rein theoretischen »Soll-Betriebseinnahme« an die allgemeine Entwicklung anzupassen und somit eine dem Kapitän vergleichbare Position zu halten. Es gibt jedoch einen drastischen Unterschied im Vergleich zu ähnlichen Stellungen in der maritimen Wirtschaft: Es handelt sich eben um eine »Soll-Betriebseinnahme« und keinesfalls um ein irgendwie gesichertes Einkommen. Diese Frage ist bei der jüngeren Generation der Lotsen zuletzt in einigen Regionen massiv in den Vordergrund gerückt. Wenn zum Beispiel fortgesetzt die

über Jahre von der WSV vernachlässigte Infrastruktur am Nord-Ostsee-Kanal kollabiert, hat dies von einem auf den anderen Tag drastische Auswirkungen auf die Einkünfte der komplett freiberuflich tätigen Lotsen und damit auch auf die Zugkraft solcher Reviere auf potenzielle Bewerber.

### Zu wenig Personal

Und damit beginnt die eigentliche Crux: Um sich selbst einen Puffer für plötzliche Einbrüche zu verschaffen, arbeiten nahezu alle Lotsenbrüderschaften mit einem absichtlichen Personal-Unterbestand. Gleichzeitig führt dies bei einem starken Anstieg des Verkehrs zu drastischen Spitzenbelastungen, wobei die Lotsen selbst dann der »ständigen Verfügbarkeit« ohne Rücksicht auf irgendwelche Mindest-Ruhezeitregelungen verpflichtet bleiben.

Nach Analysen von Experten (www.haufe.de) geben unter der Rubrik »Work-Life-Balance« 83 % der Befragten der »Generation Z« an, dass ihnen Autonomie bei der Zeiteinteilung und ein individueller Arbeitsrhythmus am wichtigsten sind. Willkommen in der Arbeitswelt an Bord!

Ein Lotse befindet sich während seiner Einsatzzeit 24/7 in Dauerbereitschaft, wobei die Frequenz der Inanspruchnahme dem in der Schifffahrt üblichen »chaotischen Zulaufprinzip« folgt. Private Termine länger als zwei Tage im Voraus fest zu vereinbaren, ist nahezu illusorisch.

In Kiel zum Beispiel gönnen wir dem Lotsen neben dieser Einsatzzeit 68 Tage im Jahr als sogenannten »Langurlaub«, frei zu planen. Anders ausgedrückt: Wir haben deutlich weniger individuellen Be-

dürfnissen anpassbare Freizeit, als ein normaler Arbeitnehmer alleine durch die Wochenenden generiert. Solche heutzutage selbstverständlichen Dinge wie Teilzeitregelungen, Elternteilzeit oder auch »Sabbaticals« kennen wir nicht.

Warum arbeiten wir in einem so antiquierten System und gönnen uns keinerlei zusätzliche Freiheiten? Die Antwort ist einfach, denn zusätzliche Freizeit verdichtet die Arbeitsbelastung der verbleibenden Lotsen, führt also zu einer Verkürzung der nicht planbaren Ruhezeiten zwischen den Einsätzen. Unsere Arbeit lässt sich nicht »verschieben«, wenn die Prämisse der »ständigen Verfügbarkeit« (keine Wartezeiten für Schiffe) weiter Bestand haben soll. Ein Blick in die benachbarten europäischen Ländern zeigt dort kein einziges Lotssystem, welches nicht ein 1:1-System in Analogie zu den Verhältnissen in der Seefahrt umgesetzt hat.

### Tarifpolitischer Stillstand

Wie konnte es dazu kommen, dass sich die Lotsen im monetären Bereich durchaus dem Ursprungsberuf angepasst entwickeln konnten, bei den Entwicklungen der Rahmenbedingungen, zum Beispiel des Mantel-Tarifvertrages, jedoch weit zurückgefallen sind?

Der Ursprung liegt in einer extrem »ängstlichen« Tarifpolitik der BLK einerseits und der massiven Abwehr nahezu aller Zugeständnisse im zuständigen Ministerium.

Der Tarifgestaltung für die Lotsen liegen zwei Komponenten zugrunde: Zum einen die prozentuale Festlegung der Steigerung der »Soll-Betriebseinnahme«, zum anderen die dafür zu leistende Arbeitszeit. Seit 2001 folgt der erste Teil einer gewissen Systematik, indem Werte aus einem vereinbarten Index direkt zum Steigerungssatz führen. Damit sind bundesweite Tarifverhandlungen nahezu überflüssig geworden. Durch diese komplette Regionalisierung bestand die Arbeit der Tarif-Fachleute auf Seiten der Lotsen ausschließlich in dem Bemühen, die Steigerungswerte konsequent in die Tariftabellen zu überführen – leider auch dies oft nur mit bescheidenem Erfolg.

Zu »echten« Tarifverhandlungen im Verkehrsministerium über die grundlegenden Regelungen der Arbeitszeit aller Lotsen in allen Revieren ist es seit 2001 nicht mehr gekommen. Es liegt jedoch bereits seit damals bei den Lotsen eine



Störungen im viel befahrenen Nord-Ostsee-Kanal stellen eine zusätzliche Belastung der Lotsen dar



Die geforderte ständige Einsatzbereitschaft ist die größte Herausforderung im Berufsleben eines Lotsen

plausibel begründete Argumentationskette zur Anpassung der Arbeitszeit der Lotsen vor, über die jetzt sofort mit dem Ministerium ein intensiver Dialog geführt werden muss.

Es würde den Rahmen dieses Artikels sprengen, diese berechtigten Forderungen im Einzelnen zu erläutern. Deshalb hier beispielhaft nur in Stichworten:

- Mehr denn je benötigen die Lotsen eine personelle Spitzenlastreserve, die 2001 vom Tarifgeber grund- und ersatzlos gestrichen wurde. Ohne diese ist keine »ständige Verfügbarkeit« möglich.
- Die dem Lotsentarif zugrunde liegende wöchentliche Arbeitszeit von 49 Stunden ist angesichts der aktuellen Rechtsprechung (EuGH: »Bereitschaftszeit ist Arbeitszeit«) nicht mehr haltbar.
- Der regional erheblich gestiegene Verwaltungsaufwand gerade für die neue Ausbildung muss angepasst werden.
- Die deutlich verlängerten Lotszeiten angesichts der gestiegenen Schiffsgrößen müssten regional angepasst werden.

Würden alle stichhaltig zu begründenden Maßnahmen konsequent umgesetzt, könnte die Anzahl der Soll-Lotsen um et-

wa 25 % gesteigert werden – damit stünde einem wirklich attraktiven und zukunftsweisenden Einsatzsystem nichts mehr im Wege. Die Risiken bis hin zum »Null-Verdienst« verbleiben ohnehin weiter bei den Lotsen. Es darf auch nicht vergessen werden, dass aufgrund der erheblich längeren Zulaufzeit für den Nachwuchs Verkehrsschwankungen (positive wie negative) über einen viel längeren Zeitraum alleine zu Lasten der Lotsen gehen und somit ein deutlicher Puffer im Personalbestand wichtiger denn je wird.

Zeitgleich sollten die Lotsen anbieten, gemeinsam mit dem Verkehrsministerium zu untersuchen, wie ihre Tätigkeit auf die Schiffe konzentriert werden kann, die diese Leistung aus sicherheitspolitischen Erwägungen wirklich benötigen. Eine dann mögliche Diskussion über die Reviersprache können die Lotsen sehr gelassen angehen.

### Fazit

Mit dem neuen Ausbildungsweg wurde ein Schritt in die richtige Richtung getan. Ohne eine deutliche Anpassung der Ein-

satzsysteme der Lotsen wird dies aber nicht zu einer nachhaltigen Sicherung des in Deutschland hart umworbene Nachwuchs mit Top-Qualifikation für das Lotswesen führen. Das Ministerium sollte nun den zweiten Schritt gemeinsam mit den Lotsen gehen. Eine mögliche Lösung darf dabei aber keinesfalls über einen jahrelangen kräftezehrenden Konflikt entschieden werden, sondern muss schnell und im Konsens im Interesse aller Beteiligten – also vor allem auch unter Einbeziehung der vom Lotswesen abhängigen maritimen Wirtschaft – vorangetrieben werden.

Es wäre eine gute Gelegenheit, die bevorstehende »1. Lotsenkonferenz« am 14. und 15. September in Hamburg nicht nur als »Leistungsschau« zu nutzen, sondern dort die ganz konkrete und gern auch kritische Diskussion im Sinne der hier aufgezeigten Probleme aufzugreifen und eine Lösung herbeizuführen.

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# To Clean or Not to Clean (in Ports)?

Standards, products, strategies: In-water cleaning of ship hulls in ports is gaining more and more attention. A lot of things to discuss during the third expert conference PortPIC, which will be held in Hamburg in September. *By Volker Bertram*

IMO is set to cut the carbon footprint of shipping. The Big Zero is the long-term goal for the second half of the century, but as in football, the next opponent is always the hardest. And next one up is EEXI and CII, mandatory as of 1.1.2023. The EEXI is the Energy Efficiency Existing Ship (Design) Index, akin to the EEDI for newbuildings, expressing the theoretically achievable energy efficiency for the ship as designed, in prime condition as in initial sea trials. The recent poll among stakeholders at the HullPIC conference showed that the shipping community is rather zen about the EEXI. The CII causes greater concern.

The CII is the Carbon Intensity Indicator, calculated based on IMO's fuel oil DCS (Data Collection Scheme), where the requirement to just monitor is now enhanced by grading the performance each year from A to E. Poor operational performance (E once or three consecutive years D) will entail mandatory action to improve performance, planned, documented, tracked, and audited in an enhanced Ship Energy Efficiency Management Plan.

Over time, the thresholds for CII grades will become gradually stricter. Continuing business as usual will then slowly but surely relegate you to the bottom of the class. But IMO's version of limbo dancing with the lowering of the CII bar is only one side of the equation. The other side is fouling which accumulates on the ship hull, appendages, and propellers. Progressive fouling and hull roughness typically causes an increase in required power and fuel consumption for given speed of 7–10% per year. Within 5 years between docking, a ship may then move from an A to E.

Cleaning restores the performance at least partially again. But the currently most popular self-polishing copolymer (SPC) anti-fouling coatings degrade rapidly with conventional cleaning, reducing the lifespan of coatings with increased cleaning frequencies, as pointed out by Alessio Di Fino (Endures) and Liz Haslbeck (US Navy).

Another problem is that cleaning of SPC coatings removes biofouling, and to some extent also paint particles containing biocides. Unless properly captured, the biofouling may contribute to the spread of aquatic invasive species (AIS) and the biocidal paint particles will contaminate the soil in ports, making disposal after dredging a costly burden for ports. It is thus not surprising that we have seen over the past decade more and more ports banning in-water cleaning.

In addition, several regions require »clean hulls« and de facto compliance with IMO's recently revised Biofouling guideline when entering their ports (but do not permit cleaning in these same ports). There is general agreement that hull cleaning is necessary, both for carbon footprint considerations and prevention of AIS spreading. The NIMBY (»Not in my backyard«) mindset of more and more ports frustrates the shipping community, but has good arguments on its side – at least when we look at the common cleaning practice of the past. The dilemma is nicely summed up by Kristina Kern-Nielsen of Litehauz: To Clean or Not to Clean. The good news: As we are increasingly aware of the dilemma, we see also solutions, from ideas to prototypes, shaping up.



© Fleetcleaner

Robots are coming – FleetCleaner opening office in Hamburg in 2022

The upcoming 3rd PortPIC conference brings together all relevant stakeholders to discuss the state of the art, where we need to go from here and how we will best get there, with experts from ship operators, antifouling technology suppliers, robotic and diver in-water cleaning companies, port managers, regulators, and academia. The state of the art is summarised by Aron F. Sørensen (BIMCO) in his »Survey on Biofouling Management and Anti-fouling Systems«: In September 2021, BIMCO conducted a biofouling survey to gain insights into how shipowners are managing biofouling, in-water cleaning and particularly to learn about their experience with systems in use. Responses from 53 companies representing 5668 ships were analyzed.

## Key topics and trends discussed at PortPIC 2022:

- Trying to square the circle – Emerging cleaning solutions without contaminating ports or having to accept premature dry-dock stays.
  - Avoiding regulation creep – We need regulations, but do we need that many groups and panels working largely uncoordinated on related issues that overlap? Transparency and information exchange will hopefully lead to streamlining the current multitude of parallel initiatives.
  - Resistance is futile – Robotic cleaning solutions are advancing worldwide, and the community tries to keep up to date on limitations and capabilities of our little mechanical helpers.
- John Polglaze (PGM Environment) sums up the challenges and realities of comprehensive in-water hull cleaning and inspection, comparing it to »cleaning Swiss cheese«. Fear not. The expression may sound like mission impossible, but the Australians

are ahead of the game and Polglaze gives a nice overview of standards, equipment and techniques that should be considered to fully and verifiably remove biofouling by in-water methods, based on years of experience in the land down under.

### It's complicated

Nobody denies the challenges involved in sustainable hull management; in fact, the community is increasingly aware that the challenges are bigger than most of us thought a decade ago. But just lamenting the state of the world from one's individual perspective has never been a convincing strategy. Nor has been trying to sit things out, hoping that somehow the problems will just go away. Tor Østervold (ECOsubsea), robotic cleaning pioneer from Norway, sends a clear warning: »Shipping is heading for a biofouling Catch 22. We, as an industry, need to do something about this. Otherwise we will stumble ahead and in 2027 sit there with a much bigger environmental problem than today and wish we could go back to 2022 and make it all right to start with.«

Østervold is not alone in urging action. This will involve moving from comfortable business as usual with known procedures and technologies to exploring some Terra Incognita, probably not only on technical issues, but also in stakeholder relations, contractual and regulatory frameworks. Some of the presenters at PortPIC seem to have set sails already for the future, even if the course is not yet clearly charted to the final destination. Ports will play a key role and it is encouraging that some are actively seeking for solutions outside the NIMBY mindset. A consortium of Belgian ports (Antwerp, Zeebrugge and Bruges) reports of lessons learned and challenges for the future that were realized during the first exploration phase, where new candidates for in-water cleaning were tested. Among the challenges for individual port authorities is the lack of international standards for in-water cleaning, the difficulties of creating a level playing field for competing cleaning service providers, and the development of port regulations for pro-active cleaning. Besides these challenges, port authorities need to develop competence in hull management technology, including new developments, such as new coatings, robotic inspection and cleaning technology, and ultrasonic biofouling protection. Port managers, like most superintendents in shipping, are not at home in these fields and there are information hurdles to overcome – PortPIC helps in this respect.

### Too much of a good thing

Lack of standards and guidelines has been a recurrent lament at the PortPIC conference over the past three years. Having a common terminology and approach, e.g. in how fouling is assessed and documented in reports, is a good thing. Having a multitude of similar, but not same, »standards« and guidelines is too much of a good thing. IMO, EU, shipping associations like BIMCO,

AMPP (ex-NACE) in the USA, NGOs like Bellona in Norway striving for a new ISO standard, national round tables, individual ports, and companies like Jotun work in parallel on different aspects of in-water cleaning and inspection. More information exchange and cooperation between the many working groups will hopefully lead to consolidation and aligned recommendations and requirements for the industry.

As different stakeholders have different interests, it is not surprising that initial proposals for regulations differ also in how lenient or strict the recommended procedures are. Practicalities in shipping and high environmental expectations lead to many square-the-circle scenarios in the detailed discussion. It will take a while to find suitable compromises and implement upcoming guidelines and standards, but at least the process has started.

### Resistance is futile

In-water cleaning and inspection will become an increasing important topic for the shipping world, fueled by the renewed focus on energy efficiency in operation through the tightening CII screw. The field of robotics will be a game changer in this process. Robotic assistance to human divers in cleaning large areas has been around for decades, but now the robots become increasingly autonomous, and are used also for in-water inspection tasks. With the trend towards »Grooming«, i.e. proactive and frequent cleaning, robots will be employed more and more. Another case of exponential growth.

Simon Doran (HullWiper) is representative, speaking from the experience of the global market leader, but not resting on his laurels. He describes assorted aspects of evolving inspection and cleaning technology. Recent developments for HullWiper include complete 3D mapping of vessels utilising specialised camera software, underwater wireless communication for the robots and improved battery technology, which allows removing the use of the umbilical cords. Stefan Harries (Friendship Systems) coauthors a paper on such 3D mapping, be it by scanning (in dock or under water) or by recreation through advanced CAD methods.

And more is waiting in the wings. At the University of Berkeley, researchers around Alexandre Immas work on making in-water robots for hull inspection team capable. Swarms of small robots can then share the job, using underwater wireless communication. This is not a vision; field tests in 2022 demonstrated the feasibility of automated ship hull inspection with a (small) swarm of unmanned underwater vehicles.

Another innovative idea comes from Israel: Aviv Melman (NakAI Robotics) will introduce an in-transit autonomous hull cleaning robotic platform. The basic idea is charming: if the ship is cleaning in transit, any removed biofouling would end up in the oceans, not causing concerns with AIS spread. But the devil lurks often in the detail. Only time will tell whether this solution will thrive in the market or be a historical side note. Field test this year are a good start – and may the best ideas win. We all would benefit. ■

The enemy: Biofouling causes significant added fuel consumption and poses dangers of aquatic invasive species



## WILHELMSHAVEN

## LNG-Anleger und Pipeline im Bau

In Wilhelmshaven startete im August der Bau einer Pipeline, über die importiertes Flüssigerdgas ins deutsche Netz eingespeist werden soll. Die 26 km lange unterirdische Pipeline soll das geplante LNG-Importterminal in Wilhelmshaven an das Gas-Fernleitungsnetz im ostfriesischen Etzel anschließen. Mit einer Kapazität von 7,5 Mrd. m<sup>3</sup> im Jahr soll das erste LNG-Importterminal künftig rund 8,5% des deutschen Gasverbrauchs abdecken. Dafür war bereits vor einigen Wochen der erste Rammschlag erfolgt. Auf der Höhe von Hooksiel wird der FSRU-Anleger in den Boden gerammt. Eine Plattform für die Gaslöschanlage, davor drei Anlegedalben und vier Vertäudalben. Die Jade wird dort auf rund 42 ha Fläche zur Fahrrinne hin vertieft und eine Liegewanne von 16 m NHN am Anleger angelegt. Ende des Jahres soll eine FSRU, eine schwimmende Regasifizierungsein-



Ende des Jahres sollen der FSRU-Anleger und die Gas-Pipeline in Wilhelmshaven fertig sein

heit, an einem neu gebauten Verladebrücke festmachen. Der Bund hat insgesamt vier FSRUs gechartert. Gegen die Pipeline gibt es im laufenden Planfeststellungsverfahren 14 Einwände. Vor



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allem Umweltschutzverbände befürchten, dass Tiere durch die Bauarbeiten gestört werden. Über die Einwände will das Landesamt für Bergbau bis Ende August entscheiden. ■

## ITALIEN

## Terminal La Spezia wird vergrößert

Eine Umschlagkapazität von bis zu 2 Mio. TEU und ein Bahnanteil von 50% im Hinterlandverkehr sind die Ziele für das La Spezia Container Terminal (LSCT) in Italien. Die Hauptinvestition betrifft den Ausbau des Terminals Ravano bei einer Investitionssumme von rund 220 Mio. €, hälftig für Bauarbeiten und Ausrüstung. Der Umschlag soll schrittweise bis 2032 auf ein jährliches Aufkommen von etwa 1,9 Mio. TEU gebracht werden bei einer Kapazität von etwa 2 Mio. TEU. Im Jahr 2021 wurde ein Gesamtumschlag von 1,26 Mio. Standardcontainern erreicht.

Die Erweiterung des Terminals Ravano schließt den Bereich Marina del Canaletto ein, außerdem die »interne Rationalisierung« des Terminals LSCT mit dem Bau des neuen Umspannwerks in Molo Fornelli, den Einrichtungen für die Ausweitung der Aktivitäten in Molo Ravano und dem Bau des neuen Terminalzugangs »Gate«. Hinzu kommt die Automatisierung des Terminals LSCT, wobei auch eine Aktualisierung des Terminal Operating System (TOS) ansteht.

Die Planungen sehen zu dem andere infrastruktureller Rationalisierungs- und Erweiterungsarbeiten vor, insbesondere den Bau des neuen Eisenbahnknotens am Garibaldi-Pier, die Rationalisierung der Bereiche des Fornelli-Terminals und die Erweiterung des Garibaldi-Piers auf der Ostseite. Dabei handelt es sich um Investitionen, deren Umfang je nach Marktentwicklung variieren kann.

Die Terminalgesellschaft LSCT ist ein Joint Venture der Eurogate-Tochter Contship Italia (60%) und des MSC-Investitionsvehikels Marininvest (40%). Hauptkunde des Terminals mit rund 75% am Gesamtcontaineraufkommen ist die Linienreederei MSC. ■

## BRASILIEN

## Hafen Paranaguá wird vertieft

TCP, die Betreibergesellschaft des Paranaguá-Containerterminals, hat den Tiefgang der Liegeplätze von 12,3 auf 13,0 m erhöht. Die neue Maßnahme soll für sicherere Betriebsbedingungen bei der Ein- und Ausfahrt des Terminals sorgen. Mit dem Abschluss der Ausbaggerung der Liegeplätze des Terminals und der Genehmigung der Bathymetrie ist die erste Etappe des Ausbaus abgeschlossen. In den nächsten Phasen soll die Kapazität des Hauptzugaskanals erhöht werden. Von 2015 bis heute wurde der Betriebstiefgang des Hafens von Paranaguá um 2.000 TEU pro Schiff erweitert. »Ziel ist es, eine Tiefe zu erreichen, bei der wir in der Lage sind, die neue Generation von Schiffen aufzunehmen und damit unsere Umschlagkapazität weiter zu erhöhen und uns als obligatorische Station für wichtige Seeverkehrsrouten für den Außenhandel zu konsolidieren«, erklärt der Hafensbetreiber. ■



13 m Tiefgang sollen mehr Ladung nach Paranaguá bringen

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## KALIFORNIEN

## »Binnenhafen« in der Wüste soll US-Westküsten-Hubs entlasten

Das Board of Supervisors von Kern County hat grünes Licht für den Bau des Mojave Inland Port gegeben. Mit dem Binnenhafen soll die chronische Überlastung der Häfen in der San Pedro Bay verringert werden. Die Anlage soll den Druck auf die Häfen von Los Angeles und Long Beach verringern. Allerdings handelt es sich dabei nicht um einen Hafen am Wasser mitten in der Mojave-Wüste, sondern um ein Eisenbahn-Terminal, das die Projektgesellschaft Pioneer Partner als »Dry Port bezeichnet«, rund 145 km von der San Pedro Bay entfernt. Mithilfe des Mojave Inland Port sollen die Güter aus den nahe gelegenen Häfen effizienter per Bahn ankommen und schneller an ihren endgültigen Bestimmungsort weitergeleitet werden. Die Container werden in den Seehäfen an der Westküste der USA von den Schiffen auf Shuttle-Züge entladen,



Der »Dry Port« soll den Umschlag in L.A. und Long Beach effizienter machen

die sie auf direktem Weg über den wenig befahrenen Alameda Corridor nach Mojave transportieren. Von hier aus werden sie dann weiterverteilt. Mit einer Fläche von mehr als 160 ha in unmittelbarer Nähe des Mojave Air & Spa-

ce Port, soll die Anlage eine Kapazität von 3 Mio. TEU pro Jahr haben. Der Standort ist abgesehen vom Flughafen auch direkt an das Schienennetz und an zwei wichtige Autobahnen, die State Highways 14 und 58, angeschlossen. ■

## ÄGYPTEN

## Zwei Terminals für Hutchison

Die Hafengruppe Hutchison Ports hat mit der ägyptischen Regierung Verträge für zwei neue Konzessionen zum Betrieb von Containerterminals in Ain Sokhna Port und El Dekheila Port geschlossen.

Eric Ip, Group Managing Director von Hutchison Ports, erklärte: »Wir sind seit fast 20 Jahren in Ägypten tätig, das für uns schon immer ein äußerst wichtiger Markt war, nicht nur, weil es an der Kreuzung einer der verkehrsreichsten Ost-West-Handelsrouten liegt, sondern auch, weil die junge und sehr dynamische Bevölkerung des Landes zu einer steigenden Nachfrage nach internationalem Handel führen wird.«

Zusammen mit den Co-Investoren, der französischen Linienreederei CMA CGM und Cosco Shipping Ports für das Projekt in Sokhna und der MSC-Hafentochter Terminal Investment Limited (TIL) für das Projekt in El Dekheila, zeigt sich Hutchison Ports »zuversichtlich, diese Projekte zum Erfolg zu führen«.

Die Investitionen für die Inbetriebnahme der beiden Hafenprojekte belaufen sich nach Angaben der Terminalgruppe auf rund 700 Mio. \$, womit sich die Gesamtinvestitionen von Hutchison Ports allein in Ägypten auf über 1,5 Mrd. \$ erhöhen.

Auch in anderen Ländern Afrikas ist die Gruppe aktiv. Anfang August unterzeichnete Hutchison Ports außerdem eine Absichtserklärung mit der AD Ports Group, um die geschäftliche Reichweite der beiden Unternehmen weltweit zu erhöhen. So wollen die beiden Unternehmen eine Partnerschaft eingehen, um in Tansania tätig zu werden, wo sie Möglichkeiten zur Verbesserung des Hafenbetriebs in dem ostafrikanischen Land, einschließlich des Hafens von Dar Es Salaam, ausloten wollen. ■

## INDONESIEN

## Neuer Mehrzweckhafen eingeweiht

Nach vierjähriger Bauzeit wurde der Kijing International Port, das größte Containerterminal auf der indonesischen Insel Kalimantan in der Region Borneo, Anfang August eingeweiht. Der von der Indonesia Port Corporation betriebene Hafen hat eine jährliche Umschlagkapazität von rund 1,95 Mio. TEU und erhöht damit die bisherige Kapazität von 500.000 TEU in Pontianak deutlich. 195 Mio. \$ wurden in den neuen Hafen investiert, der den Export wichtiger Rohstoffe wie Palmöl, Bauxit und Tonerde erleichtern soll. Das an der Küste der Karimata-Straße gelegene Terminal hat direkte Seeverbindungen nach Sumatra, Singapur und Malaysia. Der Mehrzweck- und Containerhafen wurde 3,5 km vor der Küste ins Meer gebaut. Die Plattform ist 1 km lang und 100 m breit und verfügt über Liegeplätze auf beiden Seiten. Umschlagequipment für Container fehlt bislang noch. ■



3,5 km vor der Küste steht das Terminal im Meer, verbunden per Straßenbrücke

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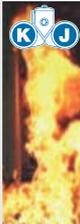
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selten in der Geschichte wurde die Schifffahrt in ihrer Bedeutung für die Gesellschaft und für das Leben jeder und jedes Einzelnen so sichtbar wie in diesen Tagen. Alle großen Nachrichtenportale berichten beständig und gebannt davon, wie einzelne Schiffe die Häfen der Ukraine mit weltweit dringend erwartetem Getreide verlassen, sie informieren darüber, was eine mögliche Seeblockade vor Taiwan für die gesamte europäische Wirtschaft bedeuten würde, sie zeigen uns, wie es mit dem Bau von LNG-Terminals an der deutschen Küste vorangeht, sie machen mit dramatischen Bildern sichtbar, was zu erwarten ist, wenn der Binnenschifffahrt das Wasser in den Flüssen fehlt. Schifffahrt und Schiffe, überall wo man auch schaut und wohl niemand, der Interesse am Geschehen in der Welt hat, kann sich dem in der heutigen Zeit entziehen. Die Aufmerksamkeit für die Schifffahrt ist derzeit riesengroß, und man könnte fast fragen, ob es zu all dem nun auch noch eines Deutschen Schifffahrtstages bedarf.

Für mich ist die Antwort so klar wie einfach: Ja. Denn, wann, wenn nicht jetzt, passt ein Deutscher Schifffahrtstag genau in die Zeit? Für mich könnte der Zeitraum Ende September mit dem Höhepunkt am 29. September, der zugleich der Weltschifffahrtstag der Vereinten Nationen ist, gar nicht besser gewählt sein.

Die Schifffahrt braucht Aufmerksamkeit und genau diese erreichen wir mit dem Deutschen Schifffahrtstag, der nun zum 36. Mal und dazu erstmalig in Zusammenarbeit mit der Binnenschifffahrt und der Marine stattfinden wird. Die Planungen sind weit vorangeschritten und dank der breiten Unterstützung in Bremen und Bremerhaven und natürlich unserer Partner und Sponsoren können wir mit großer Freude dem umfangreichen Programm entgegensehen. Von herausragenden Fachtagungen, einem außergewöhnlichen Eröffnungsfestakt im Dom zu Bremen über die größte Schiffs- und Bootsparade auf der Weser, maritime Exkursionen, Entdeckertouren zur Maritimen Woche, einem Nautischen Dialog in Bremerhaven, ungewöhnlichen maritimen Berufsinformationen, Open Ship und vielem mehr wird ein Gesamtpro-



Dr. Iven Krämer

gramm geboten, das die Schifffahrt genauso positioniert, wie es richtig ist – nämlich im Mittelpunkt.

Alle Programmpunkte haben wir auf der eigens eingerichteten Website des Deutschen Schifffahrtstages unter [www.deutscher-schifffahrtstag.de](http://www.deutscher-schifffahrtstag.de) abgebildet. Dort finden Sie auch eine beachtliche Anzahl von »Positionen« unterschiedlichster Personen, die sich jeweils mit dem Motto des Deutschen Schifffahrtstages »Nachhaltige Schifffahrt: Gemeinsam, klar, sauber!« auseinandersetzen. Sie finden Hinweise auf die vielfältigen beruflichen Möglichkeiten und Chancen, die die maritime Branche bietet. Sie finden Hintergrundinformationen und Sie erfahren Näheres zu unseren Partnern und Unterstützern, denen ich bereits an dieser Stelle im Namen des Deutschen Nautischen Vereins ein herzliches Dankeschön aussprechen möchte.

Seien Sie mit dabei, diskutieren Sie mit, wenn es in den kostenfreien, aber hochwertigen Fachtagungen um die großen Zukunftsfragen der Schifffahrt und der Häfen geht, beteiligen Sie sich an der Schiffs- und Bootsparade, kommen Sie zur Maritimen Woche und, um es kurz zu machen: Werden Sie Teil des Deutschen Schifffahrtstages.

Herzlichst,  
Ihr Prof. Dr. Iven Krämer

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### **Trotz der teilweise hochsommerlichen Temperaturen herrschte alles andere als Flaute im STFA**

Der Arbeitskreis Berufsbildung und Soziales hat das Impulspapier »PSYCHOSOZIALE AUSWIRKUNGEN DER CORONA-PANDEMIE UND DES KRIEGES IN DER UKRAINE AUF DIE LEBENS- UND ARBEITSWELT DER SEELEUTE AN BORD« vorgelegt, das im E-Mail Verfahren abgestimmt wird, um es auf dem Bremer Schifffahrtkongress präsentieren zu können.

Den Mitgliedern ist es in hervorragender Weise gelungen, die Situation und auch die Not der Seeleute umfänglich und empathisch zu beschreiben und mit den Impulsen Handlungsoptionen zur Verbesserung der Lebens- und Arbeitsbedingungen aufzuzeigen.

Das Bundesministerium für Digitales und Verkehr (BMDV) hat die Untersuchung und Ausarbeitung zu den europäischen Küstenwachen inklusive nun auch der Umsetzung in Deutschland zur Kenntnis genommen, ohne sich inhaltlich dazu zu äußern. Der Vorstand des DNV wird in Kürze das Gesamtpapier veröffentlichen.

Wir sind der Meinung, dass auf Grund der umfangreichen Rechercharbeit der Task Force nunmehr ein Werk vorliegt, welches auf sehr fundierte Art belegt, dass die deutsche Lösung sich harmonisch in die diversen europäischen Lösungen einfügt und somit im europäischen Vergleich keine grundlegenden Defizite und somit auch keine signifikanten Verbesserungsnotwendigkeiten auftreten. Das folgende Zitat aus der Studie der Task Force führt dies aus:

»Darüber hinaus gilt, dass der Aufbau und die Grundstrukturen des deutschen Systems der Küstenwachfunktionen grundsätzlich mit den Systemen der acht betrachteten europäischen Küstenstaaten vergleichbar ist, was die grundsätzlichen Zuständigkeiten und die Strukturen in diesen Ländern angeht. Selbst für die Aufgabenteilung in einem föderalen System finden sich gewisse Paralle-

len. In Bezug auf die Konzentration von Aufgaben in den Küstenwachfunktionen setzt das föderale System in Deutschland Grenzen. Jedoch sind die gebildeten Strukturen zur Zusammenarbeit zwischen Bund und Ländern durchaus mit ähnlichen Einrichtungen in anderen Ländern vergleichbar. Das Niveau der Konzentration von Aufgaben in den Küstenwachfunktionen fügt sich somit in das Spektrum der betrachteten Systeme ein.«

Auch der Ständige Fachausschuss arbeitet im Zeichen des Deutschen Schifffahrtstages. Am 28. September 2022 findet mit der Sitzung des StFA im Haus der Wissenschaft der inoffizielle Auftakt zum Deutschen Schifffahrtstag statt.

Dazu konnte u.a. Prof. Schwindt für einen Vortrag zum »Rescue Star« gewonnen werden. Der Schöpfer dieses hervorragenden Mittels zur Rettung außenbords befindlicher Personen kann auf zahlreiche Testimonien zurückgreifen, dass dieses System funktioniert. Wir werden dazu über den Rescue Star Informationen erhalten, und voraussichtlich auch die Erfahrungen einer Reederei hören. So konnte auf der MSC RAPALLO im Februar 2022 ein stark erschöpfter, durch Kreislaufzusammenbruch (Bergungstod) gefährdeter Schiffbrüchiger unter widrigen Schwerwetterbedingungen kreislaufschonend in horizontaler Lage von einem hochbordigen und im starken Seegang rollenden Containerschiff unbeschadet, schnell und sicher aus der tosenden See an Bord genommen werden.

Wir freuen uns, die Mitglieder und Freunde des StFA mit diesem und anderen relevanten Themen am 28.09. in Bremen begrüßen zu können.

Natürlich schreitet auch die inhaltliche Vorbereitung der Fachtagungen auf dem Deutschen Schifffahrtstag voran, die der Ständige Fachausschuss koordiniert und teilweise als Host begleiten wird. Es bleibt also interessant und geht voran.



Dr. Frank-Walter Steinmeier

## DEUTSCHER SCHIFFFAHRTSTAG 2022

### Bundespräsident Dr. Frank-Walter Steinmeier wird Schirmherr

Bundespräsident Dr. Frank-Walter Steinmeier hat die Schirmherrschaft über den diesjährigen 36. Deutschen Schifffahrtstag, der vom 29. September bis zum 2. Oktober in Bremen und Bremerhaven ausgerichtet wird, übernommen. In seinem Grußwort, in dem er sich an alle Teilnehmerinnen und Teilnehmer und natürlich auch an jene, die noch teilnehmen möchten, richtet, heißt es:

»Zu besprechen gibt es genug: Der brutale Angriffskrieg Russlands gegen die Ukraine erschüttert uns alle – eine Folge davon ist die militärische Blockade der Handelschifffahrt im Schwarzen Meer. Dazu kommt die Pandemie, die weltweit Lieferketten hat reißen lassen. Beides zeigt uns, von welcher elementarer Bedeutung die Seeschifffahrt als »Träger des Welthandels« für Beschäftigung und Wohlstand bei uns und überall auf der Welt ist ... Über zwei Drittel unseres Planeten sind von Wasser bedeckt.

Ohne die Schifffahrt wäre unsere Welt sehr viel kleiner, hätten keine neuen Lebensräume erschlossen werden können, wäre der Handel in der Form, wie wir ihn kennen, nicht möglich. Sie alle tragen dazu bei, dass internationale Versorgungsketten funktionieren, unsere Einkaufsregale voll sind und Waren ankommen. Ich

möchte Ihnen allen für Ihre Arbeit danken. Ganz besonders denke ich dabei an die harte, oft entbehrungsreiche und gefährliche Arbeit der Seeleute.

Seit über 10.000 Jahren treibt es Menschen in schwimmenden Gefährten aufs Wasser – sei es aus Abenteuerlust, aus Eroberungsdrang oder aus schierer Not. Ende des 15. Jahrhunderts konnte jeder Punkt der Weltmeere mit Schiffen angesteuert werden. Heute ist die Schifffahrt ein unverzichtbarer Bestandteil des weltweiten Verkehrs. Zugleich wissen wir, dass wir mit dem Lebenselixier Wasser und der Umwelt verantwortungsvoll umgehen müssen. Mit Ihrem diesjährigen Motto »Nachhaltige Schifffahrt: Gemeinsam, klar, sauber!« stellen Sie sich der Herausforderung des Schutzes der Ozeane und des Klimas. Ich kann alle Verantwortlichen nur darin bestärken, hier klaren Kurs zu halten.«

Das vollständige Grußwort findet sich natürlich auch auf der Website des Deutschen Schifffahrtstages unter [www.deutscher-schifffahrtstag.de](http://www.deutscher-schifffahrtstag.de).

## HIGHLIGHTS DES 36. DEUTSCHEN SCHIFFFAHRTSTAGES

Unter dem Motto »Nachhaltige Schifffahrt: Gemeinsam, klar, sauber!« werden die zentralen Zukunftsfragen der Schifffahrt diskutiert.

Mit einem vielfältigen Programm, zu dem u.a. die seit Jahrzehnten größte Schiffs- und Bootsparede auf der Weser zählt, wird die Schifffahrt und ihre Zukunftsperspektive im Spannungsfeld globaler Herausforderungen wie dem Klimawandel, der Digitalisierung und dem ge-





wachsenen Sicherheitsanspruch nicht nur für die maritime Fachwelt, sondern auch für die breite Öffentlichkeit präsentiert. Die Highlights neben der Schiffs- und Bootsparade werden die drei Fachtagungen sowie der Maritime Dialog in Bremerhaven sein.

Das fachliche Highlight wird gleich am ersten Tag des Deutschen Schifffahrtstages erfolgen. Am 29. September finden jeweils zwischen 09:00 und 15:00 Uhr parallel drei äußerst spannende Fachkonferenzen statt. Dabei haben Sie die Wahl zwischen:

•**Freiheit der Meere:**

**Nachhaltige Sicherung der Seewege als Grundlage fairen Welthandels und der Versorgungssicherheit**

Diese Konferenz wird in Kooperation mit dem Deutschen Marinebund und dem Verband Deutscher Reeder ausgerichtet. Hier werden unter anderen die Präsidentin des VDR, Dr. Gaby Bornheim, der Inspekteur der Deutschen Marine, Vizeadmiral Jan- Christian Kaack und der Präsident des Deutschen Marinebundes, Heinz Maurus in Bremen vor Ort sein.

•**Schifffahrt –**

**Ein umweltfreundlicher Verkehrsträger**

Diese Fachveranstaltung in Kooperation des Deutschen Nautischen Vereins mit dem Bundesverband der Deutschen Binnenschifffahrt (BDB) richtet den Blick auf die Schifffahrt als umweltfreundlichen Verkehrsträger. Dort werden unter anderem der Präsident des Bundesverbandes der Deutschen Binnenschifffahrt, Martin Staats, Prof. Dr.-Ing. Bettar O. el Moctar, Universität Duisburg-Essen, die Bremer Senatorin für Wissenschaft und Häfen, Dr. Claudia Schilling, Heinrich Kerstgens von Rhenus SE &



Co.KG, Prof. Dr.-Ing. Holger Watter, von der Hochschule Flensburg, Carsten-S. Wibel von Abeking & Rasmussen, Cornelius Eich vom Team Malizia (Boris Herrmann) und eine INNOVATIONSMEILE organisiert vom Maritimen Cluster Norddeutschland erwartet.

•**Nachhaltige Häfen:**

**Gemeinsam, klar, sauber!**

Diese Fachveranstaltung wird sich der Thematik der Nachhaltigkeit in den Häfen widmen, wobei als Partner des Deutschen Nautischen Vereins der Forschungsverbund Maritimes Recht und der Hafenrechtsausschuss der HTG agieren. Im Rahmen dieser Konferenz beabsichtigt das Maritime Cluster Norddeutschland die Verleihung eines Preises für den unterschiedliche innovative Lösungen für Null-Emissionen am Liegeplatz gesucht wurden.

Die Teilnahme an den Fachkonferenzen ist kostenlos. Informationen zu den detaillierten Abläufen, Veranstaltungsorten und Zeiten sowie die Möglichkeit der





verbindlichen Anmeldung finden sich im Programmbereich der DST-Website unter [www.deutscher-schiffahrtstag.de](http://www.deutscher-schiffahrtstag.de).

Die **Schiffs- und Bootsparade** findet am 30. September statt. Ab 08:00 Uhr wird sich eine große Flotte unterschiedlichster Schiffe auf die 35 Seemeilen lange Reise begeben, vorbei am 400 Jahre alten Vegesacker Hafen, den maritimen Standorten Brake und Nordenham bis nach Bremerhaven. Ankunft der Parade wird dort gegen 15:00 Uhr erwartet. An der Schiffs- und Bootsparade werden unter anderem teilnehmen: die Segelschiffe Großherzogin Elisabeth und Alexander von Humboldt, das Feuerschiff Elbe 1, der Dampfeisbrecher Stettin und die Atair, das neue Flaggschiff des Bundesamtes für Seeschifffahrt und Hydrographie. Begleitet werden die historischen Schiffe von vielen privaten Sportbooteigner\*innen, die die Parade nicht verpassen möchten. Mehrere Fahrzeuge werden vor und nach der Parade für Open Ship Aktionen und Ausfahrten zur Verfügung stehen.

Natürlich sind auch Mitfahrten an der Parade möglich, wozu Sie sich bitte individuell an die Betreibervereine der jeweiligen Schiffe wenden mögen!

Im Anschluss an die Schiffs- und Bootsparade wird am frühen Abend des 30. September 2022 beginnend ab 17:00 Uhr in Bremerhaven ein breit angelegter **Maritimer Dialog** stattfinden. Die Begrüßung hält der Oberbürgermeister der Seestadt, Herr Melf Grantz und in lockerer Atmosphäre wird Raum gegeben für

einen maritimen Austausch. Als Inspiration und passend zum Motto des Deutschen Schiffahrtstages »Nachhaltige Schifffahrt: Gemeinsam, klar, sauber!« erwartet die Teilnehmenden als besonderes Highlight eine Festrede der Präsidentin des Bundesamtes für Seeschifffahrt und Hydrographie (BSH), Dr. Karin Kammann-Klippstein.

Die Festveranstaltung soll zugleich genutzt werden, um die Leistungen der Schülerinnen und Schüler Bremerhavens zu würdigen, die sich in der Vorbereitung auf den Deutschen Schiffahrtstag im Rahmen unterschiedlichster Projekte mit Fragen der Schifffahrt und des Maritimen auseinandergesetzt haben.

Unmittelbar im Vorfeld und, wenn man so möchte, als maritimes »Vorprogramm« des Deutschen Schiffahrtstages findet dieses Jahr die **Maritime Woche** vom 23.09 bis 29.09 in Bremen statt. Die Maritime Woche, zu der regelmäßig über 70.000 Besucher strömen, zeichnet sich durch ein breites kulinarisches und kunsthandwerkliches Angebot aus. Die familienorientierte, kostenfreie Veranstaltung findet in diesem Jahr zum dreizehnten Mal statt und hat sich neben Darbietungen von regionalen Musikern auch als Möglichkeit etabliert, die maritime Historie und Verbundenheit der Stadt Bremen zu verdeutlichen. Veranstaltungshöhepunkte der Maritimen Woche sind die Lampionfahrt von rund 120 Schiffen zwischen Stephanibrücke und Weserstadion, der Drachenboot Cup und die Forschungsmeile mit rund 30 Forschungseinrichtungen.





## NAUTISCHER VEREIN ZU BREMEN

In seiner 117 jährigen Geschichte richtet der Nautische Verein zu Bremen zum 3. Mal einen Schifffahrtstag (ehemals Seeschifffahrtstag) aus, aber zum ersten Mal zusammen mit den Kollegen/innen des Nautischen Vereins zu Bremerhaven.

Nach einer fast zweijährigen Vorbereitung für den Deutschen Schifffahrtstag 2022 (DST) befinden wir uns jetzt auf der Zielgerade, denn in knapp vier Wochen geht es los.

Vor der offiziellen Eröffnung des DST am 29. September im St. Petri Dom zu Bremen findet am 27. und 28. September der 16. Bremer Schifffahrtskongress in der Hochschule Bremen statt. Unter anderem wird dort ein vom StFA-Arbeitskreis »Berufsbildung und Soziales« erarbeitetes Impulspapier über die psychosozialen Auswirkungen der Corona-Pandemie und des Krieges in der Ukraine auf die Lebens- und Arbeitswelt der Seeleute an Bord den Teilnehmern präsentiert.

Vom 23. Bis 29. September findet die traditionelle Maritime Woche mit vielen Aktivitäten für Groß und Klein entlang und auf der Weser statt.

Am Vormittag des Eröffnungstages finden drei sehr interessante Facha-

gungen statt, die der StFA zusammen mit unseren Partnern Bundesverband der Deutschen Binnenschifffahrt e. V. (BDB) und Deutscher Marinebund (DMB) organisiert hat.

Für die geplante Schiffs- und Bootsparade von Bremen nach Bremerhaven am 30. September gibt es eine eigene Arbeitsgruppe, in welcher die Vertreter der beiden Häfen und die Verwaltung der Wasserstraße Weser mit eingebunden sind.

Über den aktuellen Stand der Anmeldungen zur Schiffs- und Bootsparade kann man sich auf unserer Webseite informieren. Der Vorstand des Nautischen Vereins zu Bremen ist

nunmehr dabei, die Ausrichtung des Nautischen Essens vorzubereiten und auch dabei sind wir gut in der Zeit.

Diese Veranstaltung wird in der Oberen Rathaushalle in Bremen stattfinden und direkt gegenüber, quasi Tür an Tür, findet die Eröffnungsveranstaltung des DST im Dom zu Bremen statt. Beide Veranstaltungen sind zeitlich so gelegt, dass sie aneinander anschließen.

Jetzt stürzen wir uns auf die noch nicht abgeschlossenen Punkte der Planung und hoffen dann auf einen schönen Verlauf des Deutschen Schifffahrtstages 2022.





## NAUTISCHER VEREIN ZU BREMERHAVEN

Beim »Nautischen Verein zu Bremerhaven« laufen die Vorbereitungen zum »Deutschen Schifffahrtstag 2022« auf Hochtouren. Nachdem wir den DST bereits in den Jahren 1971 und 1992 durchgeführt haben, ist es wieder an der Zeit, es erneut zu tun. Deshalb freuen wir uns, dass wir in diesem Jahr zusammen mit dem »Nautischen Verein zu Bremen e.V.« den 36. Deutschen Schifffahrtstag gemeinsam durchführen werden. Es sind nicht einmal mehr vier Wochen bis

zum großen Event. Bis dahin gibt es noch einiges zu tun.

Ein Höhepunkt ist sicherlich, neben vielen anderen, die für den 30. September geplante Schiffs- und Bootsparade auf der Weser zwischen Bremen und Bremerhaven. Die Parade wird das gesamte Spektrum von sehr modernen und umweltfreundlichen Schiffen bis hin zu Arbeitsschiffen beinhalten. Auch Traditionsschiffe und Sportboote werden nicht fehlen. Unser gemeinsames Ziel ist es, die wohl größte Parade seit vielen Jahren auf die Beine zu stellen.

Zum Abschluss der Schiffs- und Bootsparade wird am frühen Abend des 30. September in Bremerhaven ein breit angelegter Maritimer Dialog stattfinden. Die Begrüßungsrede in Bremerhaven wird der Oberbürgermeister der Seestadt Bremerhaven, Herr Melf Grantz halten.

Die Teilnehmer/innen erwartet ein besonderes Highlight mit der Festrede

der Präsidentin des Bundesamtes für Seeschifffahrt und Hydrographie (BSH), Frau Dr. Karin Kammann-Klippstein.

Es folgt ein buntes Maritimes Wochenende mit mehreren interessanten Veranstaltungen und »Open Ship« Möglichkeiten einiger teilnehmender Schiffe.

Am Sonntag findet die Jubiläumsfeier »125+1« der »Deutschen Seemannsmission am Standort Bremerhaven statt.

Der 36. Deutsche Schifffahrtstag endet am Sonntag, den 2. September 2022, mit einem Abschlussgottesdienst in der Großen Kirche in Bremerhaven.

Der DST 2022 wird für unsere Region zu einem großartigen maritimen Ereignis werden. Freuen wir uns darauf!

Wir sind noch dabei, alles in die richtigen Bahnen zu lenken, um einen großartigen Verlauf der Festlichkeiten in Bremerhaven zu erreichen.





## PERSONALIEN

Eine besondere Ehrung erhielt das langjährige Vorstandsmitglied im NV Wilhelmshaven-Jade e.V., und Mitglied im ständigen Fachausschuss des Deutschen Nautischen Vereins, **Kapitän Godehard Ohmes**.

Kapitän Ohmes war auch lange Jahre als ehrenamtlicher Mitarbeiter in der Seemannsmission Wilhelmshaven tätig. Für sein Engagement wurde er jetzt mit der höchsten Auszeichnung der Diakonie, dem »Goldenen Kronenkreuz« ausgezeichnet.



Kapitän Godehard Ohmes

## TERMINE

**05.09.22**

Maritime Future Summit in Hamburg, SMM-Eröffnung

**06.09.22 bis 09.09.22**

SMM – Ausstellung Schiff, Maschine, Meerestechnik in Hamburg

**27. / 28.09.22**

16. Bremer Schifffahrts-Kongress in der Hochschule Bremen

**23. 09. 22 bis 29. 09. 22**

Maritime Woche in Bremen

**29.09.22 bis 02.10.22**

36. Deutscher Schifffahrtstag (DST 2022) in Bremen und Bremerhaven

**29.09.22**

Fachtagungen DST:

- Freiheit der Meere: Nachhaltige Sicherung der Seewege als Grundlage fairen Welthandels und der Versorgungssicherheit
- Schifffahrt – Ein umweltfreundlicher Verkehrsträger
- Nachhaltige Häfen: Gemeinsam, klar, sauber!

**30.09.22**

Große Schiffs- und Bootsparade von Bremen nach Bremerhaven  
Maritimer Dialog in Bremerhaven

**01. / 02.10.22**

Maritimes Wochenende in Bremerhaven

**02. 10. 2022**

Jubiläumsfeier »125+1« der Deutschen Seemannsmission am Standort Bremerhaven  
Abschlussgottesdienst des 36. Deutschen Schifffahrtstages

*Liebe Leserinnen und Leser*, aufgrund der Corona-Pandemie sind viele Konferenzen, Messen und Seminare abgesagt oder verschoben worden. Die aufgeführten Termine sind bislang noch gültig. Weitere Absagen sind möglich, für aktuelle Informationen besuchen Sie bitte die Webseiten der Veranstalter.

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INTERNATIONAL MARITIME JOURNAL

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worldwide conferences | exhibitions | seminars for shipping, commodities, finance

### Marine + Offshore

05.09.2022 HAMBURG  
MARITIME FUTURE SUMMIT  
[www.smm-hamburg.com/konferenzen/maritime-future-summit](http://www.smm-hamburg.com/konferenzen/maritime-future-summit)

06.–09.09.2022 HAMBURG  
SMM 2022  
[www.smm-hamburg.com](http://www.smm-hamburg.com)

07.09.2022 HAMBURG  
Maritime Start-Up Night 2022  
[www.maritimestartups.de](http://www.maritimestartups.de)

15.–16.09.2022 ROSTOCK  
7. Rostocker Großmotorentagung  
[www.rgmt.de](http://www.rgmt.de)

19.–20.09.2022 DÜSSELDORF  
The #P2X Conference  
[www.p2xconference.com](http://www.p2xconference.com)

16.–18.11.2022 HAMBURG  
STG-Hauptversammlung  
[www.stg-online.de](http://www.stg-online.de)

08.–10-11.2022 NÜRNBERG  
SPS  
<https://sps.mesago.com>

30.11.–02.12.2022 NEW ORLEANS  
International Work Boat Show  
[www.workboatshow.com](http://www.workboatshow.com)

07.–10.12.2022 SCHANGHAI  
Marintec  
[www.marintecchina.com](http://www.marintecchina.com)

10.12.03.2023 TALLIN  
Tallin Boat Show  
[www.meremess.ee](http://www.meremess.ee)

01.–04.05.2023 MIAMI BEACH  
Seatrade Cruise Global  
[www.seatradecruiseglobal.com](http://www.seatradecruiseglobal.com)

24.-25.05.2023 HAMBURG  
Schweißen in der maritimen Technik  
[www.slv-nord.de](http://www.slv-nord.de)

05.-09.06.2023 OSLO  
Nor-Shipping 2023  
[www.nor-shipping.com](http://www.nor-shipping.com)

### Shipping + Logistics

07.–08.09.2022 LÜBECK  
Shortsea Shipping Days  
[www.shortseashipping.de](http://www.shortseashipping.de)

29.09.2022 BREMEN/BREMERHAVEN  
Deutscher Schifffahrtstag 2022  
[www.deutscher-schifffahrtstag.de](http://www.deutscher-schifffahrtstag.de)

17.11.2022 HAMBURG  
HANSA-FORUM SHIPPING | FINANCING  
<https://hansa-online.de/hansaforum/>

28.03.–30.03.2023 STAMFORD  
CMA Shipping Conference & Exhibiton  
<https://informaconnect.com/cma-shipping>

### Commodities + Energy

29.08.–01.09.2022 STAVANGER  
ONS – Offshore Northern Seas – [www.ons.no](http://www.ons.no)

05.09.2022 MAILAND  
Gastech – [www.gastechevent.com](http://www.gastechevent.com)

05.–08.09.2022 ABERDEEN  
SPE Offshore Europe  
[www.offshore-europe.co.uk](http://www.offshore-europe.co.uk)

19.–20.09.2022 DÜSSELDORF  
The #P2X Conference  
[www.p2xconference.com](http://www.p2xconference.com)

27.–30.09.2022 HAMBURG  
WindEnergy  
[www.windenergyhamburg.com](http://www.windenergyhamburg.com)

12.–13.10.2022 ABERDEEN  
Floating Offshore Wind  
[www.renewableuk.com](http://www.renewableuk.com)

19.10.2022 BREMEN  
Hydrogen Technology Expo 2022  
[www.hydrogen-worldexpo.com](http://www.hydrogen-worldexpo.com)

18.–20.10.2022 ALEXANDRIA  
Mediterranean Offshore Conference  
[www.moc-egypt.com](http://www.moc-egypt.com)

18.–20.04.2023 SOUTHAMPTON  
Ocean Business  
[www.oceanbusiness.com](http://www.oceanbusiness.com)

## SPRECHTAG DER SCHIFFBAUTECHNISCHEN GESELLSCHAFT

### »Construction, Installation and Operation of Offshore Wind Platforms«

Durch die klimapolitischen Ziele der Bundesregierung kommen große Herausforderungen auf die deutsche Offshore-Industrie zu. Dies betrifft nicht nur den Bau und die Errichtung einer großen Anzahl von Windparks auf See, sondern auch deren Anbindung an die Stromübertragungsnetze an Land.

In den letzten zehn Jahren wurden bereits eine ganze Reihe von Anbindungen realisiert, deren Herzstück große HVDC-Konverterplattformen sind.

Die Weiterentwicklung dieser Plattformen sowie deren Installationsmethoden auf See werden einen Schwerpunkt des nächsten Sprechtagess »Construction, Installation and Operation of Offshore Wind Platforms« der

Schiffbautechnischen Gesellschaft (STG) bilden. Ferner werden mögliche, zukünftige Plattformen und Anlagen zur Speicherung von Energie sowie spezielle Fahrzeuge für den Offshore-Betrieb vorgestellt.

- Termin: 5. Oktober 2022
- Ort: Technische Universität Hamburg (TUHH), Am Schwarzenberg-Campus 4, Gebäude D
- Raum 2.022, 21073 Hamburg
- Anmeldungen bis zum 29. September und weitere Informationen unter [www.stg-online.de](http://www.stg-online.de)
- Die Veranstaltung beginnt um 09:30 Uhr und endet gegen 15:30 Uhr



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Der STG-Sprechtage findet am 5. Oktober bei der Technischen Universität Hamburg (TUHH) statt

Abeking & Rasmussen Schiffs- und Yachtwerft SE .....	Titel	Körting Hannover GmbH .....	99
Accelleron Industries AG .....	125	Kracht GmbH .....	128
Alphatron Marine Deutschland GmbH .....	4	Kraft Powercon Sweden AB .....	89
Andritz Hydro GmbH .....	139	LISCR (Deutschland) GmbH .....	48
Antti-Teollisuus Oy .....	137	Lloyd's Register EMEA .....	3
AUMA Riester GmbH & Co. KG .....	11	Loewe Marine GmbH & Co. KG .....	27
Bachmann electronic GmbH .....	59	MAN Energy Solutions SE .....	21
BIS Bremerhavener Gesellschaft für Investitionsförderung mbH	115	Marine Media .....	47
Blue Water BREB GmbH & Co. KG .....	145	Maximilian Verlag GmbH & Co. KG .....	90, 96, 114
Brombach + Gess GmbH Marine Glazing .....	91	Mecklenburger Metallguss GmbH .....	30
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1963 findet die »Schiff und Maschine« erstmals statt (li.). In den folgenden Jahren wachsen Besucherzahl und Exponate, wie das Bild von 1972 (re.) zeigt

## Schiffbautechnik in sechs Dekaden

Am 22. Mai 1963 fand in Hamburg erstmals der »Tag des Schiff-Ingenieurs« statt. Das aus diesem Event einmal die größte Schiffbaumesse der Welt hervorgehen würde, dürfte den Veranstaltern zum damaligen Zeitpunkt wohl nicht klar gewesen sein. Gründungsväter der Fachmesse SMM waren Mitglieder des Vereins der Schiff-Ingenieure zu Hamburg (VSIH), die erstmals eine Ausstellung namens »Schiff und Maschine« auf die Beine stellten. Diese begleitete damals den »Tag des Schiff-Ingenieurs«.

Rund 35 deutsche Aussteller präsentierten sich anlässlich der ersten »Schiff und Maschine« vom 22. bis 25. Mai 1963 auf dem Hamburger Messegelände im Park »Planten un Blumen«. Die Resonanz war durchweg positiv, sodass drei Jahre später erneut unter der Federführung des VSIH die zweite Ausstellung »Schiff und Maschine International« vom 6. bis 10. Oktober in der Hansestadt stattfand. Sie erstreckte sich, ob des großen Erfolges drei Jahre zuvor, bereits über drei Hallen, in denen sich 76 deutsche und ausländische Aussteller präsentierten. Doch nicht nur die Ausstellerzahl hatte sich im Vergleich zur ersten Veranstaltung mehr als verdoppelt, Gleiches galt auch für die Besucherzahl.

### Hamburg Messe und Congress steigt ein

Wegen des großen Erfolges wurde die Schiffbaumesse ab 1966 im Zweijahresrhythmus abgehalten. Da ein verhältnismäßig kleiner und ehrenamtlicher Verein, wie es der VSIH war, eine Veranstaltung dieser Größenordnung nicht mehr alleine organisie-

ren konnte, erfolgte eine Zusammenarbeit mit der Hamburger Messegesellschaft, die noch unter »Ausstellungspark Planten un Blumen« firmierte (seit 1972: »Hamburg Messe und Congress GmbH« / HMC).

1968 kam es bereits zu einem weiteren Meilenstein: Die Messe sprach mit der Fischerei eine weitere Branche an und nannte sich nun »Schiff, Maschine und Fischerei International«. 185 Aussteller nahmen teil, davon 24 aus dem Ausland. Es gab unter anderem einen Stand, an dem sich die damals führenden Schiffbaunationen Großbritannien und Norwegen gemeinsam präsentierten.

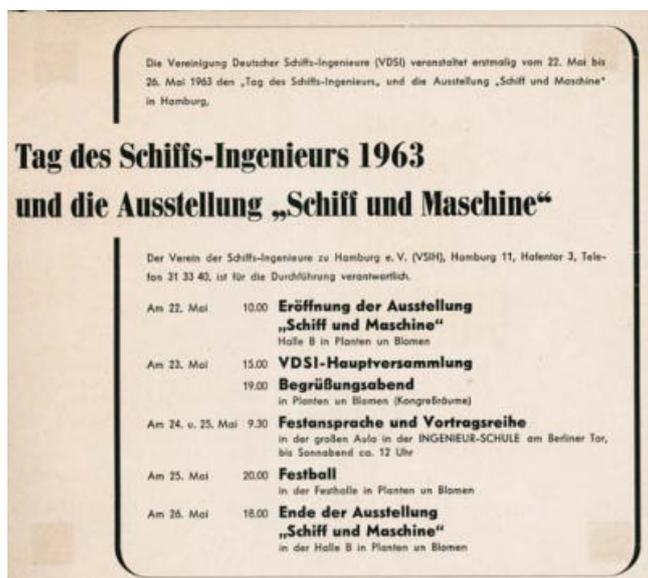
### Ausländisches Interesse

In den Folgejahren lockte die maritime Veranstaltung immer mehr Aussteller und Besucher aus aller Welt an. 1970 kam von den insgesamt 229 Ausstellern bereits fast jeder Dritte aus einem anderen Land.

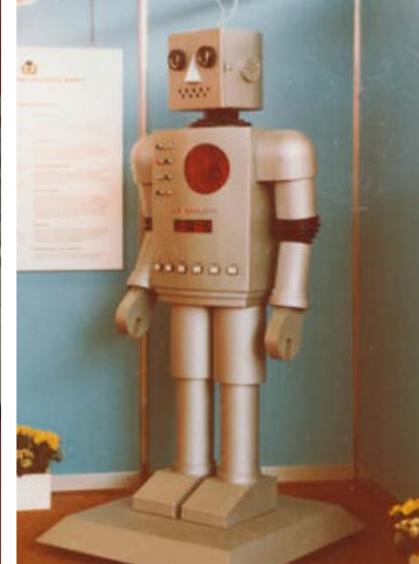
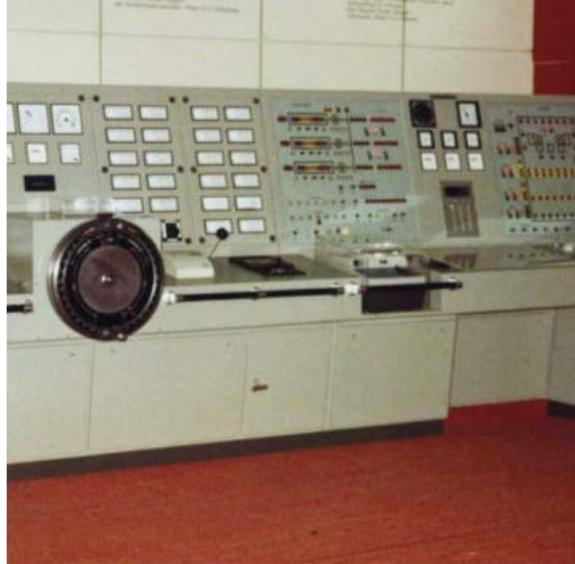
1974 firmierte die Ausstellung unter dem Namen »Schiff, Maschine, Meerestechnik International«. Erstmals war die Ausstellerzahl

(332) im Vergleich zur vorherigen Messe 1972 (391) jedoch rückläufig, was nicht zuletzt auf die Ölkrise zurückzuführen war.

Anders als zur Premierenveranstaltung 1963 war die Messe keine Nebenveranstaltung mehr, stattdessen wurde ein umfangreiches Rahmenprogramm um sie herum gebaut. Zudem gab es sogenannte Gemeinschaftsschauen, auf denen sich Unternehmen aus unterschiedlichen Herkunftsländern präsentierten. 1976 fand zeitgleich zur SMM die maritime Gewässerschutz-Fachausstellung »IOPPEC« statt. Dadurch hatten Messeteilnehmer die Möglichkeit, sich über den Schiffbau hinaus über maritime



Die Ausstellung »Schiff und Maschine« legt den Grundstein für die SMM



Die SMM-Besucher erwarteten fortschrittliche Ausstellungsstücke, aber auch einige Skurrilitäten

Themen zu informieren, was auf große Resonanz stieß. Die Messe steigerte nach und nach ihre Bedeutung für die Branche. Zusätzlich standen neben der SMM zahlreiche Fachforen auf dem Programm, beispielsweise »Intermaritec«, dessen Träger das Deutsche Komitee für Meeresforschung und Meerestechnik (DKMM) war, der internationale Kongress für Schiffbetriebstechnik »ICST« sowie erneut die »IOPPEC«, die sich mit Fragen zur Bekämpfung der Ölpest auf See befasste.

### 30.000er-Marke geknackt

Trotz der Krise in der maritimen Branche zu Anfang der 1980er Jahre überstieg die Besucherzahl der SMM 1982 erstmals die 30.000er-Marke. Mehr als 500 Aussteller präsentierten sich auf einer Fläche von fast 45.000 m<sup>2</sup>. Der positive Trend setzte sich zwei Jahre später fort. 1986 hatte die SMM erstmals mit China ein Partnerland. Die Partnerschaft lag nahe, da China schon damals der wichtigste Handelspartner des Hamburger Hafens war.

1988, als die Messe ohne Partnerland auftrat, gab es eine erneute leichte Schwächephase im Schiffbau, sodass sowohl die Zahl der Aussteller als auch die der Besucher zurückging. Bereits 1990 setzte jedoch ein kräftiger Aufschwung ein. Bedeutung und Resonanz der Hamburger Messe stiegen vor allem international weiter an. Allein von 1990 bis 1996 verdoppelte sich die Zahl der Aussteller nahezu und die Marke von 1.000 Anbietern wurde überschritten. Mehr als die Hälfte (54%) von ihnen kamen nicht aus Deutschland. Die Ausstellerfläche nahm im Vergleich zu den Vorjahren deutlich zu und betrug 1996 schon 54.678 m<sup>2</sup>.

### Aufstrebende Schiffbaunationen präsentieren sich

Längst präsentierten damals nicht nur die großen Unternehmen aus den Industrieländern ihre Produkte auf der SMM. 1996 nahm erstmals Indonesien teil, zwei Jahre später stellte sich Vietnam als aufstrebende Schiffbaunation vor.

Von 1990 bis 2002 wurden bei jeder Messe Partnerländer präsentiert, unter anderem waren dies Norwegen, Japan und die USA. China war 2002 zum zweiten Mal Partnerland der SMM. Weil die Messe aber ohnehin ein weltweiter Treffpunkt der Schiffbauindustrie geworden war, nahm der Veranstalter HMC anschließend von der Idee Abstand, Partnerländer zu gewinnen.

Im Jahr 2006 kamen von den 1.669 Ausstellern schon 1.050 aus dem Ausland. Zudem stieg die Zahl der Besucher innerhalb einer Dekade um über 13.000 auf fast 47.000 an. Zwei Jahre darauf, als der Aufschwung der Schifffahrt – insbesondere der Contai-

nerverkehre – einen Höhepunkt erreichte, verzeichnete auch die Messe einen Besucherrekord von 53.006 Gästen.

### SMM im Zeichen der Weltwirtschaftskrise

Die SMM 2010 stand bereits im Zeichen der Schifffahrtskrise. Der seit 1994 kontinuierliche Besucheranstieg konnte daher nicht fortgesetzt werden. 47.594 Teilnehmer bedeuteten aber noch immer die zweithöchste Gästezahl seit der Gründung. 1.996 Ausstellern aus 59 Nationen standen fast 89.000 m<sup>2</sup> Fläche zur Verfügung, was im Vergleich zum Boomjahr 2008 sogar ein leichter Anstieg war. In Ergänzung zu den elf Messehallen wurde aufgrund der hohen Nachfrage nach Ständen zusätzliche Ausstellungsfläche außerhalb der Hallen geschaffen.

Insgesamt wurden 150 Konferenzen, Workshops, Symposien und Pressekonferenzen auf der 24. SMM abgehalten. Dies verdeutlicht das stets weiter gewachsene Rahmenprogramm der Messe. 2010 fanden erstmals der Umweltkongress »gmec« und der »Offshore Dialogue« statt. Zum dritten Mal wurde das »Ship Finance Forum« ausgerichtet. 2012 kam die Sicherheitskonferenz »MS & D« hinzu.

Während der darauffolgenden SMM-Ausgaben erholte sich die Branche von der weltweiten Schifffahrtskrise. Sowohl 2016 als auch 2018 kamen mehr als 50.000 Besucher auf das Messegelände in Hamburg. Auch die Ausstelleranzahl war mit rund 2.200 ähnlich. Die ausgestellten Produkte und Dienstleistungen drehten sich aufgrund der strenger werdenden Emissionen und anderer Regularien vielfach rund um den maritimen Umweltschutz.

### 2020: Die SMM fällt erstmals aus

Im Jahr 2020 hatte die Corona-Pandemie die Welt fest im Griff. Aufgrund der ihrer Auswirkungen auf Großveranstaltungen und den internationalen Reiseverkehr konnte die Messe nicht wie gewohnt stattfinden und wurde auf den Februar des darauffolgenden Jahres geschoben. Doch auch Anfang 2021 war die Welt noch lange nicht zur Normalität zurückgekehrt. Weltweit stiegen die Inzidenzen, viele Länder befanden sich im »Lockdown«. Deswegen beschlossen die Organisatoren, die SMM ausschließlich als digitale Konferenz durchzuführen.

Bei der 30. Ausgabe der SMM in diesem Jahr trifft die maritime Branche nun endlich wieder in Präsenz in Hamburg aufeinander. Mit 2.000 Ausstellern und 40.000 Besuchern startet die SMM erneut durch. ■

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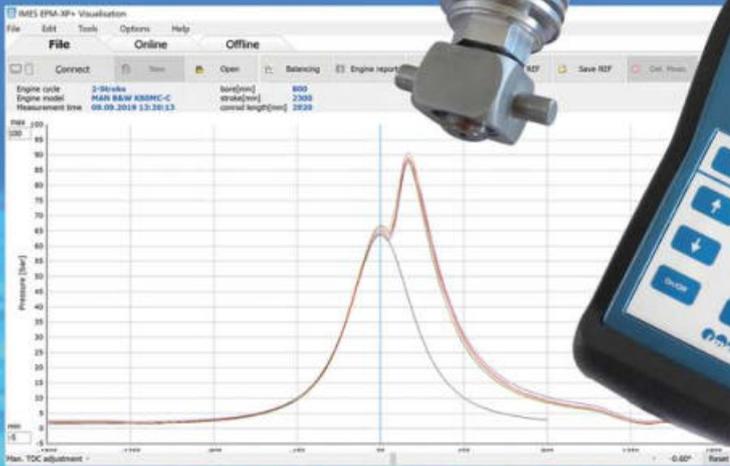


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