



# Newsletter

October 15<sup>th</sup> 2018

*Link road, rail, sea!*

Council Of Intermodal Shipping Consultants

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**October 15<sup>th</sup> 2018**

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## PORTS AND TERMINALS

### PORT PLANNING FACES INCREASING CHALLENGES

The most competitive box ports of the future will be those that accommodate developments in container shipping effectively, while successfully adapting to developments in the hinterland, according to a new report.

The Container Port Strategy report, from the International Transport Forum at the Organisation for Economic Co-operation and Development, found that effective port planning required a thorough understanding of the way the needs of shippers were likely to develop in the future.

“This sounds self-evident, but all too often port planners and policy makers have little knowledge of the main exporters and importers using the port, and the related cargo flows,” the report said.

Port planning has often been mainly a question of timing when to phase in expansions, with projections based on the extrapolation of past trends, but this model’s time has ended, according to the report, which is based on a round-table held in Buenos Aires, Argentina, in 2017.

“Some ports have already developed long-term planning frameworks that include scenarios in which cargo volumes decline.

Conversely, structural reforms can drive a step-change increase in the volume of trade.”

The increasing size of containerships and the volumes of cargo that need handling has put huge stress on equipment and labour and led to high idling rates between ship arrivals.

This in turn increases the need for flexibility in port labour forces and for pooling arrangements between terminals.

Larger ships also require deeper and larger access channels, longer and stronger quay walls and bigger cranes.

Larger yard capacity is required to deal with peak traffic and to provide buffer capacity in the connection with hinterland transport.

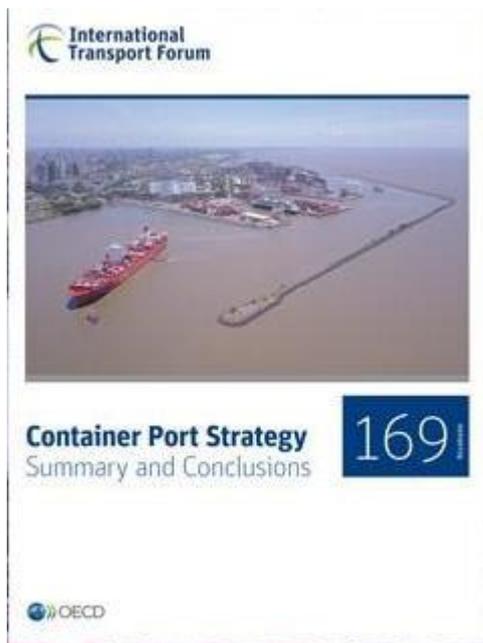
“This requires a lot of space,” the report said.

“Terminal operators, port authorities and hinterland transport companies have to respond and often taxpayers cover the cost.

Shipping companies reap benefits from the larger ships but are not responsible for many of the associated costs.

Consequently, the total supply chain costs of larger ships may surpass the cost savings for shipping companies.”

Increasing ship size has accelerated the trend for concentration among shipping lines, with a combination of horizontal and vertical integration that could lead to a freight transport system with very limited choice for shippers, the report warned.



“This challenges the regulatory capacity of even the largest economies to address potential issues of abuse of market power. A review of the legal frameworks that provide antitrust exemption for conferences and alliances appears due.”

In its recommendations, the ITF port planning should be driven by demand and flexible.

“Port planning should consider a full range of potential scenarios for trade and containerisation,” it said.

“Uncertainty implies that capacity expansion should be designed to be as modular and flexible as possible.”

Public policy tended to focus on developing large hub ports, often seeking to expand transshipment.

A thorough assessment of costs and benefits for transshipment ports was warranted, considering the small transshipment margins and the large costs of transshipment ports that are covered, usually, by the public purse. “Not all ports can be hubs and feeder ports are often more efficient,” the ITF said.

“As shipping becomes increasingly concentrated around a smaller number of hubs, feeder ports will become more prevalent worldwide. Relocation of container ports to non-urban areas can be a viable option, but optimal decisions are very much case-specific and require a solid analysis of market prospects and the costs and benefits involved.”

*(from: lloydsloadinglist.com, October 4<sup>th</sup> 2018)*

## MARITIME TRANSPORT

### MAERSK COMPLETES NORTHERN SEA ROUTE TRIAL PASSAGE

Ice-class container vessel Venta Maersk has successfully passed through the Northern Sea Route in a one-off trial passage that Maersk Line said “went according to plan”, arriving in St Petersburg last Friday after a 37-day voyage.

Venta Maersk, one of Maersk Line’s new Baltic feeders, embarked on her voyage on 22 August 2018 from Russia’s port of Vladivostok.

The route included further stops in Vostochny Stevedoring Company and Busan, before passing through the Bering Strait on 6 September 2018 on her way to Bremerhaven.

“We are very happy to welcome back crew and vessel safe and sound after this unique voyage,” says Palle Laursen, chief technical officer at Maersk.

“The trial allowed us to gain exceptional operational experience, test vessel systems, crew capabilities and the functionality of the shore-based support setup.”

Maersk said the voyage went “according to plan and without specific incidents”, noting: “The vessel and all systems aboard performed well in the unfamiliar environment.”



While the passage is feasible around this time of the year and marked by a lack of obstructive ice, ice conditions in the East Siberian Sea required assistance by icebreakers.”

The line said it had “taken different precautionary measures to ensure that the trial was done with the highest considerations for the safety of crew, cargo, environment, and vessel”.

During the trial, Maersk has been in close and regular dialogue with the Northern Sea Route Administration and icebreaker companies; and the crew

underwent special training and was joined by Northern Sea Route certified ice pilots during the entire transit.

Maersk underlined that this was a one-off trial designed to gain operational experience in a new area and to test vessel systems.

“Currently, we do not see the Northern Sea Route as a viable commercial alternative to existing east-west routes,” said Laursen.

“In general, we plan new services according to trading patterns, population centres and our customers’ demand.

That said, we do follow the development of the Northern Sea Route.

Today, the passage is only feasible for around three months a year, which may change with time.

Furthermore, we also must consider that ice-classed vessels are required to make the passage, which means an additional investment.”

Maersk Line’s new Baltic feeders are among the world’s largest ice-class vessels designed specifically to operate in cold waters, down to -25 degrees Celsius, where an ice-class stronger hull is required to offer year-round operations.

They have a nominal capacity of 3,596 TEU and are equipped with 600 reefer plugs.

Venta Maersk is the fourth of seven sister vessels and was delivered in July.

Her already-delivered sister ships are deployed in the Sealand (formerly known as Seago Line) Baltic feeder network.

*(from: lloydsloadinglist.com, October 1<sup>st</sup> 2018)*

## RAIL TRANSPORT

### **RASTATT ONE-YEAR ANNIVERSARY: WHERE ARE WE NOW?**

On the 12th of August 2017, water and soil penetrated part of the new Rastatt tunnel in Germany.

As a result, the ground subsided and the railway tracks above the tunnel warped.

The line between Karlsruhe and Basel was closed for all traffic until 2 October 2017 – one-and-a-half month later- causing significant damage to the industry.

“Never again must the closure of a small stretch of railway line lead to such chaos and wide-reaching economic damage”, said the lobby organisations in a joint statement.

*Where are we now?*

Since the Rastatt incident all sides of the rail sector have committed to tackling the main challenges facing rail freight.

A major milestone was the adoption of English as the main language of communication between infrastructure managers and railway undertakings during international disruptions.

At least one English speaking dispatcher in national traffic control centres will be guaranteed in every shift from 2020.

“Off the shelf” rerouting options and traffic management scenarios that minimise disruptions are being prepared, including information on technical parameters and other operational requirements.

“This will help to keep trains running in the event of disruptions.”

*Decision-making*

From now on, one infrastructure manager takes the lead in case of a disruption.

This party must coordinate the international cooperation and manage the available international re-routing capacity.

Relevant re-routings and mitigation decisions should be taken within the first 24 hours.

Within 36 hours of an incident taking place, a rough indicative timetable should be provided.



Moreover, new rules regarding the allocation of capacity on disrupted lines have been formed.

These rules guarantee a share of capacity between annual timetable traffic and ad-hoc traffic.

All these improvements are meant to be adopted by infrastructure managers from the start of the 2019 Timetable.

This was concluded in the European Handbook for International Contingency Management (ICM), published on 23 May 2018.

### *Steps to be taken*

ERFA, NEE and UIRR believe these changes are a good step in the right direction.

However, further actions are needed, they state.

Contingency management procedures for incidents that last less than three days should be developed.

Disruptions of a short duration can also have a negative impact on the quality of rail services offered, the parties believe.

“Off the shelf rerouting options should include an estimation of the capacity of trains that can be absorbed.

Where the re-routing options provide insufficient capacity and are technically and/or operationally incompatible, investment in the infrastructure and in the single European rail network should be identified as a priority.”

### *Simplified language requirements*

The parties also plead for lowering the current B1 level language requirement for train drivers and moving towards English as the main operational language for rail at a much faster pace.

They suggest considering screen-based technical solutions to effectively address the problem of communication between traffic controllers and train drivers, and the replacement of telephone conferences and complicated communication chains by digital communication.

The parties point out that apart from the plans outlined in the ICM, railway undertakings should also identify and put in place their own contingency management plans to ensure back-up options in the event of disruptions.

“The new rules should be used as an opportunity to improve coordination and management of traffic disturbances.”

*(from: railfreight.com, October 2<sup>nd</sup> 2018)*

## ROAD TRANSPORT

### TRUCKING 'AT CROSSROADS' BETWEEN RISING CO2 EMISSIONS AND ZERO CARBON ROAD FREIGHT

The European trucking sector is at a crossroads and must make a choice between CO2 emissions climbing 10% over the next decade or taking a pathway towards zero carbon road freight, stronger economic growth for Europe and better energy security.

This is one of the main conclusions of a new report, *Trucking into a greener future*, released recently by a consortium of stakeholders in the energy and trucking sectors, which includes DB Schenker and Geodis, and also from civil society, convened by the European Climate Foundation.

Heavy duty trucking accounts for 22% of the EU road transport emissions, while making up less than 5% of the vehicles on the road, the report notes.

In May this year, the European Commission presented a legislative proposal for the first-ever CO2 emission standards for heavy-duty vehicles in the EU.

This set targets for average CO2 emissions from new lorries in 2025 and 2030 which are 15% and at least 30% lower respectively than in 2019, the latter being an indicative target, subject to review in 2022.



The report contends that while the gradual introduction of fuel efficiency technologies and electric and hydrogen-fuelled propulsion systems will increase the upfront capital costs for hauliers, this will quickly be offset via lower spending on diesel, reducing the overall cost of road freight services.

"Even for advanced systems such as Battery Electric Vehicles (BEVs) and Fuel-Cell Electric Vehicles (FCEVs), the Total Cost of Ownership (TCO) can be very competitive compared to diesel vehicles over five years," it claimed.

Commenting on the issues highlighted in the report, DB Schenker's vice-president, Global Innovation, said that transport was the only sector in which

Europe's CO2 emissions are now higher than in 1990 and was becoming a significant burden to Europe in meeting its climate obligations as set out in the Paris Climate Agreement.

"Policy is increasingly focused on transport emissions and cities are implementing bans on fossil fuel vehicles while increasingly conscious consumers are demanding low-carbon services, making diesel truck delivery a burning platform.

The logistics business needs to reinvent its value chain to cut local and global emissions and take advantage of new business models presented by an electric fleet and smart charging networks," he underlined.

*(from: lloydsloadinglist.com, September 27<sup>th</sup> 2018)*

## AIR TRANSPORT

### WILL FREIGHT FLY WHEN THE PILOT IS A ROBOT?

It perhaps comes as little surprise that investors in companies such as ATSG and Atlas don't appear too worried about the pilot shortage and labour negotiations.

According to this Bloomberg article, bank analysts are becoming increasingly excited about the prospect of single-pilot freighter aircraft, leading to a \$15bn cost benefit – and, no doubt to autonomous planes (a \$35bn better bill).

While the story is likely to be different on the passenger side, it has some political backing in cargo.

Pilots, however, have different ideas, calling anything less than two pilots "catastrophic".

Aerospace and innovation have gone hand-in-hand since the days of Orville and Wilbur Wright.

\* \* \*

Airplanes were once simple metal tubes powered by propellers.

Long-haul flying meant four engines and at least three pilots on the flight deck at all times.

Today, aircraft require only two pilots and are built mostly of carbon composites.

Even on the longest routes — more than 17 hours — regulators permit airlines to fly with merely two engines.

Given the inexorable nature of technological evolution, it seems logical to expect that soon only a single pilot will be required.

And beyond that, given the advent of driverless technology on the ground and unmanned aircraft above, could pilotless commercial airliners be far off?

A range of companies, from such aerospace giants as Boeing Co. and Airbus SE to tiny startups, are working on various aspects of a difficult puzzle: how to

create the next generation of air travel — one whose pilots are far less ubiquitous and new flying vehicles communicate with each other.

More important, how is that world to be as safe as the one we're in now?

"It is not as complicated as it sounds, and it is not as dangerous as it sounds," said Elpert Hodge, executive vice president of M2C Aerospace Inc., a New England startup working to build a flight system for single-pilot commercial aircraft operations.

The startup hopes to meet airlines' desire to cut costs while addressing a pilot shortage that's already curtailed air service in some regions.

The technology to achieve this is likely to be available soon.

The comfort level of regulators and average citizens will almost certainly lag.

"How do we maintain levels of safety that we enjoy today ... when you've got an artificial intelligence-based system in the cockpit?" Greg Hyslop, Boeing's chief technology officer, said in September at a conference at the Massachusetts Institute of Technology.

"How do you show and certify that to be safe to the point where the flying public would say, 'Yes, I trust that.'"

Airlines are reluctant to even broach the topic, given how passengers may react to being one stricken pilot away from an empty cockpit.

And they are more so when it comes to fully automatic aircraft: "It's certainly not anything that American is working on or trying to make happen," Doug Parker, chief executive of the world's largest airline, American Airlines Group Inc., said of autonomous aircraft at an industry forum Sept. 12.

"The comfort [pilots] provide is not something that most consumers are going to want to forgo."

But for the air-cargo industry, where package containers don't require safety assurances, the prospect of single-pilot operations — and eventually autonomous flight — holds a definite appeal, especially in areas where air cargo growth may outpace pilot supply.

"Clearly, for transporting cargo, you could see autonomous aircraft," Hyslop said.

"It's going to be much longer, if ever, if we'd see that for passenger travel, though."

That doesn't matter to Wall Street.

Airline analysts are already counting the billions of dollars in savings airlines could reap by culling humans.

“Long-haul commercial flights could see reduced cockpit crews from 2023, shortly after cargo planes,” analysts at UBS Group AG wrote in an extensive July report.

They estimated a profit potential of \$15 billion for flying with a single pilot and \$35 billion if airplanes were to fly themselves.

None of this is as far-fetched as it might seem.

Adoption of new technology in aviation has risen significantly over the past few years, according to the UBS report.



The analysts conceded, though, that they expect “consumer acceptance to be a challenge.”

Surveys by the bank found that 63 percent of people oppose flying in a pilotless aircraft, while only 52 percent were averse to single-pilot planes.

Then again, what did people think of autonomous cars just a few years ago?

A key component of airline automation will be AI.

As the technology spreads into areas from cars to factories to electronics, more consumers are apt to grow comfortable with it.

“There is a percentage of millennials who have no problem with that,” said Hodge, a former pilot.

“So as much as you can demonstrate the safety of it, that’s what brings the public along.”

Throw in some cost savings and safety concerns begin to dissipate: the same UBS survey found that 50 percent more people would fly in a single-pilot aircraft if it came with a ticket discount.

The topic has garnered interest in Washington as well.

The House version of a budget bill this year funding the Federal Aviation Administration included language that would start a “research and

development program in support of single-piloted cargo aircraft assisted with remote piloting and computer piloting.”

The measure, which was stripped from the compromise bill signed into law Oct. 5, was introduced by Texas Republican Lamar Smith, chairman of the House Science, Space, and Technology Committee.

He sought to address concerns regarding major Chinese investments into AI and autonomous flight, according to a committee staffer.

The Cargo Airline Association, which represents carriers such as FedEx Corp. and United Parcel Service Inc., wasn't involved in the House bill, said Steve Alterman, the association's president.

While the CAA doesn't have a position on the idea, pilot associations do: they're aghast.

“Having anything less than two [pilots] is inviting catastrophe,” said Lee Collins, president of the Coalition of Airline Pilots Associations, which represents more than 30,000 pilots, including those at American Airlines Group Inc. and UPS.

“This technology is neither mature nor proven yet to the extent that it can ensure safety,” Collins said, adding that autonomous piloting systems are “a terrorist hijacker's absolute dream come true.”

Tim Cannoll, president of the Air Line Pilots Association, the largest U.S. pilot union, echoed his concerns in a recent column: “Single-piloted operations should be totally unacceptable to the American public because they are unsafe.”

Pilots argue that aviation requires human judgment in the cockpit to respond to the myriad unexpected events that can befall a flight.

And while pilots and their unions have a vested interest in maintaining the two-pilot system, they have ready examples to drive home their point.

Several pointed to the engine explosion aboard a Dallas-bound Southwest Airlines Co. flight in April that killed a passenger.

It left a hole in the side of the Boeing 737-700's fuselage, but the pilot was able to land in Philadelphia with no further injuries.

Air travel, goes the common refrain, is the safest form of transport.

Over the past 12 years, technological advances have been accompanied by a remarkable increase in safety all while traffic volume doubled.

Globally, carriers will fly an estimated 4.4 billion passengers this year, according to the International Air Transport Association.

Crashes are rare.

In the U.S., there were no airline fatalities from 2009 to 2018 — a period of time encompassing almost 100 million flights.

In many respects, modern aircraft are already automated to the degree that pilots spend a lot of time monitoring instruments while the plane flies automatically.

But you'd be mistaken if you were to assume this makes them superfluous.

It's true that a Boeing 787 or Airbus A350 offers tools that a pilot from the 1980s could only dream about.

It's also true that the world's airspace is more congested and complex than it's ever been.

American, for example, requires that each plane in its fleet conduct an autopilot approach and automated landing at least once every 60 days.

The policy doesn't apply to American's Boeing 737s, which operate with a different system.

The aircraft flies the approach according to the path programmed into the flight management system (FMS), following all speed and altitude restrictions and optimizing the descent.

Instruments guide the aircraft to touchdown and braking.

The autopilot disengages once the aircraft slows to taxi speed.

These systems are typically used when visibility is extremely limited and weather is unfavorable.

As a passenger, you'll probably never know when your aircraft lands itself; pilots rarely announce the occasions.

This technology, which is employed with two pilots are monitoring its performance, increases an airline's ability to operate in conditions in which a human would be less capable.

People get to their destinations, fewer flights are canceled, and the nation's economy avoids the costs of delays.

But — and this is the key point pilots make — they can intervene at any time to override the machine's decisions during the approach and landing.

Hodge's company, M2C Aerospace, is located about 40 miles west of Boston in the town of Milford, Massachusetts.

It wants to become a market leader in devising a flight management system (FMS) for commercial aircraft that doesn't require two pilots, he said.

M2C plans to begin simulator testing early next year, followed by test flights with an ATR turboprop aircraft flying from Antigua, his home country — and whose government is among M2C's investors.

"My thinking to get the FAA on board is being able to demonstrate safety for two years, no mishaps," said Hodge, a former pilot and entrepreneur who founded cargo carrier Elan Air and later sold it to DHL Express.

M2C is also working to raise \$15 million to fund its FMS project, which Hodge predicts will see sales of \$500 million in two years and \$1 billion within five years.

Memphis-based FedEx has expressed interest in purchasing space on an eventual Caribbean single-pilot cargo operation, Hodge said.

A FedEx spokeswoman declined to comment.

"Aviation is getting there," he said.

"It's not if, it's when."

*(from: theloadstar.co.uk/bloomberg.com, October 10<sup>th</sup> 2018)*

## LAW & REGULATION

### **HAPAG-LLOYD ESTABLISHES MARINE FUEL RECOVERY (MFR) MECHANISM**

Environmental regulation and costs from low-sulphur fuel represent a major challenge.

New MFR allows causal, transparent and easy-to-understand calculation of fuel oil costs.

With a stricter International Maritime Organisation emissions regulation (IMO 2020) coming into force as of 1 January 2020, the new sulphur cap for compliant fuel oil will be lowered from 3.5% to 0.5%.

This new regulation will significantly improve the ecological footprint of the shipping industry, and the majority of all vessels are expected to be operated with low-sulphur fuel oil by then.

Using low-sulphur fuel oil will be the key solution for the shipping industry and Hapag-Lloyd to remain compliant.

Furthermore, it is the most environmentally friendly solution in the short term.

At the same time, the utilisation of the compliant low-sulphur fuel oil comes along with an increase in fuel costs, which experts estimate to initially amount up to 60 billion US dollars annually for the entire shipping industry.

On the assumption that the spread between high-sulphur fuel oil (HSFO) and low-sulphur fuel oil (LSFO 0.5%) will be 250 US dollars per tonne by 2020, Hapag-Lloyd estimates its additional costs being around 1 billion US dollars in the first years.

Therefore, a Marine Fuel Recovery mechanism was developed, which will be gradually implemented from 1 January 2019 and replace all existing fuel-related charges.

“We embrace the level playing field and environmental improvements resulting from a stricter regulation, but it is obvious that this is not for free and will create additional costs.

This will be mainly reflected in the fuel bills for low-sulphur fuel oil, as there is no realistic alternative for the industry remaining compliant by 2020.

With our MFR, we have developed a system for our customers that we think is fair, as it allows for a causal, transparent and easy-to-understand calculation of fuel costs," said Rolf Habben Jansen, Chief Executive Officer of Hapag-Lloyd.

The MFR is based on a formula that combines consumption with market prices for fuel oils:

<b>MFR</b> (x TEU)	<b>=</b>	<b>Fuel price</b> (x TO)	<b>x</b>	<b>Fuel consumption (TO)</b> <b>Carried TEU</b>
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It takes into account various parameters, such as the vessel consumption per day, fuel type & price (specific for HSFO, LSFO 0.5% and LSFO 0.1%), sea and port days, and carried TEU.

These parameters derive from a typical representative service in the market on a specific trade.

The MFR also takes price fluctuations better into account, as it comes along with an improved coverage of upward and downward developments of market price changes for fuel oil.

Overall, it aims for transparent calculation of costs.

Furthermore, Hapag-Lloyd is thoroughly analysing other technological options for the reduction of emissions that might be able to cover a small share of a fleet.

This is why trials with a LNG conversion of one ship as well as Exhaust Gas Cleaning Systems (EGCS) on two others will be conducted in the year 2019.

MFR samples for standard dry containers at different fuel prices for selected trades:

<b>MARINE FUEL RECOVERY (MFR) PER TEU FOR DIFFERENT FUEL PRICES PER TONNE*</b>			
<b>Trade</b>	<b>USD 400</b>	<b>USD 525</b>	<b>USD 650</b>
East Asia – North Europe	182	223	264
East Asia – North America East Coast	221	271	321
North Europe – North America East Coast	152	168	184
East Asia – North America West Coast	117	144	171
East Asia – South America West Coast	210	271	333
North Europe – Indian Subcontinent	115	140	164

\* Market price assumptions for HSFO or LSFO 0,5%. Also includes LSFO 0,1% under the assumption its market price is 660 US dollars.  
 Note 1: The same MFR applies to both directions.  
 Note 2: The sample calculation is only indicative and is based on currently available market data..

(from: [hellenicshippingnews.com](http://hellenicshippingnews.com), October 9<sup>th</sup> 2018)

## PROGRESS & TECHNOLOGY

### **UNIVERSAL CARGO SYSTEM – AN ALTERNATIVE TO CONSTANTLY BIGGER SHIP SIZES AND HUGELY EXPENSIVE INVESTMENTS IN PORTS**

FREBS Marine International Ltd believes that its "Universal Cargo System" concept of a semi-submersible mothership/feeder barge system for any type of cargo offers a more productive, cost-effective and "greener" alternative to building bigger and bigger ships requiring massive investments in port infrastructure, handling equipment and landside connectivity.

The FREBS Universal Cargo System (UCS) concept - Freeland Rapid Express Barge Systems – is the brainchild of Michael Freeland, who has worked on ships for the Royal Fleet Auxiliary supplying the Royal Navy worldwide.

Freeland's ideas were once described by the Ministry of Defence as "too futuristic," but as he points out, semi-submersible dock ships are in widespread use today in a number of sectors – military, offshore, heavy project cargoes, yacht transportation, etc.

Spending billions of dollars on bigger ships and extending ports to cope with them is not the answer, Freeland is convinced.

UCS can reduce the need to build and expand ports and docks, ensuring savings in land use and avoiding major capital dredging and ongoing maintenance dredging.

It solves the problem of congestion in major sea ports, provides faster turnaround time and reduces port handling costs.

It is an entirely modular system: the FREBS mothership can be configured for panamax, new-panamax (NPX) or post-NPX size, and the shallow draft, float-in/float-out barges it carries in transoceanic voyages can be increased in number and/or size accordingly.

The larger version of the mothership, for example, would be bigger than anything sailing the ocean today, providing ultra-low slot costs transoceanically, but its self-propelled barges could access many ports in a range, avoiding the need for transshipment in a base port using giant cranes on heavily reinforced quays, avoiding feeder costs and, depending on location, overland transportation costs.

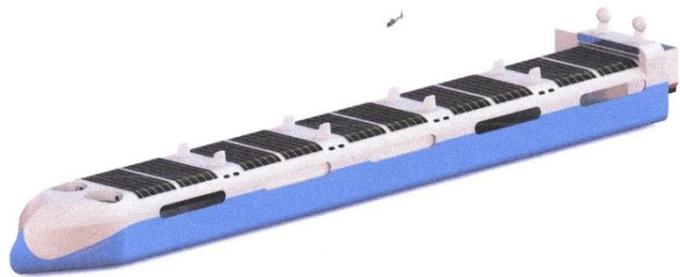
The barges would serve exactly like feeder ships today, but without the need for transshipment.

The barges, say up to 600 TEU in container version, could access any inland river port without the need for transshipment to barges or rail in the sea port.

Think, for example, of the potential savings in time and money along the Rhine corridor.

Think of all the money and political controversy that could be avoided in Hamburg by never having to deepen or widen the Elbe Fairway again.

How about avoiding congestion in Felixstowe by sailing up the River Orwell to Ipswich?



Freeland, who is based in Hampshire gives a local example of where he believes his UCS could score.

Southampton is the UK's biggest new vehicles export port, and has 100 acres of expensive port land devoted to the business, but even so it needs to build upwards.

Earlier this year ABP announced an investment of £15M to its eighth multi-storey garage to create storage space for another 3,000 vehicles (this contract has just been awarded to Morgan Sindall Construction & Infrastructure, by the way, and will take nine months to complete).

He argues that multi-deck FREBS ro-ro barges could be used to hold cars and other rolling loads in relatively small graving docks, while service frequency for exports would be unaffected.

This solution would be less expensive and free up port land.

The system's modularity means that the barges can be configured for any type of cargo – containers, rolling loads, bulk of any kind, logs, timber, and so on.

At all times the cargo is inside the hold of the mothership - no more containers lost overboard; no more timber stacks collapsing into the sea.

The common element of the barges would be the bottom areas – propulsion, fuel and ballast tanks.

Barges, having been unloaded in a graving dock, can be re-loaded with full or empty containers and moored offshore awaiting a mothership, so freeing up valuable dock space.

There is even a "disaster relief" geared barge design possibility.

This could have a helipad, a hold with containers with emergency supplies handled by a bargeboard rail-travelling gantry crane, and space for a floating field hospital.

Around 80% of the mothership's top surface area can be used to harvest solar energy.

This can be used to charge electric propulsion to the barges, including power for reefer cargo, and necessary power to the mothership while it waits for its next load of barges.

Freeland is supported by Stephen J Line, an independent consultant with a background in corporate finance.

He says that various financial models could be applied for the FREBS concept.

The expensive element is the mothership, but the self-propelled barges are relatively inexpensive and within the scope of many players in the global supply chain.

For Line, the biggest challenge is to get the "big hitters" in the shipping, ports and shipbuilding sectors to think differently about where their industry is headed.

One major shipping line has an "incubator fund" and a leading ports grouping has a "dragons' den" for potential investment in new technologies, but it's very hard to "get a foot in the door."

For Line and Freeland, UCS is disruptive technology.

Maybe that's the problem - the big players today have too much tied up in the status quo to want change.

On the other hand, marginalised smaller, uncongested ports, without the depth or space to accommodate mega-ships and the massive cargo surges they create, are brought back into the game, and the cargo owners who suffer from port delays and congested inland distribution are the ultimate gainers.

The FREBS UCS approach is very similar to the Sea Tech mothership/barge concept of Sweden-based Sea Technology AB, reported on by WorldCargo News in November 2012.

Again, the idea is to take advantage of transoceanic scale, but without the downside.

The Sea Tech designs have since been scaled up to take advantage of NPX.

In addition, Sea Tech already had a 15,000 CEU mothership/barge PCTC concept based on Panamax, almost twice the intake of the latest 8,000 CEU PCTCs that take advantage of NPX.

Finally, in March 2017, Gerald Fisher, Managing Director of US-based Sea Horse Shipping, Ltd, produced a video illustrating the problems of today's mega-ship model and promoting the use of its semi-submersible mothership and flo-flo barge system (which is based on the Jumbo Barge Carrier) as the solution.

At the time of writing, this has had over 15,000 views.

*(from: worldcargonews.com, October 9<sup>th</sup> 2018)*

## STUDIES & RESEARCH

### UNCERTAIN OPTIONS FOR IMO 2020 SULFUR CAP, BUT DISRUPTIONS EXPECTED – ANALYST

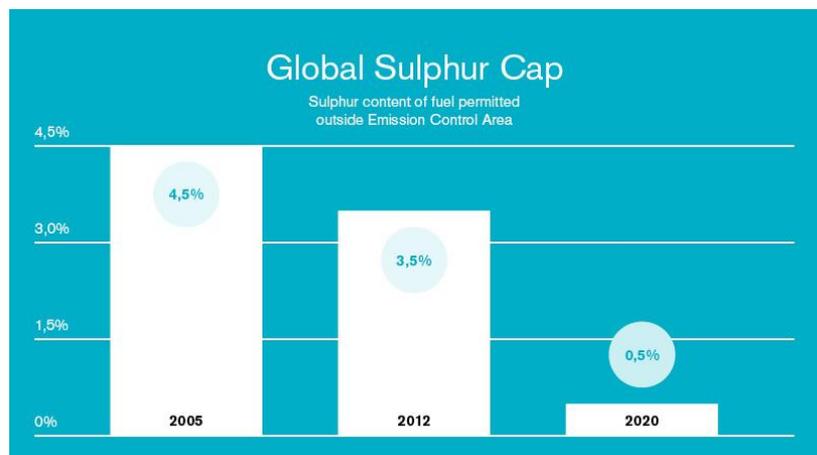
While analysts expect disruptions in the coal export and import markets, solutions to the International Maritime Organization's 2020 sulfur cap remain unclear, a Wood Mackenzie analyst said in a report.

Starting January 1, 2020, the current 3.5% sulfur cap will fall to 0.5% per IMO regulations.

"Coal companies relying on ocean transport should brace for increased voyage rates," Anthony Knutson, Principal Analyst at WoodMac, said in the report.

"There will be high costs across the entire supply chain," a Platts Analytics analyst concurred in an interview with S&P Global Thursday.

The price of diesel will go up, leading to higher cost for domestic coal freight and to overall higher costs in coal production, from mining equipment, to trucks as the global supply curve shifts to the right.



In addition, export and domestic margins would tighten, and US demand would be at risk most, the Platts analyst said.

Particularly, the long-haul supply routes such as Columbia to Asia and South Africa to Asia will be impacted more, the analyst added.

Additionally, the 2020 cap may lead to increased competition in the power sector.

"The idea is if HSFO needs to be gotten rid of, it might be burned in certain power markets," the Platts analyst said, adding there are limited locations, including the Middle East, ASEAN, and Mexico, which can use high sulfur fuel oil (HSFO) for power generation.

### *'Wait and watch' approach*

Uncertainty surrounding compliance, in addition to competition between refining and marine investments, have prompted a "wait and watch" approach from both the sectors, the WoodMac report said.

"Refineries are slow and possibly reluctant to make major investments for the swing," Knutson said.

"Refineries have shown reluctance to invest the hundreds of millions to billions of dollars to increase production of low sulfur marine fuels."

Bulker fuel costs are expected to rise even before 2020 and continue rising afterward until a balance is found between shipping company demand and refinery marine bunker fuel output.

The Wood Mackenzie analyst examined three options for lowering sulfur emissions, including emissions scrubbers systems, switch to low-sulfur fuels, and switch to alternative fuels.

### *Scrubbers*

WoodMac predicted emissions scrubbers systems to be a "medium term solution," although cost effectiveness would come into play in addition to the reduced cargo capacity, considering the added weight.

The shipping industry is still recovering from the economic downturn of 2016, and has limited credit to pay for fleet-wide projects, especially when scrubbers would likely become superfluous in long term due to increased production of lower-sulfur fuels.

However, WoodMac "asserts the installation of commercial scrubbers has the advantage of being less expensive and faster to put in place than a major refining upgrade, which is highly capital intensive and can take many years to implement."

WoodMac estimated scrubber penetration at less than 1% in 2020, in addition to future ship builds being "constructed 'scrubber ready'."

By 2025, WoodMac expects "one in five 2013-2018 vintage bulkers will have a scrubber."

### *High to low sulfur fuel*

WoodMac said the switch from high-sulfur to low-sulfur fuel as a "short-to medium-term solution."

Bulk carrier ships currently burn residual-based high sulfur fuel oils (HFSO) which have a sulfur content cap of 3.5% under regulations from the IMO.

Alternate fuel options include distillate fuels marine gasoil (MGO), which has a sulfur content of 0.1%, and an emerging fuel specification with a 0.5% sulfur content known as very low sulfur fuel oil (VLSFO).

Depending on the compliant fuel type, WoodMac estimates a 20%-40% jump, on a US\$/mt basis, on coal route voyage rates for coal shippers.

#### *Alternate fuels*

The last option, switching to alternative fuels such as liquefied natural gas, is seen as a "long-term solution" by WoodMac.

Although LNG is low-sulfur with clean burning properties, WoodMac listed underdeveloped global infrastructure, slow global investment, and inefficient fuel transfer technology as problematic.

WoodMac sees "limited but growing LNG ship penetration" from 2020 to 2025.

IMO originally released the coming sulfur cap October 27, 2016, and the organization came to the definitive January 1, 2020, start date this year.

*(from: hellenicshippingnews.com, October 1<sup>st</sup> 2018)*

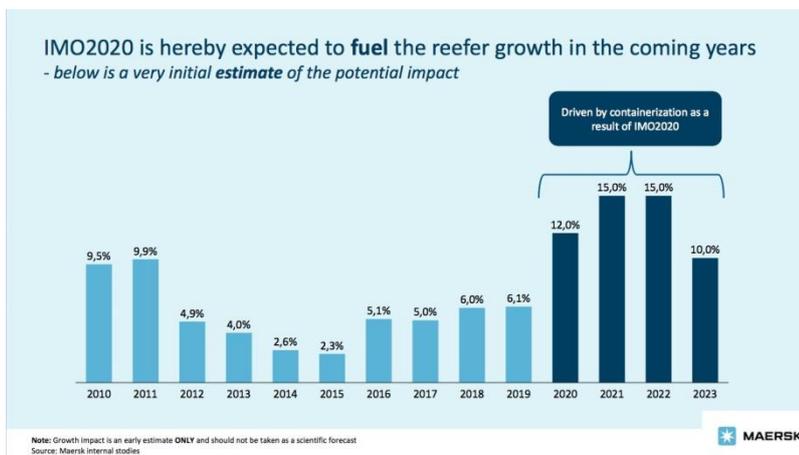
## REEFER

### REEFER BOX GROWTH RATE COULD TRIPLE IN 2020

In a presentation at this week's Cool Logistics conference in Antwerp, Anne-Sophie Zerlang Karlsen, Head of Global Reefer Management at Maersk Line said the reefer container shortage experienced in recent years could get much worse as aging reefer vessels are forced out of the market by emissions regulations.

Karlsen noted that the global reefer fleet has been under pressure since 2015 as reefer cargoes have grown by 5-6%, while the fleet has only increased by an average of 2.8%, and carriers have struggled to position equipment out of Asia.

In 2020 regulations on sulphur emissions will come into effect, forcing the shipping industry to use higher cost fuels with a maximum 0.5% sulphur content, or adopt other expensive alternatives such as LNG or scrubbers.



further containerisation as owners of older reefer ships take tonnage out service rather than invest in upgrades.

Maersk has been running the numbers, and Karlsen stressed that its figures are an "early estimate only", but the IMO regulations could propel reefer container demand growth from 6% in 2018 to 12% in 2020, and as high as 15% in 2021 and 2022, she said.

To further compound the problem Asia is the fastest growing market, which will increase reefer box turn times for all carriers.

"If this holds true, the global equipment investments will need to triple", Karlsen said.

Questioning whether carriers have the capital to support this level of investment, Karlsen said the problem is one that must be solved by all players across the supply chain.

On the supply side reefer container and machinery manufacturers will also come under pressure if demand increases threefold.

Reefer box orders have increased significantly in 2018, and manufacturers are on track to turn out 300,000 TEU of new reefers this year.

This is still well short of the estimated 430,000 TEU of capacity the reefer box factories, which are now all in China, can produce in a year working two shifts.

If demand were to suddenly triple, however, the industry would be facing a significant supply problem, and reefer container prices would very likely rise.

*(from: worldcargonews.com, October 4<sup>th</sup> 2018)*

## SAFETY & SECURITY

### CYBER SECURITY SURVEY SHOWS MORE ACTION IS NEEDED IN THE INDUSTRY

According to the survey, in which more than 350 individuals responded, more than a fifth reported that they had been the victim of an attack.

In addition, 72% of these mentioning that their own company was a victim of a cyber related incident in the last 12 months.

“The many cyber related attacks and incidents within the last 12 months



indicates that there is still good reason for the industry to be better prepared in the future,” says BIMCO’s Head of Maritime Technology and Regulation, Aron Frank Sorensen and continues: “In the survey, 27% of respondents reported that they had never received cyber security training, and only about half of respondents have a business continuity plan in

place, should they become a victim of a cyber security attack, while 31% of respondents had none,” Aron Frank Sorensen said.

Another finding was that 49% of respondents reported service disruption as the result of the attack and the incident caused financial loss for 25% of respondents.

In addition, only 16% had the breach covered by insurance while 84% did not have the attack covered.

BIMCO and Fairplay launched the annual survey for the third time in June with the aim to gather insight and greater awareness on how the industry prepares for and handles cyber attacks.

The survey showed that the Industry guidelines initiated by BIMCO on cyber security were the most widely used by respondents.

“That is very encouraging but it also pushes us to improve our guidelines, which we are preparing the third version of right now.

The survey matters because it allows us to gather knowledge about cyber risks and attacks that would normally never be reported.

We can use the result to further develop the cyber security guidelines and thereby help the industry to be more prepared and better protected in the future," Aron Frank Sorensen said.

*(from: hellenicshippingnews.com, September 27<sup>th</sup> 2018)*

## ON THE CALENDAR

- 24/10/2018 – 25/10/2018 Aqaba 15th Trans Middle East 2018
- 28/11/2018 – 29/11/2018 Accra 20th Intermodal Africa 2018
- 30/01/2019 – 31/01/2019 Kuwait City 16th Trans Middle East 2019
- 20/02/2019 – 21/02/2019 Manila 10th Philippine Ports and Shipping 2019
- 20/03/2019 – 21/03/2019 Mombasa 21st Intermodal Africa 2019

The Secretariat of C.I.S.Co. is able to communicate detailed information on the programs of all the events and how to participate.