



Newsletter

July 31st 2019

Link road, rail, sea!

Centro Internazionale Studi Containers

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The content of the C.I.S.Co. Newsletter is also published in the newspaper "Informare" accessible on the Internet site <http://www.informare.it>

C.I.S.C.O. NEWS

TRAINING COURSE "THE CONTAINER REEFER AND THE NEEDS OF THE GOODS"

Starting next September 10th and until the middle of the following November C.I.S.Co. will organize a training course dedicated to the reefer container and the needs of the goods.

The course provided by C.I.S.Co. is reserved for maritime agency employees and is financed by the bilateral category body.

30 hours of teaching are provided, divided into 15 lessons of two hours each.



The topics of the course will be the following:

- introductory notes
- technical aspects
- the goods
- logistics and containerized transport
- container logistics actors
- legislation and legal aspects
- container logistics documentation
- insurance aspects
- new technologies

The lessons will take place at the Assagenti Genova headquarters and by videoconference at the headquarters of the federated associations (Ancona, Bari, Cagliari, La Spezia, Leghorn, Naples, Ravenna, Rome, Savona, Trieste, Venice).

The detailed program of the course will follow in the next Newsletters.

PORTS AND TERMINALS

SPADES FINALLY GET DIRTY AS ELBE DEEPENING GETS UNDER WAY AFTER 13 YEARS

The Elbe deepening project finally got under way yesterday, following years of delay which saw the port of Hamburg tumble down the European port rankings.

The two-year project involves dredging the lower and outer sections of the river to a tide-independent depth of 13.5 metres and constructing a 385-metre passing point for vessels.

On LinkedIn, Deme Group, responsible for the project, said: "And off we go! After a symbolic push on the button, our trailing suction hopper dredger Scheldt River kicked off the works, which should be completed early 2021."

Dredging the river has become essential to the future of Hamburg as a hub port in recent years, with the increasing size of ships being deployed by carriers.



Calculations suggest the deepening could see vessels calling at Hamburg exchange an extra 1,800 teu per visit, although some ULCVs now have a maximum draught of up to 16 metres.

Executive board member of Hapag-Lloyd Maximilian Rothkopf said: "The port of Hamburg will become much more attractive for customers."

In terms of box volumes, no carrier has a larger footprint at the German port than Hapag-Lloyd, moving some 22% of total port volumes, roughly 1.9m teu.

And that number climbs when the volumes of its alliance partners are included, equating to 3.9m teu or some 45% of total port volumes.

"Once the relevant work has been completed, the world's largest containerships will be able to reach the city of Hamburg with virtually no limitations," Mr Rothkopf said.

“In addition to container liner shipping companies, this will ultimately also benefit customers worldwide, whose cargo will reach the port more easily and quickly.”

After 11 years of legal hurdles, Germany’s Federal Administrative Court in Leipzig gave a go-ahead of sorts – but a further two years were required to redraw the original 2006 plans.

The amended project was finally approved last year after a series of measures were added to mitigate the various environmental concerns that had led to much litigation.

It came as a welcome boost for the port, which had seen Antwerp overtake it and entrench itself as the second-busiest gateway in north Europe.

But Hapag-Lloyd remained loyal.

Mr Rothkopf said: “Our clear commitment to our home port of Hamburg remains unchanged.

Hamburg offers us outstanding infrastructure and excellent hinterland connections – be it through a unique railway network or very good European motorway connections.

This is another reason why we recently decided to relocate a large part of our North Atlantic services from Bremerhaven to Hamburg.”

(from: theloadstar.com, July 24th 2019)

MARITIME TRANSPORT

DRONES HERALD IN NEW ERA OF INSPECTIONS

Visual inspections and steel thickness measurements are key elements of renewal surveys.

Preparing ships for these activities is time-consuming and costly.

DNV GL now offers a fast-track solution using drones.

DNV GL has been using camera-equipped drones in surveys since 2016.

The concept, the technique and the equipment were developed by the surveyor team in Gdansk in response to customer enquiries.

A traditional survey requires rafting, roping or staging so the inspection personnel can reach all relevant structural elements.

Rafting takes additional time to ballast and de-ballast the vessel; both roping and rafting often require voyage surveying.

Setting up staging can even take days.

New tools for remote surveys

This disproportionate effort caused owners to inquire about alternative methods.

In addition, staging often damages surfaces and coatings that must be repaired.

In certain situations owners have to hire subcontractors providing rope access techniques, an especially hazardous type of work.

These conventional inspection methods put ships off-hire for weeks, which means lost income.

Logically owners have an interest in keeping these times as short as possible.

This led to the idea of using drones.

“We started the drone project in 2015 to make surveying smarter, more efficient and economical for the owner, and safer for surveyors,” says Tomasz Oledzki, Head of Section Fleet in Service (FiS) Poland at DNV GL – Maritime.

The first step was to attach a high-resolution camera to a drone so surveyors could take a close look at hard-to-reach places.

Several off-the-shelf drone models were tested.

The team ultimately chose a medium-sized model for interior inspections, and a larger, more powerful one for outdoor inspections where wind can make positioning and controlling the drone more difficult, for example on offshore platforms.

A new dimension: thickness measurements

“We now have three years’ experience performing camera-assisted visual inspections on ships and offshore structures using drones,” Oledzki continues.

“But our customers expect more.

They would like us to cover the full scope of inspections using this advanced technology, including thickness measurements.

So in mid-2018 we decided to venture into this field and began developing a flying thickness measurement system.

We built several prototypes and finally arrived at a design that satisfied our requirements.”

An attachment frame was engineered in-house by the Gdansk team in an iterative process including repeated practical testing.

Its design is compact and ‘universal’, allowing surveyors to interchange the close-up inspection camera for the ultrasonic measurement head on a drone at any time, or attach the frame to another drone in case the original one is damaged.

This standardization minimizes the amount of equipment surveyors have to carry when travelling to a ship, especially when dispatched by helicopter.

“Reducing the amount of luggage was actually our key objective when developing this system,” stresses Oledzki.

What is more, key parts of the attachment frame are made by the DNV GL team on a 3D printer, which means the team can now manufacture any number of identical frames in a repeatable process, whether for their colleagues at other DNV GL offices or for spare parts.

Bottom-line value for owners

“We have successfully tested the new thickness measurement drone on an MPV, some bulk carriers and this shuttle tanker,” says Oledzki.

“The results are very positive – the system works well and delivers reliable data.

Today we can say we have the capability to offer owners the full package of drone-assisted remote survey services including close-up inspection and verification of the thickness measurements.”



Alba adds: “We see a great opportunity to accelerate the survey process and minimize off-hire times; what is more, we can actually perform some inspections during the voyage of a vessel when cargo spaces are accessible.

This is of great value to owners and operators.”

The biggest challenge the Gdansk team faces is to convince ship and cargo owners that the new methods delivers good and reliable results, says Alba.

But the response from customers is excellent: “The owners for whom we have performed drone surveys to date have been very satisfied, and in many cases they were outright surprised how quickly and efficiently inspections can be done, and how little owner involvement is required to provide access to the structure.

Whereas in the past, the surveyor had to be physically taken to the structural element to be inspected, the drone now ‘brings the structure to the surveyor’ for real-time inspection.”

Limitations and opportunities

Yet owners should not foster unrealistic expectations, Leszek Alba cautions: “The critical point is the condition of the vessel interior.”

Oledzki explains: “When we receive a request from an owner for a drone inspection, we take our equipment on board and first assess the condition of the vessel to see whether thickness measurements can be done with the drone.

If the coating is intact and the surfaces are clean, we can get good visual inspection results and high-quality thickness readings.

If the condition of the vessel is not suitable for ultrasonic thickness measurements, we can still use the drone with a mounted camera to perform a visual inspection.”

“Drone or not, it is impossible to take ultrasonic measurements on corroded steel because the measurement head is unable establish direct contact with the steel to get a reading,” stresses Alba.

“Ultrasonic measurements are suitable to confirm the intact condition of structures.

Our drone inspections serve the purpose of verifying the good condition.

They are ideal for renewal surveys of younger vessels that are five to ten years old.”

The classification rules require a wide range of thickness measurements, most of which are typically performed by subcontractors.

“It is important to note that our measurements are only supplemental to what the contractors are doing,” Alba points out.

“We only access structures that cannot be reached by conventional means.

We use drones to perform close-up surveys and to verify and confirm that a ship is structurally in good condition as required under class rules.

The drone accelerates this spot-checking process dramatically so we can accomplish it within a single visit.

We can even perform it during a voyage or port stay.”

Wherever conditions are detected that warrant further investigation, traditional access using staging is unavoidable, he adds; but when the drone survey shows that everything is in good condition, this expense can be avoided.

An evolving technology

Younger tankers, MPVs and bulk carriers are the primary targets of DNV GL’s drone survey offer.

Oledzki says that conceivably drone measurements could be extended to cover the full scope of thickness measurements at some time in future.

And that is by no means all this technology could accomplish.

“The last step of this development could be autonomous drones performing close-up inspections and thickness measurements,” says Leszek Alba.

“They could either navigate based on sensor and navigational algorithms or using an electronic model such as the ‘digital twin’.

This would enable the surveyor to stay outside, simply watching the computer screen and letting the drone do its work independently.”

A research programme in Oslo is underway to investigate these possibilities, and there are even scientific studies in progress to identify potential contactless thickness measurement technologies.

As for the present, incorporating thickness measurements in drone surveys is already a big step, says Alba: “Today we have gathered enough experience and solid results to know what we can achieve in assessing the condition of structures.

Autonomous drones will essentially do the same but with less operator involvement.”

DNV GL as a classification society offers the unique advantage of providing not only drone-based visual and thickness inspections but also the know-how and experience to interpret the data: “We know the ship, and as surveyors we know exactly what we are looking for,” says Tomasz Oledzki.

“We not only take pictures or measurements but we are competent to assess them and confirm the good condition of the ship, and we take responsibility for every aspect of these services.

We provide one-stop shopping to owners.”

(from: hellenicshippingnews.com/dnvgl.com, July 18th 2019)

RAIL TRANSPORT

NO GERMAN BETUWE MATCHING TRACK BEFORE 2026

The extension of the rail track in Germany, which is essential to meet the capacity of the dedicated Betuwe rail freight corridor in the Netherlands, will not be ready before 2026, the Dutch Deputy Transport Minister Stientje van Veldhoven has told Parliament.

The Minister's German counterparts have informed her that the time needed to securing the building permits is to blame.

In January 2017, the revised target date for the already delayed "third track," was set at 2022, so the deadline has now slipped by four more years.

The grade-separated third track, next to the 73-kilometre two-line track between the Dutch border at Emmerich and Oberhausen, an important rail junction close to Duisburg, is still said to have the highest priority in Germany's national infrastructure scheme, despite the ongoing delays.



The €1.5B German extension is essential to match the Dutch Betuweroute's capacity of 160 trains per 24 hours.

Whereas the Dutch commissioned this dedicated and electrified freight track in 2007, Germany has so far failed to deliver its commitments in the bilateral treaty signed in 1992.

At present the line's capacity for trains into Germany and the Rotterdam-Genoa corridor is limited to 50 train pairs per day.

The latest news is a blow to Rotterdam port authority.

Last November, CEO Allard Castelein sent a pressing "open" letter directly to German federal transport minister Andreas Scheuer asking him for a concrete outlook regarding the long overdue rail improvements.

"Simply pointing out that planning procedures take a long time in Germany cannot and should not satisfy us, 26 years after the obligation to improve the rail link was taken on," he wrote.

"Since the financing [for the third track] was agreed between Germany's federal government, NRW and Deutsche Bahn in 2013, hardly any progress has been made."

Since the Betuweroute was opened in 2007, the Dutch have continued investing in further improvements, including a rail bypass to avoid the Caland Canal bascule bridge in Rotterdam, in 2016.

Construction work on the bypass has just started and the project should be completed in 2021.

The Betuweroute starts at the Maasvlakte and should be pumping container and bulk trains into the Rhine corridor.

(from: worldcargonews.com, July 22nd 2019)

INTERMODAL TRANSPORT

UIRR - COMBINED TRANSPORT'S EU TRANSPORT POLICY EXPECTATIONS: 'IF RAIL MUST BE DOUBLED, INTERMODAL MUST BE TRIPLED'

UIRR and its members welcomed the newly constituted European Parliament Transport and Tourism (TRAN) Committee yesterday with the publication of the document about European transport policy expectations of Road-Rail Combined Transport for the 2019-2024 EU legislative period¹.

From Road to Rail: how to boost Intermodal Transport in Europe

UIRR is the industry association of European Combined Transport Operators and Intermodal Terminal Managers

Containerisation revolutionised transcontinental trade after World War II by making the transport of all types of cargo possible on a single vessel.

High frequency intermodal connections between producers and customers helped create logistics chains delivering the widest possible range of products to supermarket shelves.

Manufacturers got access to markets previously beyond their reach.

Economic collaboration across continents emerged.

The result is public welfare and the presence of European goods in markets throughout the world.

Continental intermodal transport was introduced into Europe in the 1950s as the number of trucks increased to unbearable levels – initially in the mountain regions around the Alps.

Development of intermodal freight transport accelerated with the 1973 oil crisis.

The first European Directive on Combined Transport – promoting the variant of intermodal transport where the length of the road legs is kept to a minimum – was adopted in 1975.

What does Combined Transport do?

The use of easily transhipped intermodal loading units – containers, semi-trailers, swap bodies – to hold the cargo enables the efficient insertion of electric rail freight into longer distance transport chains.

¹ <http://www.uirr.com/en/media-centre/press-releases-and-position-papers/2019/mediacentre/1233-uirr-roadmap-of-cts-eu-transport-policy-expectations-2019-2014.html>

The result: superior energy efficiency, radically lower carbon foot-print, less pollutants, fewer accidents and road fatalities, reduced road degradation and congestion.

The voting public expects from the European Union a substantial reduction of air pollution and the effective tackling of the global climate crisis.

This places a unique responsibility on the shoulders of the TRAN Committee as transport is the only sector of the EU economy that has not reduced its CO2 emissions since 1990.

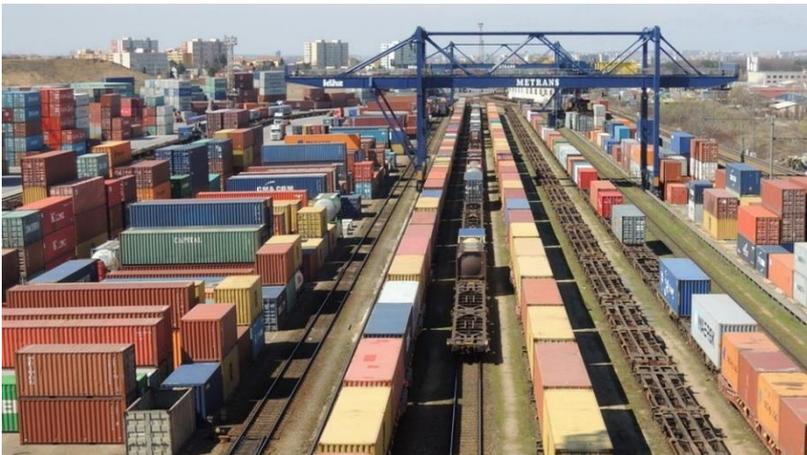
Transport-related pollution, the number of road accidents, the high level of congestion and the accelerating road infrastructure degradation also remain persistent problems, which did not improve as would have been expected.

The UIRR paper mentioned above identifies 13 policy measures to be implemented, which are vitally important to supplement the capacity developments and the productivity boosting investments of the sector to deliver the needed intermodal growth.

The <https://www.railfreightforward.eu/> initiative foresees the doubling of rail freight's market share in the European Union by 2030.

Intermodal freight transport will need to triple its current performance to enable the achievement of this European rail freight ambition.

This tripling of Intermodal Freight volumes would result in a 5% reduction of the total EU transport sector's CO2 emissions alongside substantial cuts to air and noise pollution, road accidents and traffic congestion, as well as reduced road degradation.



The TRAN Committee of the European Parliament, with Karima Delli as its re-elected chairperson, will play a pivotal role in delivering the

needed legislative and policy changes in the field of European transportation.

UIRR remains committed to working with the European Parliament, the European Council of the Member State governments and with the European Commission.

Only through a constructive and coordinated collaboration between the sector and the EU legislative partners we can hope to achieve the shared aim of having an ecologically sustainable, less polluting and less disruptive freight transport

that offers efficient and safe services needed to maintain the competitiveness of the European economy.

(from: railfreight.com/uirr.com, July 16th 2019)

INDUSTRY

SCRUBBER TOTAL WHEN IMO 2020 HITS WILL BE A NUMBER BETTER FOR DIESEL BUYERS: EXECS

For the trucking and transport industry looking at the start of IMO 2020 next year, with impacts to start hitting in fall 2019, one key equation that needs to be understood is that every ship that installs a scrubber to meet the rule does not need to buy fuel that is drawn out of the diesel pool.

Each scrubber reduces ever so slightly the potential for higher diesel prices.

It wasn't surprising then that two executives from the scrubber industry, in a webinar hosted by the transportation team at Deutsche Bank led by Amit Mehrotra, were bullish on the number of scrubbers that will be in the world's marine fleet when IMO 2020 becomes law January 1.

Here's the standard primer on IMO 2020 – it will require ships to burn fuel of no more than 0.5 percent sulfur content worldwide.

The limit now is 3.5 percent sulfur.

Two of the major ways of displacing that high sulfur fuel oil (HSFO) are either burning marine gasoil (MGO), which is a diesel product, or burning a new family of fuels generally known as very low sulfur fuel oil (VLSFO), which is heavily blended with a diesel intermediate product called vacuum gasoil (VGO).

In either case, demand that had been supplied by the "bottom of the barrel" would be supplied instead by the middle of the barrel, the cut that now supplies diesel to the over-the-road trucking industry and to the rails.

Nicholas Confuorto, president and COO of CR Ocean Engineering, said on the webinar he expected that by January 1, the number of scrubbers on ships would be about 4,000 worldwide.

This would be several hundred scrubbers more than most forecasts have been predicting throughout 2019.

Between what's been installed so far and what's in the order books, that total is now about 3,700.

"I think by January we may see 4,000 ships with scrubbers, which is higher than estimates," Confuorto said.

He cited one specific estimate of 3,675 scrubbers.

Although current "official" numbers aren't pointing to a 4,000 total, Confuorto noted that not all vendors are reporting their numbers, "so that is why I think it's going to be higher than that.

There are so many Chinese vendors that have now entered the market and they are not reporting into this total," he said.

The other presenter on the webinar, Kevin Humphreys, the general manager of



the merchant and gas carrier segment at Wartsila (OTC:US) noted that while the number of ships with scrubbers is expected to be somewhere around 9 percent to 10 percent of the world's fleet, a more significant number is the tonnage.

The ships with scrubbers will be more like 18 percent to 19 percent of the total tonnage in the market and by extension that percentage of current HSFO demand.

Some of the vendors that have come into the market recently, according to Confuorto, "until six months ago had no idea what a scrubber was and suddenly they decided to start selling scrubbers."

The act of scrubbing sulfur (specifically SO₂) out of exhaust is not complicated, Confuorto added; it's been done for years.

Humphreys said he is specifically concerned about the quality of the steel being used by some of the new entrants into the field.

Both presenters said their order books are filled and had been so as early as last autumn.

But whether the growth continues past the current rush of new builds will depend mostly on one factor – the spread.

The spread is the general term used to describe the relationships among the three key products that will be used to meet IMO 2020 rules.

What will be the spread between HSFO and both MGO and VLSFO? (The latter product is particularly important since that is the family of products that oil

companies have focused on in rolling out a new line of IMO 2020-compliant fuels.)

A ship outfitted with a scrubber can continue to burn HSFO because the scrubber will cut down the sulfur content in the exhaust gas to less than the 0.5 percent cap.

But is the spread between it and MGO and VLSFO wide enough to justify the capital to install a scrubber on a ship, or a whole fleet of them?

Humphreys described the decision on installing a scrubber to be largely a “fuel hedge play.”

The costs of installing a scrubber system on a ship has come down since when his company first started marketing them back when there were earlier marine fuel oil sulfur reductions in key coastal areas known as Emission Control Areas (ECAs).

The International Maritime Organization – the IMO of IMO 2020 – began mandating lower sulfur levels in the ECAs back in 2015.

But both Humphreys and Confuorto said the price of a scrubber had stabilized this year.

The spread(s) will determine the payback time on that investment, both presenters said.

Confuorto said the payback – defined as when the capital laid out for the scrubber installation is eventually compensated for by the ability to buy cheaper HSFO – is “sometimes one year, sometimes two years at these prices.

We expect that once fuel prices come into play the payback it will be one year or less.”

Humphreys cited a two to three year payback at current levels.

But if the delta between HSFO and the alternatives widens significantly, he said the payback could fall to six months.

One market relationship that wasn’t mentioned on the call, however, is that if scrubber growth soars, that will mean many more ships able to buy HSFO and spurn the lower sulfur blends.

Given that trend, the spread would narrow and the economics of scrubber installation wouldn’t be as favorable as when it is wider.

It’s the always-present market check on excess either way.

Installation of the scrubbers can be done in drydock or in a more complicated series of steps while the ship is in service, both Humphreys and Confuorto said.

The drydock option allows installation in a matter of days but takes the ship out of service.

The in-service option can take two weeks but allows the ship to keep operating.

Mehrotra asked if there were any aspects of the IMO 2020 policy that had not received much attention.

Confuorto noted an environmental benefit that comes with scrubbing – particulate removal.

While IMO 2020 is targeted at sulfur removal, particulates – tiny bits of matter that are present in all emissions – can do far more damage to human health.

Even if 0.5 percent sulfur fuel oil is burned, “it still has particulates going up the stack and that is dangerous if not more so than sulfur,” Confuorto said.

Scrubbing captures particulates as well as sulfur and discharges them into the ocean if the scrubber is the type of “loop” system that allows that.

“The scrubber is putting the dust in the water,” Confuorto said, instead of in people’s lungs.

(from: hellenicshippingnews.com, July 15th 2019)

LOGISTICS

KUEHNE + NAGEL POSTS 'HIGH LEVEL RESULT' IN 'TOUGH' ENVIRONMENT

Kuehne + Nagel (KN) posted a “high level result” in the first half of 2019 with gains in both revenue and profitability to a backdrop of a “tough” market environment, marked by significant headwinds in air freight.

The global freight forwarding and logistics group increased its net turnover by 5.3% to CHF 10.6 billion, gross profit by 5.5% to just over CHF 4 billion and EBIT (operating profit) by 2.0% to CHF 511 million compared to the first six months of last year.

Earnings were down 1.5% on the same period last year at CHF 384 million.

KN said its Seafreight and Overland units continued the growth momentum they had shown in the first quarter of 2019.

However, in light of the deteriorating market environment, airfreight experienced a decrease in volume.

As for the the Contract Logistics unit, restructuring proceeded according to plan.

Looking at the results in more detail, KN noted that the global airfreight market “continued to be under pressure in an economy characterised by growing trade barriers.”

Due to stagnation in some key industries, the group’s airfreight volume decreased by 5.8% to 813,000 tonnes compared to the same period last year.

However, growth was achieved with industry solutions for pharma and healthcare, as well as for perishables.

Quick International Courier, which KN acquired towards the end of last year and one of the market leaders in time-critical transport and logistics services for the pharma and healthcare and aviation industries, was integrated successfully, KN added.

At CHF 174 million, EBIT was down by 4.4% compared to the record performance of the previous year.

KN's Seafreight unit increased its volume in the first half of the year by 4.5%, handling almost 2.4 million TEU.

This compared with overall market growth of 2.5%.

The group underlined that a selective growth strategy, effective cost control and focus on customer service were yielding results.

The demand for digital seafreight solutions has also shown positive developments.

EBIT increased by 11.9% to CHF 235 million year-on-year while the EBIT-to-gross-profit ratio (conversion rate) reached "an industry-leading high level" of 30.1%.

Kuehne + Nagel's Overland transport unit increased net turnover by 3.3% and gross profit by 4.9%

Although growth in this business was well above the market, it slowed down in the second quarter in line with prevailing trends.

The primary growth drivers in Europe were Germany and France, while large customers performed well in North America.

Due to falling oil prices, intermodal business in the US and project business in the Middle East and Africa stagnated.

With a new digital booking platform, Kuehne + Nagel expanded its offering for overland in Asia.

Initially implemented in Thailand, the platform will be rolled out gradually throughout southeast Asia.

EBIT improved by 4.7% to CHF 45 million.

Turning to the Contract Logistics unit, restructuring continued through the second quarter.

Net turnover increased by 4.4% and gross profit by 2.7% year-on-year.

New business in pharma and healthcare, as well as e-commerce fulfilment, yielded positive results.



Further efficiency gains are expected in the future leveraging the implementation of the global warehouse management system combined with the new picking technology, already deployed in more than 100 warehouses.

EBIT was below last year's figure at CHF 57 million.

Commenting on the first half-year performance, KN CEO, Detlef Trefzger, said: "The Kuehne + Nagel Group achieved a high level result in the first half of 2019.

This was due to the consistent implementation of our strategy in all business units."

He concluded: "Currently our focus is on addressing the significant changes in airfreight market conditions and on continuing our restructuring activities in contract logistics.

With our initiatives to improve our technological capabilities we will become more cost effective and improve customer service.

We are well set to successfully meet the challenges of an ever-demanding market."

(from: lloydsloadinglist.com, July 23rd 2019)

PROGRESS & TECHNOLOGY

TESTING THE POTENTIAL OF ADDITIVE MANUFACTURING

Additive manufacturing, or 3D printing, has the potential to transform the maritime equipment supply chain.

With the adoption of technology enabling printing in metal, vital spare parts and system components can now be printed on demand in locations around the world, including on vessels themselves.

The result is dramatically reduced lead times, costs, labour needs, stock requirements and environmental impact (with less logistics and less waste), as well as the complete disruption of traditional business models.

And that's just the supply side.

The impact on manufacturing capability is just as radical.

Suddenly the constraints of traditional processes can be broken, with machines bringing previously impossible designs to life through the precise application of layer upon layer of metals.

For the frontrunners in maritime manufacturing, such as Wärtsilä Moss AS (a division of Wärtsilä Marine Solutions), it represents a special kind of magic.

Unique potential

"We came up with a new design that could only be realized with AM fabrication," he explains.

"The geometry of the part, the complexity involved in producing it, makes it far too difficult and expensive to manufacture using traditional methods.

It can only be brought to life with AM."

Working with stainless steel and utilizing a fabrication process called selective laser melting (also known as laser-based powder bed fusion (PBF)), the team and their selected supplier – in partnership with the University of South-Eastern Norway – created a unique nozzle, one theoretically capable of greater spray adjustment and performance than anything else on the market.

However, initial quality assessment identified an anomaly.

An anomaly no one – not at Wärtsilä Moss AS, the AM supplier or the university – could explain.

“About halfway through the PBF printing process a shift occurred, causing a small yet noticeable offset, or ridge, on the nozzle,” Odd Ivar Lindløv, General Manager – Research & Development, Wärtsilä Moss AS reveals, adding: “It was only 0.375 mm, but it was unexpected.



The complex geometry of the inert gas nozzle (centre), which fits into the cap (at left; both parts assembled at right), can only be produced using Selective Laser Melting, an additive manufacturing process.

Our question was, how will this affect the integrity of the material and the operation of the part itself?

And we couldn't answer that, so we needed someone that could.

That's why we approached DNV GL.”

3D vision

Ramesh Babu Govindaraj, Principal Material Specialist, is part of a DNV GL team that has been looking into the potential of 3D printing since 2016.

This work has encompassed the initiation of a number of JDPs, pilot studies, innovation papers and, in November 2017, the introduction of DNV GL's first classification guidelines for the approval of 3D printed products (class guideline DNVGL-CG-0197).

In July 2018 this was followed by the class programme for Approval of Manufacture (DNVGL-CP-0267) for AM, and DNV GL has since included AM as an accepted process for ships and offshore (similar to rolling, casting and forging) in ship rule DNVGL-RU-SHIP Pt 2 Ch 1 and offshore standard DNVGL-OS-B101.

Govindaraj sees DNV GL's role as an enabler for the industry, helping customers understand the potential and realize the value of AM, while supporting, certifying and, in this case, providing expert assessment and testing services for a new generation of printed parts.

"Additive manufacturing is an exciting but new discipline – especially as far as metals are concerned – so caution, patience and expertise are prerequisites for projects," he comments.

"New processes, products and designs also introduce new possibilities for things to go wrong, and we need to take time to understand how these 'failure modes' impact upon the integrity of materials and parts.

Wärtsilä's fuel nozzle provided an interesting case in point."

Stringent standards

From the outside, the "offset" in the printed fuel nozzles was largely irrelevant, as machining could be used to create a flush surface.

However, if the airflow inside was compromised by the resultant ridge, or the part itself was weakened, the potential consequences could be serious.

The DNV GL lab in Høvik has expertise in failure investigation and material technology for both maritime and oil and gas.

Here, led by engineer Ole-Bjørn Ellingsen Moe, a team of metallurgical experts carried out a thorough testing programme, including microstructural assessments, hardness measurements, penetrant testing and radiography.

"With critical components, fabricated and designed in new ways, the level of scrutiny required is exceptional," Govindaraj notes.

"This degree of testing is tailored to provide complete insight and total assurance, helping our customers successfully navigate an unfamiliar manufacturing landscape.

We are, quite simply, here to help."

The in-depth examinations delivered a positive conclusion for the Wärtsilä team.

The material properties of the nozzle were not significantly impacted by the offset, while the crucial airflow inside was not disturbed.

“In summary,” Govindaraj says with a smile, “the nozzle is fit for purpose.”

The path to progress

Lindløv and his team are now conducting the first vessel tests with their innovative AM-fabricated nozzle and are hopeful for a successful introduction to the market in the future.

“I am convinced that additive manufacturing is going to have a major impact on the way we do business,” Lindløv notes, “unlocking innovation, enhancing value and delivering tangible benefits to our customers, our organization and our industry.”

This nozzle is just a first step, albeit an important one, and I’m excited to see where we can go from here.”

His advice for others considering 3D printing is simple: “Jump in,” he says, “the potential is enormous ... but make sure you find the right partners to work with.”

We all need help from experienced people when trying new things, and that’s certainly true for additive manufacturing.”

(from: hellenicshippingnews.com, July 11th 2019)

STUDIES & RESEARCH

ASIA-MEDITERRANEAN A CONTAINER TRADELANE 'ON THE MEND', SAYS DREWRY

Often overshadowed by the larger Asia-North Europe route, the Asia-Mediterranean tradelane has so far this year proved to be slightly more robust.

According to Container Trade Statistics (CTS), westbound liftings from Asia to the west Mediterranean (including North Africa) grew 5.9% year on year to the end of May.

Moreover, Drewry said, the “laggard” Asia to east Mediterranean trade was finally showing “positive intent, following a prolonged period of contraction”, as the region bounced back to record 0.6% headhaul growth in the first five months of the year, compared with a 1.5% decline in volumes in 2018.

Cumulatively, Asia to Med headhaul trade grew 3.1% in the period versus the weak 0.6% expansion seen the year before.

Drewry said: “Container traffic from Asia to the Mediterranean appears to have



been given a lift as China redirects more exports to other markets to compensate for the fall in traffic to the US.”

It added that much of the growth had derived from an increase in Spanish imports, which it suggested had been given a “fillip from a substantial hike to the country’s minimum wage at the start of the year”.

Indeed, after having been ravaged by recession after the global financial crisis of 2008/09, resulting in unemployment levels in excess of 25% and youth unemployment nudging an horrendous 40%, the Spanish economy is now one of the few bright lights of the European economic region.

And, responding to the positive economic data, Bank of Spain has hiked its annual growth forecast from 2.2% to 2.4%, which compares with the sluggish wider European expansion expectation of just 1.4%.

However, although Drewry said the CTS data was “encouraging”, it added that Asia-Med headhaul growth for the rest of the year was “unlikely to be rapid”.

The consultant said the main reason for this cautious outlook was the still-fragile nature of the Turkish economy, the biggest importer of Asian goods in the region, which it said was still suffering the impact of its currency crisis last year.

On the supply side, Drewry said westbound capacity in the first six months of the year had been kept below the level of the same period of 2018, which it attributed to the suspension of Zim’s ZMP loop that had counteracted the upgrade of three alliance services.

It noted that westbound vessel utilisation levels in May had recovered to about 90%, from an 85% average in the second quarter, and that the capacity surplus had acted as a drag on spot container rates, in a similar fashion to the situation for North Europe.

According to Friday’s reading of the Shanghai Containerized Freight Index (SCFI), Mediterranean spot rates stood at \$695 per teu, compared with \$672 per teu for the north Europe route.

And, in parallel with the plight of the North Europe carriers, rates on the route have slumped by some 30% since the beginning of the year and remain some 20% lower than the same period a year ago.

Although Asia-Med was a trade “on the mend”, Drewry said it expected growth during the rest of the year to be “fairly modest”.

Nevertheless, carriers might find a “modest expansion” to be a satisfactory result, compared with some of their other regional activity.

(from: theloadstar.com, July 22nd 2019)

INFORMATION TECHNOLOGY

SMART DEVICES TO TRANSFORM THE UTILITY AND VALUE OF SHIPPING CONTAINER ASSETS

Smart devices have the potential to radically transform the utility and value of shipping container equipment assets, according to Drewry's latest Container Census & Leasing Annual Review & Forecast 2019/20 report.

Smart containers have increased in prominence in a very short space of time and the pace of adoption is expected to accelerate over the next five years.

A container becomes "smart" when fitted with a telematics device that provides real-time tracking and monitoring, enabling operators to increase turn time of their container equipment and so utilisation.

It also allows beneficial cargo owners (BCOs) to understand the location and status of their cargo so that they can better control their supply chains.

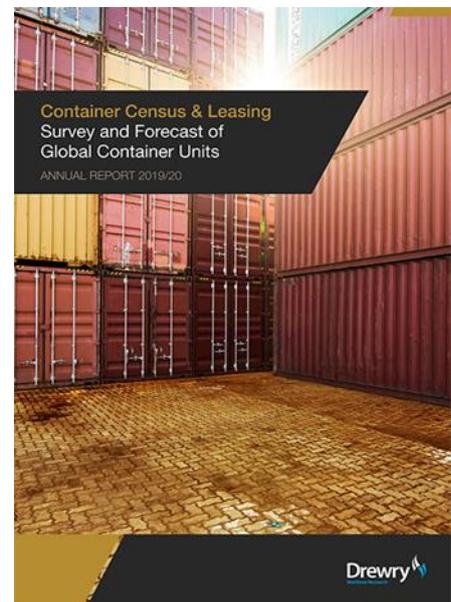
"There are a number of factors driving this market growth, including growing calls for greater transparency and security across transport value chains," said Drewry's director of research products Martin Dixon.

"Meanwhile, in shipping there is a demand to know the location of the container and above all the status of that container and the condition of the cargo inside it."

Drewry estimates that by the end of 2018, around 2.5% of the global container equipment fleet was fitted with smart technology devices.

However, take-up varies considerably by equipment type, with penetration already strong in intermodal and reefer containers but much lower in the dry box sector.

Drewry forecasts that the number of smart containers in the global fleet will triple in the five years to 2023 to reach over 2 million units, representing around 6.5% of worldwide box inventories.



As technological innovation lowers the cost of devices and enhances their value to BCOs, uptake is expected to accelerate.

Some equipment manufacturers and leasing companies already have plans to supply equipment ready-fitted with devices, and such practices are expected to become widespread among other industry players.

Uptake amongst the latter is significant as the rental sector continues to take a lead in container equipment investment and ownership, now controlling comfortably more than half the fleet and expected to extend their share to over 55% by 2023.

Meanwhile, container equipment rental rates have weakened through the first six months of the year following two years of recovery from the depths of the market in 2016.

But they still have a long way to go if they are to get back to the returns seen in the earlier part of the decade, when per diems for 40ft high-cubes on long-term lease were above \$1.50, compared with around \$1.00 now.

“We expect lease rates to ease back over the near term on slowing growth in global trade and so demand for containing equipment.

However, with newbuild prices also falling cash investment returns are expected to remain stable,” added Dixon.

(from: hellenicshippingnews.com, July 24th 2019)

REEFER

MAERSK OPENS NEW POSSIBILITIES IN SHIPPING OF PERISHABLE GOODS

Maersk, the global integrator of container logistics, completed its first successful shipment of mangoes from Nhava Sheva in Mumbai, to Felixstowe, London. Exporter, Bombay Exports, exported 21 tonnes of Kesar and Badami mangoes within a period of three weeks through Maersk's reefer containers that use advance Remote Container Management (RCM) technology².

Controlled Atmosphere (CA) is one of the offerings which helps in extending the shelf life of perishable fruits and vegetables by slowing down their ripening process³.

With this innovative offering, Maersk has opened new possibilities in shipping perishable goods which otherwise required faster, yet more expensive, air freight solutions.

Mangoes attract a high demand and a good price in European markets.

Maersk stepped in to ensure that there is uninterrupted and seamless trade by supporting this shipment by sea in contrast to the air shipment which is the norm in the industry.



Air freight cost increased by 25-30% in April 2019 owing to the stagnation of cargo flights.

Furthermore, since maritime shipping has a longer duration in contrast to aerial, RCM aids in sustaining the quality of produce by extending their shelf life.

² Remote Container Management (RCM) leverages cold-chain technology to create full visibility into the conditions of the refrigerated cargo during transit.

³ CA (Controlled Atmosphere) container is a type of cold-chain container which increases the life span and preserves quality of reefer cargo, especially fruits and vegetables.

For this project, the CA container had Oxygen and CO2 set at specific levels to achieve the successful extension of shelf life.

Maersk is committed towards enabling trade in the reefer segment.

With the successful shipment of mangoes from India to the UK, Maersk has established itself as an expert logistics partner when it comes to Controlled Atmosphere offering and helping the country in increasing exports of perishable cargo.

Commenting on this achievement, Steve Felder, Managing Director, Maersk South Asia, said, "With the difficulties in air freight in the current scenario, approximately 200 metric tonnes of air exports of fruits & other perishables are being impacted every week, leading to a huge loss of produce.

Furthermore, a strong demand for mangoes in European markets, provided us with a chance to leverage our superior technology in preserving refrigerated (reefer) cargo.

Through this shipment, we were also able to strengthen our relationship with government bodies, including the Agricultural & Processed Food Products Export Development Authority (APEDA).

We believe that this successful project will further open doors for trade of more premium commodities."

Pleased with the successful delivery, Anand Shejwal & Pritesh Shejwal, Managing Directors of Bombay Exports, mentioned, "Maersk, with their end-to-end supply chain solutions especially in the reefer segment, has always been a trusted partner to us.

With Maersk's RCM and CA offerings which provides a controlled environment for the products, we were confident to execute this shipment as it provided us with complete visibility throughout the transit until being delivered to our customer.

Having received equally positive feedback from the importer, this trial has encouraged us to pursue further such opportunities in reefer trade."

With 700 FFE's (Forty-Foot Equivalent unit) exported annually through Maersk, Bombay Exports is one of the largest refrigerated container (reefer) exporters out of India for the company.

The importer, Ahmed Exotic Ltd. was satisfied to receive the consignment in the right conditions.

(from: hellenicshippingnews.com, July 17th 2019)

ON THE CALENDAR

- 28-30/08/19 Jakarta Inamarine 2019
- 10-10/09/19 Londra 12th Annual Shipping & Marine Services Forum
- 11-13/09/19 Amburgo Seatrade Europe Cruise & River Cruise Convention
- 11-13/09/19 Amburgo MARINE INTERIORS Cruise & Ferry Global Expo
- 19-24/09/19 Genova 59° Salone Nautico
- 23-25/09/19 Doha Ports & Maritime Evolution, Rail & Logistics Evolution,
Road & Logistics Evolution Qatar Assembly & Expo
- 23-24/09/19 Roma AIIT 2nd International Congress on transport
infrastructure and systems in a changing world
- 03-05/10/19 Piacenza GIS 2019 - Giornate italiane del sollevamento dei
trasporti eccezionali
- 06-09/10/19 Limassol 16th "Maritime Cyprus 2019" Conference
- 15-18/10/19 Oslo 15th GreenPort Congress and Cruise 2019
- 15-15/10/19 New York 11th Annual New York Maritime Forum
- 21-21/10/19 Atlantis The Maritime Standard Awards 2019
- 22-22/10/19 Atlantis The Maritime Standard Tanker Conference 2019
- 23-23/10/19 Parma Logisticamente On Food
- 06-06/11/19 Abu Dhabi The Maritime Standard Ship Finance and Trade
Conference 2019
- 27-28/11/19 Madrid International Cruise Summit 2019
- 03-05/12/19 Pordenone Navaltech 2019 - Marine Technologies Expo
- 04-05/12/19 Barcellona Cruise Ship Interiors Expo

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