

ANALYZING

the Interconnected Factors that determine Port Efficiency

**A new Industry Guidance
– the Solution against
Confusion**

Henning Gramann

What is Maritime Safety ?

Mr. Neeraj Shukla

**Cleaning up the world's
shipping industry
Motor systems for hybrid
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Pallavi Naik

Editor-in-Chief

The Port efficiency is considered as a criterion for the Port Performance. The level of Contentment of the Shipper signifies the efficiency of the Port.

The Berth planning is the integral part since the disorganization of the same has the ripple effect on all the other elements involved in a Port call. Likewise, Vessels that have completed the cargo operations and are ready to leave the port also has to face the delays because of other Port operations. There are various reasons for the delays in the berthing process such as Weather, Shortage of Labors, Port Call Omissions, Peak Season, Incompetent Infrastructure at the Ports and many other.

Berth Planning plays essential role to allocate the resources for incoming and outgoing vessels. It helps to monitor and modify the port calls, keeps updated about the delays and helps to replan their berthing lineup. The use of Digitization of Berth Planning is now modernizing the operations and allowing to make the data-driven decisions to reduce the delays & the cost of operations and increase the capacity utilization.

The Port activities not only plays the vital role in the economic development of the nation but also has the accountability in the Political Position of the nation in the world. It is crucial to automate the Ports which will lead to increase the throughput.

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ANALYZING the Interconnected Factors that determine Port Efficiency

by Lucy (Kyoung-Suk) Lee
Terminal Business Consultant, CyberLogitec

Among the port/terminal productivity indicators presented by UNCTAD and the World Bank, berth waiting ratio and berth occupancy rate are included. As per CyberLogitec's influence analysis of Berth Waiting Ratio(BWR), Berth Occupancy Ratio(BOR), and Time Difference of Berthing(TDB) between planned berthing time and actual berthing time on terminal/port productivity based on the collected data from current operating terminal using OPUS Terminal, it's been found that changes in BWR and berthing schedule compliance rate result in a significant impact on the productivity.



Port Berthing & Working Time-wise Indicator

Indicator	Formula	Indicator Description
PORT TIME	$T_p = T_d - T_a$	The total amount of time a vessel spends at a port (from arrival to depart) T_a : ATA (Actual Terminal Arrival Time) T_d : ATD (Actual Terminal Departure Time)
SERVICE TIME	$T_s = T_d - T_{b1}$	The total amount of time takes for a vessel to arrive at the port and depart, regardless the presence of the loading/unloading T_{b1} : ATB (Actual Terminal Berthing Time) T_d : ATD (Actual Terminal Departure Time)
OPERATION TIME	$T_o = T_{wc} - T_{ws}$	The total amount of time from the moment STS initiates the first container to complete the last container work T_{ws} : AWS (Actual Working Start Time) T_{wc} : AWC (Actual Working Complete Time)
BWT (Berth Waiting Time)	$T_w = T_a - T_{b1}$	The total amount of wait time for a vessel to berth T_a : ATA (Actual Terminal Arrival Time) T_{b1} : ATB (Actual Terminal Berthing Time)
BWR (Berth Waiting Ratio)	$T_{bwr} = T_w / T_s$	The ratio of Berth Waiting Time(BWT) to Service Time T_w : BWT T_s : Service Time
TDB (Time Difference of Berthing)	$T_{tdb} = T_{b2} - T_{b1} $	Time Difference between scheduled berth time and actual berth time Index for berth schedule compliance rate T_{b1} : ATB (Actual Terminal Berthing Time) T_{b2} : ETB (Estimated Terminal Berthing Time)
BOR (Berth Occupancy Ratio)	$T_{bor} = T_s / D_a$	Vessel berthing time to number of berthing workable days T_s : Service Time D_a : Total number of berthing workable days

Among the newly developed services related to AI technology at the terminal, there's a provided service regarding Berth ETB (Estimated Time of Berthing).

As the difference increases between ETB and ATB (Actual Time of Berthing), it will decrease the terminal productivity and change BOR (Berth Occupancy Ratio).

Hence, many terminals are developing services to predict accurate ETB recently.

1. Berth Waiting Rate (BWR) and STS Productivity

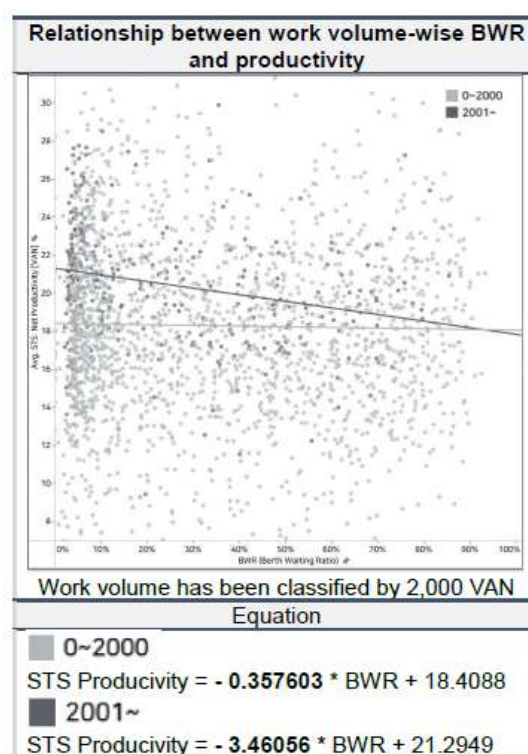
Berth Waiting Rate is a service competitiveness index

of berths at ports and terminals. According to UNCTAD, it is recommended to maintain BWR below 30%. As per OECD, the exemplary BWR is 10%. The average BWR for A terminal is 32.21%, and its BWR states the decreasing tendency as the vessel's work volume increases.

*UNCTAD = United Nations Conference on Trade and Development

▷Relationship between Berth Waiting Ratio(BWR) & Productivity

STS productivity has to decrease tendency as BWR increases. The tendency is more apparent when work volume exceeds 2,000 VAN, as per A terminal case study.



2. Schedule Compliance Rate for Vessel

TDB (Time Difference of Berthing) is the time difference between the estimated time of berthing (ETB) and the actual time of berthing (ATB) for a vessel. The schedule compliance rate for a vessel can be calculated by using TDB between ETB & ATB. By setting the TDB tolerance range to 40min, 60min, and 120min, the Effect of ETB compliance rate on the terminal's productivity can be found by comparing STS productivity when TDB is within the tolerance range and TDB is out of the tolerance range.

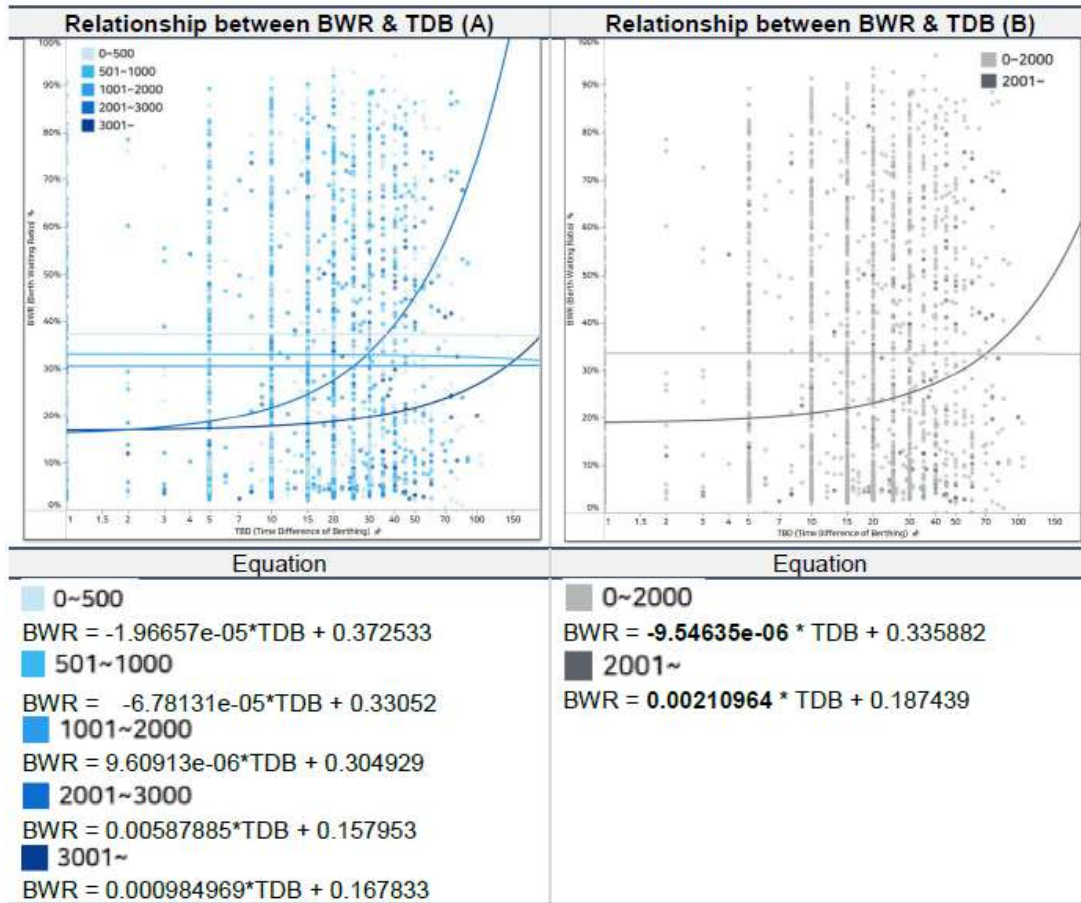
- TDB tolerance range-wise schedule compliance rate
- TDB tolerance range (40min) – 10.4% of all vessels are out of ETB
 - TDB tolerance range (60min) – 2.96% of all vessels are out of ETB
 - TDB tolerance range (120min) – 0.57% of all vessels are out of ETB

As per the vessel's productivity comparison between a vessel within ETB and a vessel out of ETB, the TDB tolerance range below 40min has a low impact on productivity, yet the TDB tolerance range above 60min decreases productivity in proportion to the time difference.

When TDB is set to 40 minutes, the productivity of the vessel out of ETB is reduced by 6.5%, 7.3% for TDB 60 minutes, and 28% for TDB 120 minutes.

Berth Waiting Ratio (BWR) according to the vessel's schedule compliance rate

When the loading/unloading work volume is above 2,000 VAN (BOX) and TDB between the estimated time of berthing and the actual time of berthing is more than 40 minutes, there is a significant increase in Berth Waiting Time (BWT).



3. Berth Occupancy Ratio (BOR) & Productivity

Berth Occupancy Rate derives from the vessel's service time and berth information. Herein, it is calculated based on the number of working days per month (No off, 365 days per year applied). According to the terminal operation policy, berth operation time is generally 360 to 365 days per year.

If Berth Occupancy Ratio (BOR) is too high, there's a high possibility that vessel congestion will occur hence which

would lead to an increase in Berth Waiting Time (BWT). Otherwise, the equipment productivity decreases when BOR is low.

The average Berth Occupancy Rate (BOR) for the berths in the entire A terminal is 70.4%.

- $BOR [T_{bor} = T_s (\text{Service Time}) / D_a (\text{Berth-wise workable days})]$.

▷ Berth Occupancy Ratio and STS Productivity

The average Berth Occupancy Ratio (BOR) of the entire berths is 70.4%, and the average STS productivity is 18.81 VAN. Berth productivity with more than 80% of BOR is

17.8 VAN which is 94.6% of average STS productivity. Comparing the productivity between 'Above BOR' and 'Below BOR', productivity decreases by 8.39% in the 'Above BOR' case based on the BOR standard of 80%.

Berth's STS productivity with more than 80% BOR decreases by less than 5% compared to average productivity.

BOR standard	Above BOR			Below BOR	
	STS Productivity	Productivity % to Average productivity	Productivity % to Below BOR	STS Productivity	Productivity % to Average productivity
60%	18.48	98.25%	95.55%	19.34	102.82%
70%	18.07	96.07%	92.48%	19.54	103.88%
80%	17.8	94.63%	91.61%	19.43	103.30%
90%	17.6	93.57%	91.10%	19.32	102.71%
100%	16.81	89.37%	86.87%	19.35	102.87%

Berth Waiting Ratio(BWR), Time Difference of Berthing(TDB), and Berth Occupancy Ratio(BOR) differ depending on vessel size, vessel volume, and shipping liners. Hence, each operating terminal is suggested to derive BWR, TDB, and BOR for establishing operation strategy and improving optimized logic.

OPUS Terminal considers the factors mentioned above to predict terminal operation and provides services that improve productivity.

The followings below are the result of customer terminal A's data analysis.

Terminal Performance Indicator	Terminal A's Result
BWR (Berth Waiting Ratio)	The average BWR is 32.21%, and it has decreasing tendency as the vessel work volume increases. If loading/unloading work volume exceeds 2,000 VAN, STS productivity decreases when BWR increases.
TDB (Time Difference of Berthing) Time Difference between ETB and ATB	When the time difference between the Estimated Time of Berthing(ETB) and the Actual Time of Berthing(ATB) is more than 40 minutes, it affects STS productivity. Productivity drops 6.5% when TDB is more than 40 minutes, 7.5% when it is more than 60 minutes, and by 28% when it is more than 120 minutes.
BOR (Berth Occupancy Ratio)	The average BOR for the entire berths is 70.4%. STS productivity decreases by 8.39% when BOR is above 80%.

STS productivity drops by 6.5% when the time difference between ETB and ATB(TDB) is more than 40 minutes and by 28% when it is more than 120 minutes.

To meet the Estimated Time of Departure(ETD), the Terminal operation team and its operating system could establish a strategy to input additional STS and share newly updated ETD to the shipping liner when scheduled vessel for work delays in berth.

Also, productivity decreases by 8.39% when BOR is above 80% in terminal A. Berth planning should be consider reduced productivity.

The value differs as per the terminal-wise berthed vessel size, throughput and operation condition, hence the strategy to apply the analyzed data immediately

and systemically is needed instead of its generalized application.

STS productivity is an operational result as well as significant reference value to establish terminal operation strategy. Based on historical STS Productivity, the terminal decides how many Yard Trucks, Yard Cranes and Gangs(Workers) to input for each vessel as well as its working time and calculates Estimated Time of Departure(ETD) for the vessel.

At the time of establishing operation strategy in view of STS productivity, considering the change in productivity according to TDB between ETB & ATB, and BOR values, a more accurate Estimated Time of Work (ETW) can be calculated, which can contribute to higher productivity by TOS logic optimization.



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A new Industry Guidance – the Solution against Confusion



Just recently, the *Industry Guidance to Ship Suppliers and Ship Owners on Materials Declarations for Inventories of Hazardous Materials* has been released. Jointly developed by associations of shipowners, suppliers, classification societies and others (i.e. ICS, BIMCO, ISSA), this guidance is supposed to guide the entire maritime industry through a complex and very often misunderstood as well as misinterpreted topic. Clarity is the only way to avoid heated debates between buyers, sellers, owners and service suppliers.

How significant this Guidance is becomes clear when knowing about its background.

The EU Ship Recycling Regulation (EUSRR) requires all ships above 500GT calling at EU ports to have a certified and maintained “Inventory of Hazardous Materials - Part I” (IHM) onboard. The IHM lists hazardous materials contained in structure and equipment of a ship for ensuring that ships can be recycled safely. The shipowner is responsible for the IHM including maintenance which means tracking of re-locations, removals and new installations of hazardous materials contained in products on hand of supplier documents. A task for the entire life of a ship. IHM-relevant order items need to be accompanied by Material Declarations (MD) and a Suppliers Declaration of Conformity (SDoC) issued by the supplier.

This is exactly where the confusion starts: what is an IHM-relevant order item? Every single order item of a

purchase order from a shipowner (and a shipyard in case of newbuildings) needs to be evaluated against a set of exemption rules. Any order item which is not exempted requires an MDs and SDoC from the suppliers. The challenge for suppliers is to collect information from their own supply chain for providing correct product data to ships for which they become fully liable. Each request from the buyer can cause hours or days of work for the supplier due to required collection of data from his supply chain for a single product.

Fierce discussions have erupted on application and scope of exemption rules. Lacking knowledge and sincerity plus mis-interpretations by some “service suppliers” are creating a situation where up to 90% of requests sent to suppliers are unnecessary! This makes IHM-Maintenance of ships an impossible task for all involved. Also suppliers can’t handle so many requests and might look for a fast but risky cure.

Major shipping and supplier associations jointly conclude that: “*Shipowners and service providers ... made MD requests ... in excess of what is required... . This has placed a ... burden on suppliers, and can make the maintenance of IHM by the owner significantly more complicated.*”

A solution for clearing up the myths and differences was needed. Several parties – as mentioned above – have joined forces to ending the confusion and creating a common understanding for avoiding that suppliers

Article

might use a quick fix which renders IHM less accurate over time and creating substantial risks for all.

The Industry Guidance provides unified interpretations and clear guidance for identification of relevant order items. With this, less than 5% of order items require related documents from suppliers which is also a major KPI for efficient IHM-Compliance.

GSR Services is very proud of having contributed to the development of this guidance and that it fully reflects their year-long understanding and practices. Efficient IHM-

Maintenance throughout the entire operational life of ships for owners and suppliers is the goal and well explained in the Industry Guidance.

Although an annoying and dry topic - if read and applied, this guidance is the argument against unjustified requests and map to efficient IHM-Compliance. It needs to be understood that a properly developed and maintained IHM is the basis for safe and sound ship recycling, the core aim of all ship recycling regulations and subject to control as well as certification.

Henning Gramann

Managing Owner
GSR Services GmbH



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What is Maritime Safety ?

Mr. Neeraj Sharma
HSE Professional

Maritime safety is the protection of the crew and passengers aboard vessels, as well as those living or working near bodies of water, from hazards and the risk of injury or fatality. An example of maritime safety according to the Occupational Safety and Health Administration (OSHA) is the provision of Personal Flotation Devices (PFDs), which aid in the recovery of Persons In Water (PIWs) who are at risk of hypothermia, drowning and even death.

Importance

Maritime safety is important because neglecting it can lead to unfathomable disasters such as the fatal tanker explosion of the Bow Mariner, the sinking of the Motor Ship (MS) Estonia, the MS Herald of Free Enterprise accident, and the sinking of the Royal Mail Ship (RMS) Titanic.

Aside from maritime accident prevention, another key reason why maritime safety should be prioritized is that it can actively help lower the risk profiles of ships. Ship risk profiles are used by the Paris Memorandum of Understanding (MoU) on Port State Control to determine the intervals between the required periodic inspections. A Low Risk Ship (LRS) can have an inspection interval of 3 years, while a High Risk Ship (HRS) may need to be inspected every 5 months.

The Paris MoU's New Inspection Regime (NIR), which includes ship risk profiling, applies to its 27 member states. These include, among others, Canada, the United

states. These include, among others, Canada, the United Kingdom, and most European countries. In the United States, a domestic vessel may fail the mandatory vessel inspection if there is any indication that the navigation of the vessel is unsafe.

Maritime standards

Maritime standards are the industry-accepted rules that govern maritime safety and security. These rules are enforced by the International Maritime Organization (IMO) as well as by other international, regional, or national organizations, associations, and agencies. Below are just some of the maritime standards in place today:

International Convention for the Safety of Life at Sea (SOLAS)

SOLAS is an international treaty that, according to the IMO, was created "in response to the Titanic disaster." Today, over 160 countries adhere to the current version, SOLAS 1974. It covers nearly all aspects of maritime safety, including:

- the construction of ships (i.e., subdivision, stability, fire protection, etc.);
- the provision of life-saving appliances such as lifeboats and life-jackets;
- the use of radiotelegraphy and radiotelephony (radio

communication); and

- the implementation of safety in navigation (e.g., in manning, routing, signalling).

SOLAS 1974 also has chapters dedicated to the carriage of grain, the carriage of dangerous goods, and nuclear ships.

On the other hand, the ISO 27991 standard is created to provide guidance on communicating between a Marine Evacuation System (MES) and the platform or survival craft it is attached to, as required by the International Convention for the Safety of Life at Sea (SOLAS) regulation III/6.4.4.

The Role and Importance of Safety in Maritime Transportation

Today, safety is a very important factor that affects all elements of maritime industry. However, safety

management and its implementation in the maritime industry are more important than ever. International legislation and regulations in shipping were rather scarce at the time of the Titanic tragedy. Present-day maritime industry has a number of codes, conventions and guidelines that set the boundaries of safety and efficiency in shipping. The development of maritime industry has resulted in the great development of technology, design, size, propulsion and safety of ships. Consequently, the development of new technologies in the maritime industry has brought changes in the education systems over the last few decades. After the Second World War the maritime education system has been evolving proportionally to the demands of the industry. Despite great breakthroughs in technology and safety at the workplace, the marine industry is still a relatively dangerous place to work.

OISD Standard on Marine Safety
OISD-STD-184 Standard on Life Saving Appliances

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Each year, industrial ships are responsible for consuming around 370 million tonnes of fuel. In fact, a single ship can emit as much carbon dioxide as two million cars. As a solution, electrified shipping is beginning to make waves. Exploiting improvements in battery design and automation from technology experts, the sector is estimated to reach a global value of \$16.2 billion by 2030. Smart Automation is among these trusted experts and recently supplied technology and power equipment from WEG for two hybrid vessels.

The Elias Johan and Bernt Oskar are two newly developed seiner vessels measuring 50.5m long and 12m wide. Developed by Vestværflet Aps, a Danish shipbuilder with shipyards in Denmark and Poland, the vessels are specifically developed to provide a greener method of maritime transport for the fishing industry, and will operate out of Norway.

Unlike traditional shipbuilding, developing hybrid or fully electric models requires significant differences in equipment and infrastructure. Smart Automation, a Norwegian expert in integrated automation and hybrid

power systems for ship makers, specialises in this growing niche.

Most hybrid ships have two methods of propulsion, the most common use a combination of diesel fuel and electric batteries. Depending on the vessel, diesel direct drive can be used at high power, and diesel electric or pure electric can be used at lower power. The common challenge of these systems is the space it requires on a vessel. In fact, to give you an idea of size, some recent retrofits of these systems are being installed inside large shipping containers for drop-in installation.

In a newly designed hybrid ship, reducing the footprint of the propulsion system is key to ensuring good ergonomics, as John Kåre Torkelsen, managing director of Smart Automation explains.

“Space is always an issue on shipping vessels, so it was key that our system choice did not have a negative impact on the room on board. For the Elias Johan and Bernt Oskar fishing vessels, we opted for a motor and generator that used a space-saving jacket cooling



system, as opposed to a coil.”

A jacket cooling system, sometimes referred to as a flow generator, is a system that ensures there is consistent water flow across the motor surface to keep it cool. The WGM20 jacket cooled motor from WEG — the equipment ultimately specified by Smart Automation — is specifically designed for minimum thermal dissipation and space saving.

The water jacket cooling system on the WGM20 motor consists of a water flow in a zigzag circuit throughout the frame. The cooling system has a degree of protection suitable for aggressive, reduced-space, or high-temperature environments — ideal for the unpredictable landscape of a fishing vessel. Crucially, the thermal exchange of the motor does not depend on the environment and allows several torque combinations with motor speed.

However, space and cooling are not the only considerations when specifying a motor for a hybrid vessel. Crucially, the project required a motor that could also operate as a generator to provide the main source of electrical power. Once in operation, the motor would actually only be used as an emergency take-me-home drive system, whereas the generator would be responsible for powering everything from lighting, HVAC and refrigeration, through to the navigational systems used to sail safely.

“From a design perspective, the WGM20 range has been engineered with longevity in mind,” explained Kristian Bugge Nikolaisen, Norwegian Business Development Manager at WEG Scandinavia. *“For instance, all WGM20 motor accessories, such as space heaters, water leakage detector and the terminal box, are securely concealed within the main frame and therefore are better protected.”*

“The WGM20 motors have an impressive ability to perform in aggressive environments,” continued Bugge Nikolaisen. *“In fact, for the marine industry, motors from this line can be supplied with specific certifications, including Lloyds, Bureau Veritas, ABS and DNV to ensure reliability.”*

The motor specified for the projects were two 1500 kW

models. However, the WGM20 line of motors can be supplied up to 2800 kW for a horizontal motor or 2000 kW for a vertical motor, available up to a 560 or 5100 (IEC) frame size respectively. The WGM20 line boasts a frequency of either 50 or 60 Hz and a potential voltage of up to 4,160 V depending on the motor’s size and application.

Importantly for installation on the Elias Johan and Bernt Oskar, the motors were supplied with IP55 and IP56 protection. This certification ensures the equipment is protected against high pressure water from any direction, dust ingress and immersion of between 15cm and one metre in depth.

In collaboration with the electric motor from WEG, both vessels use significant battery energy storage systems (BESS). This system stores energy from the motor when the vessel operates electrically, and will also charge when used in generator mode.

“Smart Automation has a long history of working with ship makers to deliver integrated automation, power management and power solutions on hybrid and all electric ship projects,” added Kåre Torkelsen. *“WEG was contracted to provide its expertise and guidance on selecting a motor/generator that would bring this project together and ultimately bring these hybrid vessels to life.”*

“The environmental impact of the shipping industry demands new solutions, and to meet this challenge, Smart Automation work with shipbuilders and owners to make shipping greener. We would certainly lean on WEG’s expertise to supply power equipment for a project like this in future,” concluded Kåre Torkelsen.

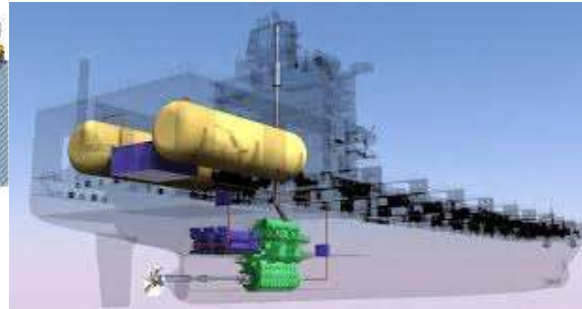
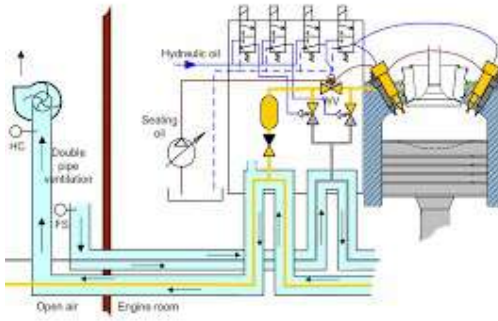
Global demand for electric and hybrid shipping vessels is growing exponentially. In fact, a report by IDTechEx suggests there are already over 100 manufacturers of electric ships around the world, manufacturing for everything from leisure to fishing and cargo.

While a reduction in carbon emissions from the world’s shipping industry is welcome, the manufacturers of these vessels must lean on industry experts to supply the right technology. The right motors, generators and automation will ensure these are safe, powerful and importantly, clean.



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- To create awareness on Future Fuels and latest developments in ME Engines.
- To refresh compliance with IMO Tier II and Tier III protocol, Marpol Annex VI Chapter 4 (GHG Emissions), Marpol Annex VI Regulation 13 NOx emissions, • ECA / SECA NOx, SOx, Particulate Matter emissions
- Appreciation of IGF Code and its requirements
- Decarbonisation initiatives - Paris Memorandum

Course Duration: 5 days

Number of Participants: Maximum 8

Course structure: Online Course with access to ME-GI Simulator from Cloud for hands-on experience and backed by Exercises, Assessments and Lectures.

Course Fees: Please contact the Academy

Course schedule: Course is planned to be held once every month in the 1st week of the month.



Grade A1 (Outstanding)



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 ASP Crew Management (India) Pvt. Ltd.	 Maersk Line Fleet Management and Technology India Pvt. Ltd.	 MSI Shipping Services India Pvt. Ltd.	 Synergy Maritime Recruitment Services Pvt. Ltd.	 Teekay Shipping (India) Pvt. Ltd.	 Pacific Manning Agency
 D'Amico Ships Ishima India Pvt. Ltd.	 Cenmar Maritime Agencies (India) Pvt. Ltd.	 Synergy Nordic Shipmanagement Pvt. Ltd.	 Apollo Crew Management India Pvt. Ltd.	 MTM Ship Management India Pvt. Ltd.	 MARITIME OSM India Crew Mgmt Pvt. Ltd.
 THOME India Pvt. Ltd.	 Eastaway (India) Pvt. Ltd.	 NORTH North Shipping Pvt. Ltd.	 Vigma Maritime Services Pvt. Ltd.	 MASSA Maritime Association of Shipowners, Shipmanagers and Agents ISO 9001:2015 E-mail - massa@massa.in.net Website: www.massa.in.net	 MSC Crewing Services Pvt. Ltd.
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ELECTROCHEMICAL PROTECTION OF MARINE FACILITIES.



Corrosion is one of the main reasons affecting reliability and safety of marine facilities. Corrosion protection is a crucial issue and should be considered based on an individual complex approach. In our case, marine facilities include vessels, port and berth facilities, off-shore structures, subsea and portside systems for production and transportation of hydrocarbons at sea.

Seawater is natural well-aerated electrolyte with a high electrical conductivity and saturated with calcium, potassium, magnesium salts, sodium sulfates, and chlorides. Due to a high chloride concentration, seawater aggressively affects submerged materials. Because of an electrical potential in the galvanic system “marine object - electrolyte”, we have a high level of electrochemical processes. It results in a dissolution of any materials in seawater, i.e. corrosion, which significantly reduces the lifetime of marine facilities.

Portside installations and energy infrastructure usually consist of ferroconcrete and steel structures. They can be shelf bottom-mounted, submerged, semi-submerged, gravity-driven, or piled. The vessel hulls are made of special shipbuilding alloys. The intensity of sea on the object material varies according to its location as follows:.

Zone 1 - surface area that is subject to wetting by seawater splashes. This is an atmospheric corrosion zone with unlimited oxygen access.

Zone 2 - variable humidification, the most dangerous in terms of corrosion. This zone is located between the upper and lower limits of possible fluctuations of the sea level.

Zone 3 - subsurface, located below the water level. This zone never comes into contact with atmospheric oxygen.

Physical corrosion of ferroconcrete in zones 1 and 2 is caused by alternating moistening and drying, or by alternating freezing and thawing. In both cases, the depositions of salts or ice formation take place in the pores and capillaries that causes destroying of a concrete. In addition, chemical exposure to seawater leads to the dissolution (leaching) of a cement stone in concrete structures. It results in a water penetration causing the corrosion of the reinforcement steel structures of the concrete objects. Corrosion of steel reinforcement structures in this case is of an electrochemical nature. In a dense concrete corrosion of steel reinforcement structures does not occur since a small amount of seawater in pores and cement stone create a protective oxide films on the reinforcement mesh. If the concrete

Article

is porous or has deep cracks, the protective film is being destroyed providing conditions for the starting electrochemical process of the reinforcement metal destruction by corrosion.

The durability of ferroconcrete sea structures is provided by dense, crack-free, corrosion-resistant concrete, and also by a correct selection of the protective concrete layer. The thickness and additives composition for the concrete protective layer is defined based on characteristics of the ferroconcrete structures and keep the structure integrity throughout the entire life cycle.

Corrosion of vessel hulls and sea structures in seawater has an electrochemical nature. Metal dissolves in a seawater because of transition of cations from metal to water, as from anode to cathode immersed in an electrolyte. In this case, the anode and cathode can be different parts of the same metal surface, and the electrolyte would be a surrounding seawater. The rate of corrosion is determined by the oxygen concentration, temperature, and salinity of the seawater, and largely depends on the speed of the seawater flow around the metal structures. At the same time, the intensity of corrosion depends on the chemical composition, metal surface condition after treatment, and varies widely. If we measure metal loss caused by corrosion per year, there will be 0,4-0,6 mm/year in zone 2 and it can reach 1,25 mm/year, and 0,06-0,15 mm/year in the subsurface zone

Corrosion protection of ship hulls and marine installations can be carried out by using corrosion-resistant alloys, coating of the metal surface with protective paintwork materials and cathodic protection. Using of corrosion-resistant alloys is a reliable but expensive method. A large number of corrosion protective coatings for marine facilities based on epoxy, coal, urethane, vinyl and other resins have been developed. Disadvantages are the short lifetime period and possibility of mechanical abrasion of the coating.

Cathodic protection of metal structures can be provided in two ways:

1. Impressed direct current from an external power source, in which the protected surface would be the cathode with negative pole connection to the source, and the anode would be a special built-in or suspended electrode connected to the positive pole and having a special low-soluble coating, mainly made of platinum group metals. In such a galvanic scheme, metal dissolution occurs at the anode, at the same time producing the film of low-soluble salts on the metal surface (cathode) which protects the surface from corrosion.

2. Protection by cathodic polarization, which is caused by constant electrical contact of steel surface with a metal possessing more negative potential - protector (sacrificial anode). It could be zinc, aluminum, magnesium or their alloys, which would be anodes. In

this galvanic pair, the metal structure is the cathode and therefore it does not corrode.

The advantages of the cathodic protection system include reliability, low cost, low operating costs, simple design and easy control.

If we consider each marine object as a system consisting of various components, the design of the corrosion protection system would be a system task, which could be resolved by a complex approach involving all methods, namely:

- Application of paintwork coatings in zones 1 and 2
- Installation of impressed current cathodic protection for zones 2 and 3.
- Application of sacrificial anodes for zone 3, in the areas where the impressed current cannot flow.

Such a comprehensive design of electrochemical corrosion protection of vessels and marine installations made of steel and ferroconcrete is fully implemented in the JSK "Corporation PSS", Perm, Russia.

For 30 years now, the company has been supplying electrical equipment for vessels oil and gas and energy-saving industries. PSS Corporation provides Russian and foreign partners with electrics, corrosion protection equipment for offshore and onshore objects, charging stations for electric vehicles, ready to share production technologies and to launch the production on abroad relevant producing capacity.



Mr. Andrey K. Burkov
Adviser of General Manager
Corporation PSS

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Dates: 21st to 23rd Febr.2023, 21st to 23rd March 2023; 18th to 20th April 2023, 23rd to 25th May 2023, 20th to 22nd June 2023
Time: 8:30am - 4:30pm

Course Fee: Rs.15000/- (per participant inclusive of Taxes) / Rs.13500/- For IME(I) Members (inclusive of Taxes)

Registration Link: <https://forms.gle/e4As7kCucR5xoJBm9>

Payment Link: <https://imare.in/buy-online.aspx>



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Should the bulk cargo industry containerize?



Capt. Melvin Mathews
CEO - Shallow Waterways Shipping



Historically, bulk cargo is transported globally from areas where it is produced, cultivated or mined to areas where it is consumed or enhanced in value. Over land bulk cargoes are transported mainly by railway wagons or trucks. Inland waterways and coastal shipping have also been used where it has been feasible and cost efficient.

Bulk carriers that are ocean going ships, generally carry homogenous bulk cargoes in their hatches. Some bulk carriers carry cargo one way and return empty to carry the same cargo again. When there is a change in the cargo to be carried, the cargo hatches are cleaned to avoid contamination.

The existing Containerized cargo industry on the other hand predominantly supports an East-West trade. It deals with finished goods, transported from manufacturing countries in the East to consuming countries in the West. The returning containers that are transported on large container ships usually being empty.

? So what is the argument for containerizing bulk cargoes? What advantages can be foreseen?

- Bulk carriers will no longer have to carry homogenous cargo in all the hatches.
- Multiple cargoes in containers can be carried on the same ship, both ways. This will dramatically increase their productivity and profitability.
- Ballast voyages which account for anywhere up to 50% will

Article

be eliminated, saving fuel & reducing unproductive emissions.

- There will be no need for ballast water exchanges since carrying ballast water may no longer be required.
- Cleaning of hatches when changing cargo will no longer be required if the cargo is Containerized.
- Light cargoes when carried in full hatches, do not get the ship loading to their relevant loadlines. In such cases, additional cargo in containers can be loaded on deck in tiers until the applicable loadlines are reached.
- Generation of particulate matter when loading and unloading bulk cargoes, using grabs and conveyor belts onto trucks, railway wagons and ships in ports, can be avoided completely.
- Containers once loaded and sealed shut at the mines, only need to be opened at the end customer.
- Grains loaded into containers and sealed at farms only needed to be opened at processing facilities.
- Open hatch loading and unloading of bulk cargoes will not have to be stopped due to adverse weather such as rain.
- Transportation losses, contamination, grain off speck and spoilage can be drastically reduced.
- Containerization will allow transshipment of bulk cargoes.
- Cargo can be tracked end-to-end with

embedded GPS chips on the containers.

- Container port bottle necks and congestions can be avoided as containers could potentially leave or arrive by bulk carrier ports too.
- Bulk carrier turn-around times in ports can be reduced from days to hours.
- Since the weight of each bulk container will be known, time consuming operations such as draft surveys can be avoided, especially in inclement weather.
- Instead of building warehouses and silos in different parts of the country for bulk cargo storage, containers can be used as mobile warehouses for storage that could be moved based on demand or in rapid response to a natural calamity.
- Significant reduction in cost and time while handling bulk cargoes during modal shift (road - rail - sea - air) can be achieved through bulk cargo containerization, impacting turnaround times across global supply chains.
- All cost and time spent in repetitive operations (weighment, heaping for bulk loading or warehouse storage for weather protection, etc) at modal shift can be totally eliminated.
- Any assurance of quantity and quality required for middle services en-route can be undertaken using initial documentation at the time of loading, sealing and weighment of the container.
- Containerization of bulk cargoes will not just save cost and time, but also significantly reduce risk and safety related incidents. Consequently this may not just avoid delays and detentions, but also lead to reduced insurance costs and claims.

With so many advantages, it appears that Containerizing bulk cargoes will be the right way forward to make bulk cargo transportation efficient, sustainable and environmentally friendly. The alternate is to continue to do what we have been doing for decades.

The advertisement is a collage of four images showcasing safety products. Top-left: A person wearing orange welding gloves using a power tool, with the text 'WELDING & HANDLING GLOVES'. Top-right: A person wearing green cut and impact gloves, with the text 'CUT & IMPACT GLOVES, SLEEVES' and the KEL logo 'WORLDWIDE SAFETY'. Bottom-left: A person wearing red chemical and oil protect gloves, with the text 'CHEMICAL & OIL PROTECT GLOVES'. Bottom-right: A group of four workers in different colored safety suits (yellow, orange, red, dark blue) and hard hats, with the text 'FR & ESD SLEEVES, WORKWEAR'. At the bottom, the company name 'SAWALKA KEL PVT LTD' is prominently displayed, followed by 'ADVANCED HAND PROTECTION SOLUTION' and 'For more details and product enquiry please visit WWW.SAFETYGLOVES.IN'. Two QR codes are also present.



The Steel cutting ceremony of two HS Eco freighter 7000 DWT Multi-Purpose Vessels by Cochin Shipyard Limited

Steel cutting ceremony of two HS Eco freighter 7000 DWT Multi-Purpose Vessels being built for M/s HS Service group Germany was held at Cochin Shipyard Limited (CSL) in first week of February 2023.

Shri Bejoy Bhaskar, Director (Technical) and Shri Sreejith K Narayanan, Director (Operations) of Cochin Shipyard Limited were present and did the honours.

Cochin Shipyard Limited is building Eight Multi-Purpose Vessels for M/s HS Service, Germany. This marks CSL's entry into the European Shortsea shipping and shipbuilding segment.

All the vessels, with an overall length of 110 meters and breadth of 16.5 meters, will be equipped for the carriage of project cargo, heavy cargo, steel coils, containers, dry cargoes, timber, paper and other bulk cargoes such as coal, grain and dangerous goods.

The vessels are designed by Groot Ship Design, Netherlands. ●

Udupi Cochin Shipyard Limited, the wholly owned subsidiary of Cochin Shipyards Limited (CSL), held the Keel Laying Ceremony of first 62 Tonne Bollard Pull Tugs being built for Ocean Sparkle Limited, the largest tug operator in India. Tugs are being built in collaboration with Robert Allan Limited, Canada.



The Keel Laying Ceremony of first 62 Tonne Bollard Pull Tugs being built by Udupi Cochin Shipyard Limited

Shri. Sanjay Kumar M Kewalramani, Chief Operating Officer, Adani Harbour Services & Ocean Sparkle Limited, Shri. Madhu S Nair, Chairman & Managing Director, Cochin Shipyard Limited, Shri. Harikumar A, Chief Executive Officer, Udupi Cochin Shipyard Limited and other dignitaries attended the Keel Laying Ceremony.

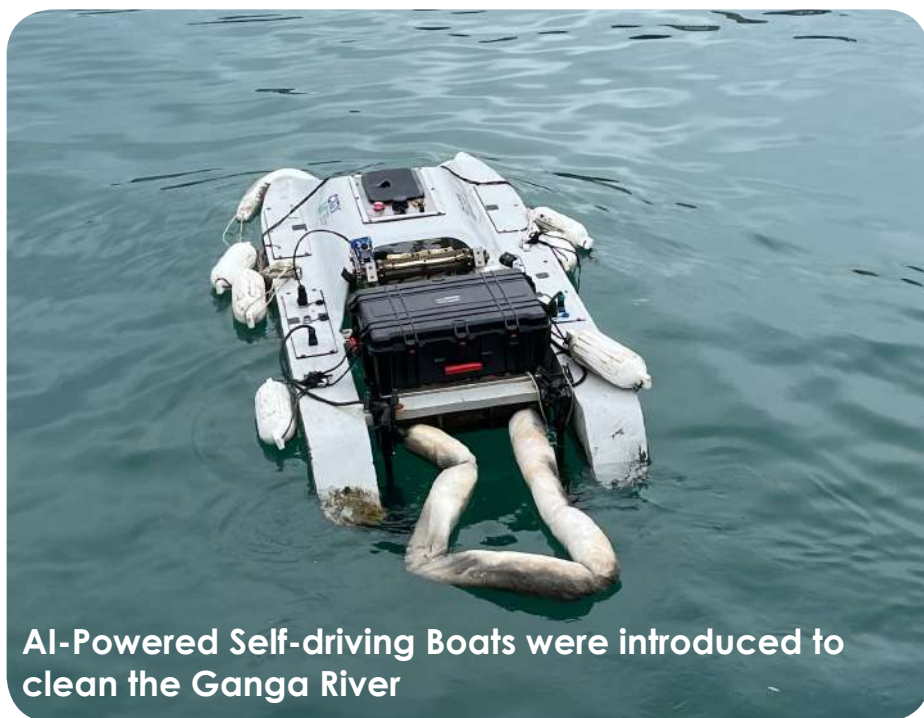
Vessels' length 33m, beam of 12.5m and draft of 4.5m, will be equipped with 65 Tonne Winches (Forward and Aft) and Towing hook of similar capacities, are the first of its kind being built as per the Approved Standard Tug Design and Specification developed by Government of India. ●

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AI-Powered Self-driving Boats were introduced to clean the Ganga River

Clearbot is a young startup that builds self-driving, electric boats which use artificial intelligence to navigate and conduct tasks in the water. These robotic boats are electric and solar chargeable, emission-free, and safer than sending humans into the water to conduct marine work - currently used to collect floating trash and hyacinth out of water bodies which is a massive problem in every part of our country.

The Ganga River, arguably one of the most revered and important rivers in the world, recently had a Clearbot system pilot where the machine was used to remove trash along the ghats of Varanasi. In Kerala, the Clearbot team has also started tackling the hyacinth problem with a specially designed-boat for this purpose.

The startup was inspired during a trip to Bali where the founders witnessed how local workers would take to the water every day in small boats to manually fish trash out of the sea. They quickly realized that this was a massive problem in most parts of the world as water pollution is rampant and scalable solutions are hard to come by. Clearbot's founders spent 2 years developing its patented technology which allows for the boat to be 100% self-driving and free of any pilot.

Their solution provides value by removing manpower requirements and cutting emissions and fuel costs all while generating higher data and transparency.

Using its self-driving capabilities, Clearbots can perform round-the-clock cleaning and monitoring without needing extensive people power, allowing the company to scale impact in vulnerable communities even with limited resources. It also uses artificial intelligence to generate valuable data within minutes - locations visited, trash collected, and other custom information. With a wealth of information, Clearbot and their partners' companies, governments, non-government organizations, and individuals' can track the origins of

marine waste and then tackle pollution at the source to prevent leakages from happening.

In the last year, the startup has scaled to more than 10 bots globally and has successfully expanded to India to clean up local rivers and waterways. They are also doing automated scanning, surveillance, and goods delivery services with their machines.

Clearbot is currently leveraging the support of CSR sponsors to help clean up the Ganga river in India and is looking to expand its partnerships to be able to cover more cities and water bodies. The startup hopes that if they are successful, they will help make environmental management smarter, safer, and more sustainable. ●

Missile Cum Ammunition (MCA) Barge, Yard 75 (LSAM 7) was launched by RAdm Sandeep Mehta, ACWP&A on 24 Feb 23 at Guttene Devi, launch site of M/s SECON, Visakhapatnam. With all major and auxiliary equipment / systems sourced from indigenous manufacturers, this Barge is proud flag bearer of "Make in India" initiative of Ministry of Defence.

Contract for construction of 08 x MCA Barge was concluded with M/s

Launch of First Missile Cum Ammunition Barge Yard 75 (LSAM 7) at M/S Secon, Visakhapatnam



SECON, Visakhapatnam, a MSME, in consonance with “Aatmanirbhar Bharat” initiatives of the Government of India. This Barge is being built with a service life of 30 years. The availability of MCA Barges will provide impetus to Operational commitments of IN by facilitating Transportation, Embarkation and Disembarkation of articles / ammunition to IN Ships both alongside jetties and at outer harbours. ●



Share of renewable energy in ports to increase by 60%: Shri Sarbananda Sonowal . Three Major Ports, Paradip Port, Deendayal Port & V. O. Chidambaranar Port will be developed as Hydrogen Hubs: Shri Sonowal added.

The consultative committee for the Ministry of Ports, Shipping and Waterways (MoPSW) had a discussion on ‘Green Port and Green Shipping’ today in Mumbai. During this meeting Shri Sarbananda Sonowal, Union Minister, MoPSW; Shri Shantanu Thakur, MoS, MoPSW; Shri Arvind G. Sawant, MP, South Mumbai; Shri Manoj Kotak, MP, Mumbai North East; Smt. Geetha

Viswanath Vanga , MP, Kakinada; Shri Sudhansh Pant, Secretary, MoPSW; Shri Rajiv Jalota, Chairman, Mumbai Port, Shri Sanjay Sethi, Chairman, JNPA; Shri Madhu S Nair, Chairman, CSL; Captain Binesh Kumar Tyagi, Chairman, SCI; Shri Rajesh Kumar Sinha, Additional Secretary, MoPSW; Shri Sushil Kumar Singh, JS, Ports, MoPSW shared their views.

Under the Green Shipping and Green Shipping initiative of MIV 2030 major ports have implemented and initiated various activities that would help in reducing the GHG (Green House Gases) emissions from the Port and Shipping sector and help in achieving the targets set by the Government for making the maritime sector green and sustainable. Activities like Shore-to-Ship power, use and promotion of electrically powered Port equipments, use of alternate fuels like LNG/CNG, Storage and bunkering facilities for environment friendly fuels like LNG, CNG, Hydrogen, Ammonia etc., transition towards renewable sources of energy including Solar Power, Wind Power, Tidal power etc. have already been initiated at many of the Major Ports of the country.

Shri Sarbananda Sonowal said “The Ministry for Ports, Shipping and Waterways intends to increase the share of renewable energy to 60% of the total power demand of each of its major Ports from a present share of less than 10%. The ports have also aimed to reduce Carbon emissions, per ton of cargo handled, by 30% by the year 2030. The Maritime Vision Document-2030, released by Prime Minister, is a 10 Year blueprint on India’s vision of a sustainable Maritime sector and vibrant blue economy”.

Shri Sonowal said as envisaged in the National Hydrogen Mission, Ministry of Ports, Shipping and Waterways has identified and nominated Paradip Port, Deendayal Port and V.O. Chidambaranar Port for developing them as Hydrogen Hubs, capable of handling, storage and generation of green hydrogen by the year 2030.

Ministry for Ports, Shipping and Waterways has undertaken green port initiatives in the major ports so that their environmental performance can be improved. The green port initiatives include acquisition of equipments for monitoring environmental pollution, acquisition of dust suppression systems, setting up of STP’s garbage disposal system for ports and ships, developing shore reception facility for wastes from ships, setting up projects for energy generation from renewable energy sources, providing shore power to ships at berths, creating Oil Spill Response (Tier-1) capabilities at all ports, taking actions to improve harbour water quality, inclusion of sustainable practices in terminal design, development and operation, increasing green cover within port premises etc.

In order to enhance the share of Green Shipping, various projects are being implemented by Cochin Shipyard Ltd., India’s largest shipbuilding and maintenance facility. These include green urban mobility solutions like Hybrid Electric Ferries, autonomous Zero-emission vessels, pilot project on Hydrogen Fuel Cell Ferry, Electric Catamaran Water Taxi, Hybrid Electric Ro-Ro, Hybrid LNG-Electric Inland Cargo Carrier, Hybrid Tugs, etc. The pace at which the Green initiatives are undertaken by the 12 major ports will surely bring a green revolution in the sector making the ports cleaner and greener, which is also a key component of ‘Blue Economy’, creating environmental benefits and balancing the investments and cash flow. ●



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AIR IN WORKPLACE
WITH POWERFUL
VENT IN-OUT AXIAL BLOWER

1. Hapag-Lloyd acquires a substantial stake in a leading private terminal and inland transport service provider in India.

2. Investment will strengthen presence in key strategic growth market India

Hapag-Lloyd signed a binding agreement today under which it will acquire 35 % of J M Baxi Ports & Logistics Limited (JMBPL) from a Bain Capital Private Equity affiliate. Additionally, Hapag-Lloyd AG signed a binding agreement with JMBPL and its promoters, the Kotak family, to subscribe to a capital increase by the company and raise Hapag-Lloyd's shareholding to 40 %. The contracting parties agreed to not disclose any financial details of the deal.

J M Baxi Ports & Logistics Limited is a leading private terminal and inland transport service provider in India. The operations comprise container terminals, a multi-purpose terminal, inland container depots, container freight stations and additional logistics activities, such as rail service offerings across India. The company employs around 5,400 staff and handles a combined container volume of approximately 1.6 million TEU. J M Baxi Ports & Logistics Limited recently won additional concessions for operating container terminals in Nhava Sheva and Tuticorin.

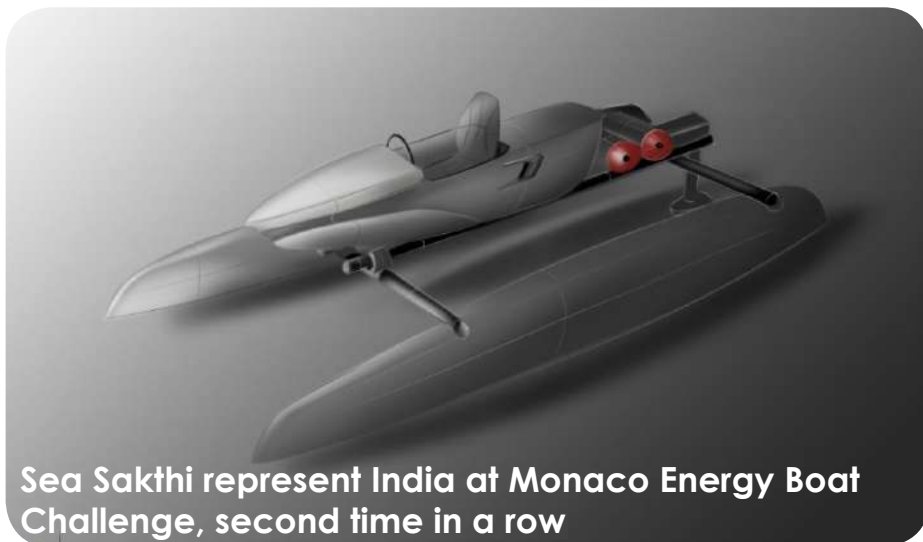


Hapag-Lloyd acquires share in J M Baxi Ports & Logistics Limited

“Terminal and infrastructure investments are a crucial element of our strategic agenda and India is one of our key growth markets. Acquiring a significant share in J M Baxi Ports & Logistics Limited will significantly boost our presence in India with a trusted local partner and it is another important step to build up our terminal and infrastructure business,” said Rolf Habben Jansen, CEO of Hapag-Lloyd.

In driving its Strategy 2023, Hapag-Lloyd has continuously expanded its involvement in the terminal sector, most recently through an agreement to acquire the terminal business of Chile-based SM SAAM. Hapag-Lloyd also has stakes in the Italy-based Spinelli Group, the JadeWeserPort in Wilhelmshaven, the Container Terminal Altenwerder in Hamburg, Terminal TC3 in Tangier, and Terminal 2 in Damietta, Egypt, which is currently under construction.

The closing of the transactions is subject to approval by the relevant authorities and to additional conditions customary for a transaction of this kind. ●



Sea Sakthi represent India at Monaco Energy Boat Challenge, second time in a row

Kumaraguru's Team Sea Sakthi represent India at Monaco Energy Boat Challenge, second time in a row

Team Sea Sakthi from Kumarguru College of Technology (KCT) to represent India for the second time in the Monaco Energy Boat Challenge (MEBC) 2023. Organised by the prestigious Yacht Club De Monaco (YCM), MEBC 2023 is set to happen this year from 3rd-8th July.

The Monaco Energy Boat Challenge, a one-of-a-kind challenge, aspires to promote green innovation in the Yachting Industry. It encourages

NEWS & UPDATES

students and researchers to build a boat emphasizing zero-emission propulsion and sustainability.

With no prior experience in marine systems and ocean technologies, Team Sea Sakthi, the marine arm of Kumaraguru Institutions had managed to build an electric catamaran last year. The Catamaran weighing less than 310kgs primarily powered by Lithium-Ion batteries and secondarily powered by solar panels.

The team scripted history by becoming the first and only Indian team to take part in the MEBC. The team secured 6th position globally in the energy class. It also won the Communication Prize for being the most Popular Team in the contest.

With over 20 Nations converging to create, innovate and present the future of marine transport, Team Sea Sakthi is ready to conquer the Monaco Waters again for the second time.

The energy boat is undergoing transformational changes as Team Sea Sakthi is venturing into Hydrogen Fuel Cell Technology with a strategy of winning the race for a sustainable future.

“This will make the energy boat India’s first Hydrogen Powered Catamaran and also, would open doors for the students in the institution and region to venture into alternate energy storage systems,” S Kiranlal, Assistant Professor at KCT and representative of Team Sea Sakthi.

He further added that Team Sea Sakthi, this year is also developing its own azimuth type high speed electric propulsion system, named “Propel-sona”. This propulsion system of Sea Sakthi would be the first azimuth type electric propulsion system to be introduced in the Indian market.

At the moment, Team Sea Sakthi, is engaged in the fabrication phase and is manufacturing a monocoque type natural fibre fabricated cockpit under 20kgs.

Anjana Prasad, Propulsion Analyst of Team Sea Sakthi said the team had no prior knowledge and experience in the marine systems and alternate energy storage systems just about a year ago. Now it holds a sub team that expertise in marine propulsions and fuel cell technologies.

“Team Sea Sakthi holds a lot more for the Monaco Energy Boat Challenge 2023, because the Team believes, this is a race, we must win for a better and liveable tomorrow”, she said.

Sponsorship:

Team Sea Sakthi is currently slaying in the boat manufacturing phase and more engaged in seeking for the Patrons/ Sponsors for this extensive project because fabricating an Energy boat enriched in new advancements with some initial costs is obviously not a plain sail.

About the logistics, the team faces a big challenge as it would cost 15-20 lakh to transit the cockpit to Monaco and back and the total expenses for the project starting from registration, component purchase, building the boat, logistics, travel, and accommodation for the students at the event would be nearly 55 lakhs.

Team Sea Sakthi is looking for partners and sponsors to associate and by understanding these attributes align with the objective and vision of sponsoring companies. Team Sakthi invites to join them as the upriser by sloping upwards the team which is striving for its Country’s victory and for a sustainable future. ●

The facility has been built with an investment of EUR 18.5 million and will cater to domestic and export markets. It has three production lines with a capacity of 50,000 metric tonnes per annum.

Skretting – Nutreco’s global aqua feed division- has opened a state-of-the-art production facility for shrimp and fish feed in Mangrol, Surat. The newly set up high-end facility is part of Skretting’s commitment towards the Indian aquaculture sector and its strategy to further develop in Asia.



Skretting India launches state-of-the-art shrimp and fish feed facility in Surat

The facility was inaugurated on February 13, 2023, by Dr. Sanjeev Balyan, Hon’ble Minister of State of Fisheries, Animal Husbandry and Dairying. Mr. Michiel van Erkel, Agriculture Counsellor for India and Sri Lanka, Embassy of the Kingdom of the Netherlands was also present at the opening. Spread over an area of 20,000 sq mt and built

will cater to both shrimp and fish cultures. The shrimp cultures will include white tiger and black tiger, while fish cultures will include Indian major carps, and high-value fish like snakehead, seabass, among others.

The Mangrol facility has three production lines with a production capacity of 50,000 metric tonnes per annum. It can produce both extruded/floating and pelleted/sinking feed as per the requirement of the species and customers. There is also adequate land and infrastructure available to increase the production capacity in the future.

“We are thrilled to announce the launch of our state-of-the-art production facility at Mangrol in Surat. We have been meeting the needs of shrimp hatcheries, nurseries, and farmers since 2018 in India, and supporting customers across feed-farm-health with our high-quality feed and services. The new facility enables us to contribute our bit to the prestigious Atmanirbhar Bharat – Make in India initiative, while simultaneously improving the efficiencies for a closer connect with our customers. We will cater to the domestic market and also customers in Bangladesh, Sri Lanka and The Middle East,” said Dr. Saurabh Shekhar, General Manager – Nutreco South Asia.

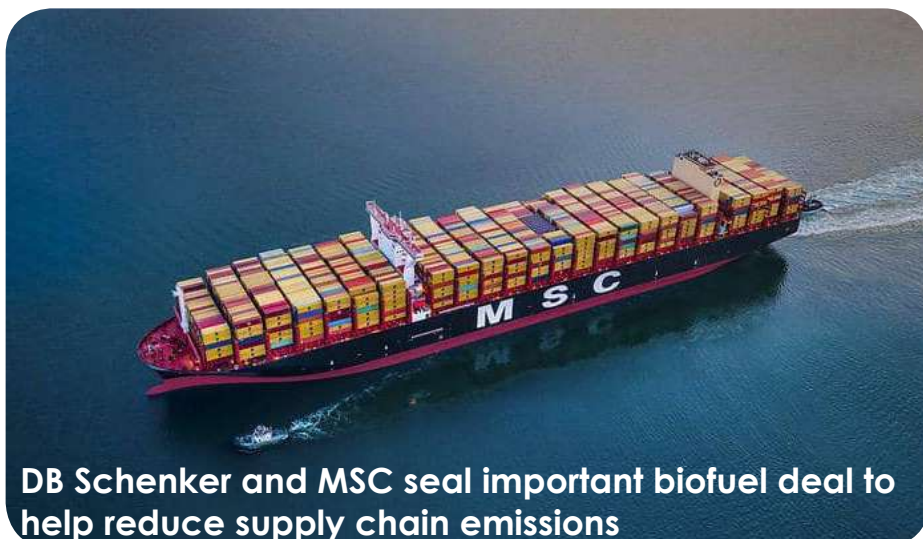
“The factory is key to achieving our purpose of Feeding the Future in growth territories of Asia and India. We already have plants in Vietnam, Japan, China, and Indonesia to strengthen our presence in Asia and establishing a state-of-the-art production facility at Mangrol, Surat reinforces our commitment to South Asia and Indian markets. Construction of the factory started in September 2020, and the work was completed in just over two years despite the various challenges posed by the Covid pandemic. The facility has also generated local employment opportunities with 120 employees. This is just the beginning in our journey to gain a stronger foothold here,” said Mr. Jurriën Zandbergen, Managing Director, Nutreco Asia.

“The factory is key to achieving our purpose of Feeding the Future in growth territories of Asia and India.”

Jurriën Zandbergen, Managing Director, Nutreco Asia

Nutreco has both organic and inorganic growth plans to expand its footprints in South Asia, actively looking for companies that can support the purpose of Feeding the Future via NuFrontiers, its strategic innovation and investment department. Through NuFrontiers, Nutreco has invested strategically in start-ups globally, including Internet of Things (IoT) enterprises such as Eruvaka and Stellapps .

“We strongly believe that innovation and digitalisation are the future for sustainable development in aquaculture. That is why we invest EUR 20 million annually on innovation looking for nutritional solutions to address the main challenges in the different regions in which we operate. At the same time, our digitally enabled solutions like AquaSim and Skretting 360+ have been responsible for improving production and transforming aquaculture industry in countries like Ecuador. With this facility and our stronger footprints, we only aim to replicate some of these success stories in India as well,” said Ms. Therese Log Bergjord, CEO Skretting. ●



DB Schenker and MSC seal important biofuel deal to help reduce supply chain emissions

(reefer containers), from MSC Mediterranean Shipping Company, the world’s largest container line.

First-of-its-kind agreement between a freight forwarder and a shipping line • At least 30,000 standard containers (TEU) will be transported on the world’s oceans with net-zero emissions in 2023 • Certified sustainable, second-generation biofuels are helping to decarbonize ocean freight.

DB Schenker is expanding its green ocean freight services and has secured an arrangement to use 12,000 metric tons of biofuel component for all of its own consolidated cargo, less-than-container load (LCL), full-container-load (FCL) and refrigerated containers

The amount of biofuel purchased is enough to save an additional 35,000 metric tons of CO2 equivalents (CO2e) along the entire production chain (well-to-wake) in the market. The equivalent of around 30,000 standard containers (TEU) may be shipped with net-zero CO2 emissions, depending on how the fuel is used during navigation.

The purchase agreement signed this month represents one of the largest carbon-insetting biofuel deals between a freight forwarder and a shipping company. It sets out the use of certified sustainable, second-generation biofuels - derived from used cooking oil - instead of conventional fossil-based marine fuel. The 12,000 metric tons of biofuel component will be blended between 20 and 30%, resulting in approximately 50,000 metric tons of blended biofuel

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to be used in MSC's container ships. The agreement allows DB Schenker to offer its customers an off-the-shelf product that enables net-zero ocean transport.

Certified emission reduction for customers' carbon footprint

This partnership is the latest impressive example of DB Schenker's commitment to clean logistics and is another solid contribution to increasing the demand for alternative fuels in the industry. Similar to net-zero flights using sustainable aviation fuel (SAF), customers can now book regular net-zero ocean transport and receive an annual certificate of their emission reduction for their carbon footprint. The latter means that every metric ton of biofuel is bunkered in addition to any legal mandate and carrier's set fuel purchase orders.

Thorsten Meincke, Global Board Member for Air & Ocean Freight at DB Schenker: *"Together with MSC, we are offering our customers a convenient and clean solution using the latest generation of marine biofuel to help them achieve a real additional reduction in their emissions. We are doing this because we firmly believe it is the right thing to do and are therefore paying for biofuel purchases in advance. One thing is certain: the more customers demand climate neutrality throughout supply chains, the faster we achieve clean container ocean freight."*

Caroline Becquart, Senior Vice President of MSC: *"Decarbonizing ocean freight cannot be achieved by a single player and requires collaboration between shipping and logistics companies and their customers. MSC Biofuel Solution is our first certified carbon insetting program that reduces emissions in our customers' supply chains, accelerating the energy transition by creating demand for net-zero-carbon shipping and delivering direct CO2 savings. We're delighted to partner with DB Schenker, with whom we share similar climate ambitions along our collective journey to net zero."*

Biofuel can be used for regular ocean freight operations without adjusting a ship's infrastructure or supply chain, making it a particularly convenient solution. MSC Biofuel Solution is designed to be a win-win approach to move from ambition to action. MSC bunkers sustainable biofuel, and clients benefit from the CO2 savings, passing them on throughout the shipping value chain. This differentiates the program from carbon offsetting initiatives that focus on future emission reductions outside the shipping industry. ●

Keel laying of Second ship (BY 524, Malwan) and third ship (BY 525, Mangrol) of Anti-Submarine Warfare Shallow Water Craft (ASW SWC) (CSL) project was presided by R Adm Sandeep Mehta, ACWP&A and R Adm I B Uthaiyah, DG WDB, respectively on 21 February 2023, in presence of Shri Madhu S Nair, CMD, CSL and other senior officials of Indian Navy and CSL at M/s Cochin Shipyard Limited (CSL), Kochi. With all major and auxiliary equipment/systems sourced from indigenous manufacturers, these ships are the proud flag bearer of "Make in India" initiative of Ministry of Defence.



Keel Laying of Second Ship (By 524, Malwan) and Third Ship (By 525, Mangrol) at Cochin Shipyard Limited

Contract for construction of eight ASW SWC vessels was concluded with M/s Cochin Shipyard Limited (CSL), Kochi, in consonance with "Aatmanirbhar Bharat" initiatives of the Government of India. These ships are being built with a service life of 25 years. The availability of these vessels will provide sub-surface surveillance in coastal areas with the purpose of detecting and neutralizing underwater threats. With an investment of EUR 18.5 million, the facility will cater to both shrimp and fish cultures. The shrimp cultures will include white tiger and black tiger, while fish cultures will include Indian major carps, and high-value fish like snakehead, seabass, among others. ●

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For more details

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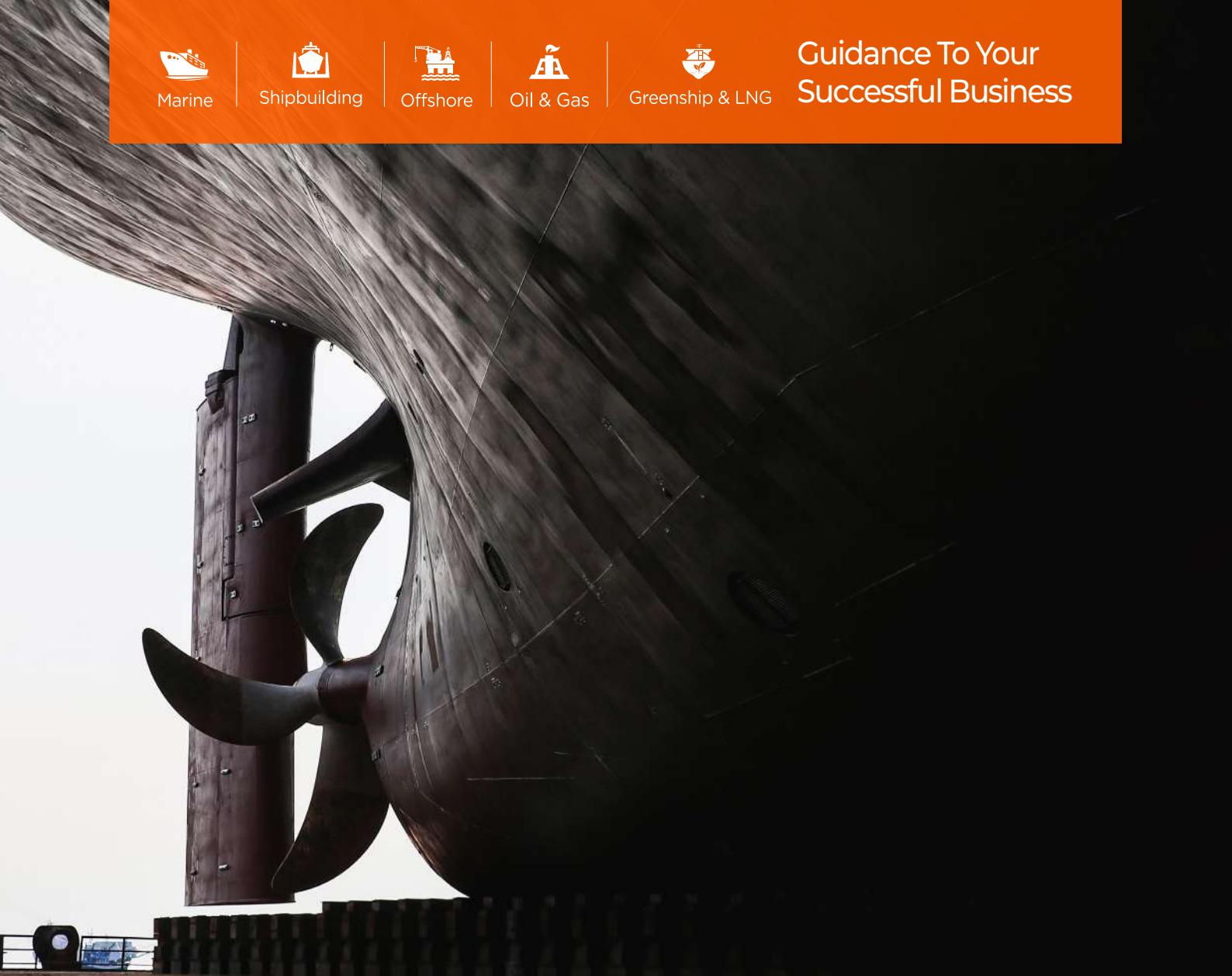


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