

# CONTAINER WORLDS

PORT OF HAMBURG MAGAZINE



**TODAY THE PORT OF HAMBURG IS  
GERMANY'S LARGEST UNIVERSAL PORT.  
IN EUROPE IT HOLDS THIRD PLACE.**



© HHM / Achim Multhaupt

## Dear Readers,

Barely any other success story is as compelling as the container's. Admittedly, inventor Malcolm McLean first had to found his own shipping company and refit vessels in such a way that containers could be stacked securely. Yet he was so convinced about his scheme that he spared himself no effort and persevered with the box.

In Hamburg, the container era commenced with the call by the 'American Lancer' in 1968. Helmuth Kern, then Hamburg's Minister of Economics, had forcefully argued for the expansion of Burchhardkai as a container terminal. We can, in retrospect, be thankful to him that he prevailed. Today, the Port of Hamburg is Germany's largest universal port. In Europe, it actually holds third place. To keep it there, terminal operators and port service providers are working extremely hard to modernize their operations. Digitalization and automation are two crucial aspects that are increasingly coming to the fore.

Yet one container does not necessarily match another. For secure and efficient transport of all manner of freight, there are now more than a dozen types. The Code of Practice for Packing of Cargo Transport Units is one factor providing security. This official IMO – International Maritime Organization (IMO) manual provides clear pointers. The book concerns not just securing the box on the ship. How to secure the freight in the container is also explained. Some companies in the Port of Hamburg have specialized in correctly stuffing containers of different types. Other inventive companies are in process of designing a container so that when empty, it occupies as little space as possible.

Seagoing ships and ports form only one link in the entire supply chain. Inland waterway craft, trains and trucks look after pre- and post-voyage runs inland. Here again, companies are improving their processes and refitting their carriers to be more climate-friendly.

You will find several fascinating articles about the container in the pages that follow. I wish you much enjoyment when reading them. Stay curious!

A handwritten signature in blue ink, appearing to read 'Axel Mattern'.

AXEL MATTERN  
CEO Port of Hamburg Marketing

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HAFEN- UND LOGISTIKSTANDORTE IN  
 NORDDEUTSCHLAND UND SKANDINAVIEN

# Container world innovations

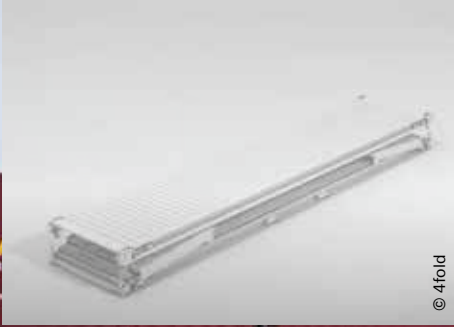
**For over 50 years now, the container has gained acceptance as the preferred means of transport in world trade. It also remains fit for the future.**

Talking of which, sustainability, safety and reliability also remain keywords for container transport. Although the box in all its guises has been proving itself ever since 1968, the container world is still on the move.

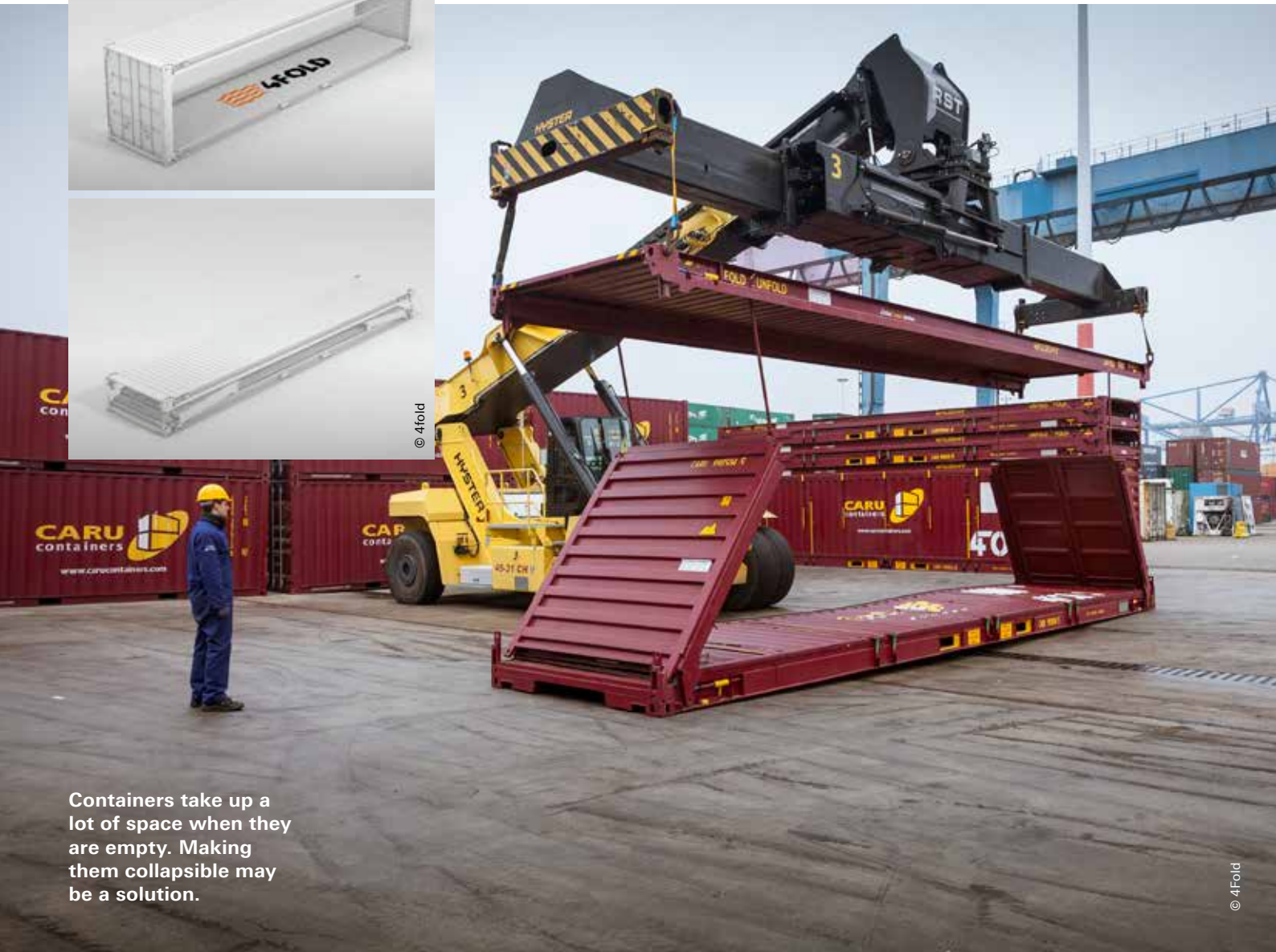
## NO MORE TRANSPORTING THIN AIR

In global goods distribution, movement of empty containers remains a complex problem. Around one-third of all transported containers are empty. Demand for empty equipment is seldom in balance. In times of crisis, this brings supply chains to a halt, causing costs and emis-

sions. Transport of loaded and empty containers calls simultaneously for a multitude of resources in the supply chain. "We can solve part of this imbalance, or at least remedy the inefficiency of 'transporting thin air'," asserts Hans Broekhuis, CEO of Holland Container Innovations, also known as 4Fold. Back in 2013, this company in the Netherlands managed to have the first foldable containers certified under the Container Safety Convention and by the International Organisation for Standardization. Thanks to a specific top-bottom folding technology, the volume of the 4FOLD container can be reduced by two-thirds. Four folded containers can then be made into one unit. This saves space, costs and emissions in transport. From the environment angle, especially, solutions such as this are of great interest and could fundamentally transform the container



© 4fold



Containers take up a lot of space when they are empty. Making them collapsible may be a solution.



© Staxxon

market. Yet market reaction has initially been hesitant. Higher up-front costs and a somewhat conservative attitude from the transport sector could be two of the reasons. For 4FOLD, life continues. "4FOLD is actively seeking alliances within the supply chain with forwarders, shippers, ports, terminals and depots. As a crucial hub in the green corridor Europe – USA, Hamburg is right at the top of the list," says Broekhuis. As a next step, the company aims for coordination with depots on operative challenges and processes related to folding/unfolding, and equipment maintenance. Broekhuis is bullish on the future: "Shippers will profit from the savings in emissions; forwarders, ports and terminals will savour the efficiency and flexibility; and 4FOLD folding containers can be shifted more rapidly and in less space than normal containers."

#### LIKE AN ACCORDION

The US supplier Staxxon is also convinced by the idea. By year-end, the company will be launching its own foldable model on the market, to be tested by shipping companies. Staxxon also envisages advantages for the environment and the climate, especially. "Some 25 percent of worldwide emissions come from the transport sector," explains Santtu Seppälä, Staxxon's CSO. Like an accordion, the Staxxon container can be folded in various stages. Two, three, four or five boxes can be combined like this to replace one regular container. This 'bundle' has already received certification and can be deployed, loaded and secured just like one normal standard container. Thanks to the great flexibility of the meth-



Staxxon containers are folded like an accordion. Up to five containers can substitute a standard unit.

© Staxxon

ods for stacking, Staxxon containers can seamlessly be included in existing logistics processes. The folding itself should cause no bottlenecks, something of importance to the company. An automated process facilitates folding within under three minutes. Folding can also be done manually. A trained team of two needs just ten minutes per container. The model should already be launched on the market next year. Seppälä is assuming that the present crisis situation will lead to more investments in state-of-the-art, environment-friendly container solutions. "Our own will contribute, not just towards alleviating the current crisis, but also to preventing a similar one in the future." ■

Lea Mentzel (Im)



Learn more here:  
[4foldcontainers.com/proposition/](https://4foldcontainers.com/proposition/)  
[staxxon.com/how-it-works/](https://staxxon.com/how-it-works/)

# Men and machines: Interacting instead of competing

**Size makes seaports suitable for far-reaching automation. The Container Terminal Altenwerder (CTA) in the Port of Hamburg is one of the pioneers of digitalization.**

At the CTA – HHLA Container Terminal Altenwerder rail sidings, the portal of rail crane 04 extends over and beyond the nine fully occupied tracks. Weighing 500 tons, this piece of technology shifts itself into the correct position above a still half-empty, stationary train below. A steel box weighing several tons hangs from its rotating trolley. This must be lowered precisely on to a flat container railcar. The castings at the corners of the container slip into the four corner fittings on this railcar.

The rail crane performs very well here, feels Jan Kämena. This CTA operative is sitting in the container gantry crane cabin. He's supervising a test concerning automation of rail handling at CTA. Even on entering service in June 2002, this Port of Hamburg terminal was the most highly automated in the world. CTA remains a model project, and the rail gantry crane aims to advance its development a step further. With support from the Federal German IHATEC – Innovative Port Technologies program, CTA's developers aim to find solutions enabling men and machines to interact in automated operation.

## 30 REAL-TIME SCANNERS ENSURE SAFETY

To enable the facility to spot people and vehicles, it is equipped with 30 real-time scanners that can handle up to 26 million pixels per second. These produce 3D scans of the relevant environment, constantly matching a piece of software with the correct state. Should it spot unknown objects, it stops the crane. Located in CTA's office block, in future remote controllers will each be supervising and controlling several rail gantry cranes. The great majority of standard-

ized handling processes at the station will then be automated. Also involved in the project is iSAM, a specialist in automation technology much in demand worldwide, and since 2020 part of the HHLA Group. "When we opted to get together with HHLA, it was precisely alliances of this kind that were our strategic aim," explains Bernd Mann, iSAM's chairman. The company's focus has so far been on equipping mines and bulk cargo terminals. In the Port of Hamburg, Hansaport as the largest German coal/ore terminal is one of the model projects for the company, which is based at Mülheim on the Ruhr. After bulk cargoes, containers are now firmly in the sights of the iSAM specialists.

## HIGHS COSTS

Their size makes seaports more suitable for scaling than smaller rail and inland waterway vessel terminals, says Mann. Given the immense expense, automation only pays off for larger facilities. "Only a small number of technical limits restrict our solutions, but there are quite a few economic ones," says the iSAM supremo.

As CTA demonstrates, ports are no laggards in the worldwide mega-trend towards automation. Yet some other logistics areas have already taken this still further. Intra-logistics is one example, with its gigantic

**Bernd Mann**  
CEO of iSAM AG

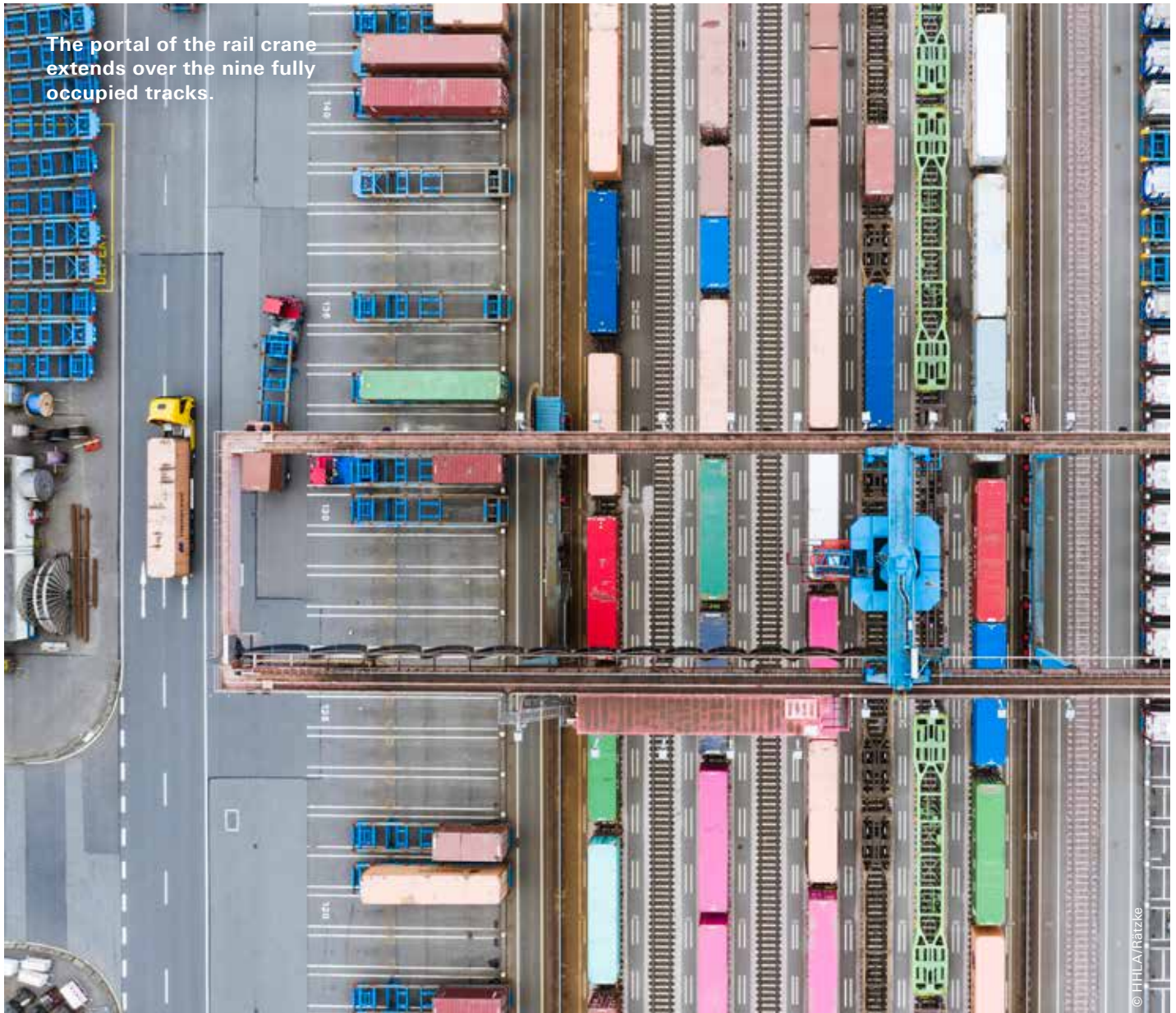


© HHLA-Wolfgang Heumer





Container Terminal Altenwerder is largely automated.



The portal of the rail crane extends over the nine fully occupied tracks.

© HHLA/Hätzke

high-bay warehouses and standardized processes that are simpler to automate. Automated drones flying by night even sort out inventories.

**AUTOMATION ATTRACTIVE FOR SPECIALISTS**

Barely anybody is more aware of the motivation behind such far-reaching steps in automation than Bernd Mann. Even as an undergraduate, his main field was automation technology. He started with iSAM in 1993, and has been Executive Board member responsible for development and technology since 2002, becoming chairman in 2020. In his experience, lack of experts frequently compels his customers to automate processes and procedures.

This can also improve staff working conditions. “Younger colleagues, especially, find cooperating on a remote-control console attractive,” says iSAM’s top executive. “They prefer working in an air-conditioned office, with a coffee kitchen next door, to spending a shift alone and having to climb up a giant device in all weathers.”

Mann knows from his experience in Australia that a remote operation center can produce new prospects, for example, when staff are sought for remote and un-

popular areas. To a great extent, mining operations out there can be controlled from a distance. “These employ hundreds of workers, who no longer need to commute. This has numerous advantages for their families and the environment,” says the head of iSAM.

**DEPLOYMENT EASIER TO PLAN**

In high-wage countries, among them Australia and those in the EU, such jobs are more secure in the long term, being more productive and therefore more competitive. Mann is aware of another important reason for the onward march of automation: “The strain on technology is milder than if a human being is handling it. Then this usually very costly equipment last longer.” In addition, their performance can be monitored continually, simplifying planning and making them easier to embed in complex terminal processes.

The Chairman of iSAM-Chef concedes that as a result of automation, in some areas fewer staff are required. Yet he sees fresh employment opportunities in terminal operations: “Nobody in the ports any longer yearns to have to drag around heavy sacks. It is primarily the less attractive jobs that will disappear. Sufficient work

remains, yet this tends to be in areas such as design, management, supervision and maintenance.”

#### PEOPLE REMAIN INDISPENSABLE

The question remains, where are the frontiers of automation? The answer is reassuring: “Computers cannot solve any problems. In tricky situations, humans are more efficient. They can use their experience to make transfers, i.e. make decisions beyond the scope of programmable routines.”

Computers would not be capable of finding creative ‘diversions’ or of deciding between two poor solutions, according to the iSAM chief’s analysis. In such situations people seek compromises, e.g. to complete unloading of a ship punctually. Sometimes, fifty boxes have to stay put or be trucked to the next port .

Humans remain indispensable, not just for overcoming crises and exceptional situations, but also primarily for new ideas and creative improvements, for planning and setting priorities. Increasing utilization of intelligent machines can help in shaping a sustainable future. The next challenge also beckons at the Port of Hamburg’s CTA: one after another, even the container gantry cranes will be automated. ■ HHLA/red

### The company iSAM AG

Based in Mülheim on the Ruhr, iSAM was founded in 1983. The company employs almost 50 staff there and has branches in the USA, Australia/Asia and Canada, its core markets.

Operating worldwide, the company specializes in automation technology. iSAM has succeeded in completely automating waterside loading/unloading cranes for bulk cargoes. Automatic discernment of ship movements and operation of load-handling devices is one key technology here. iSAM therefore has the building blocks for fully automating a container gantry crane.



Find more information at: [isam-ag.de](http://isam-ag.de)



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## Keeping it cool

© Hapag-Lloyd

**Anybody transporting perishable and sensitive produce will depend on a goodly portion of expertise. Transport temperature, humidity and air renewal all need to be set precisely at all times.**

The Port of Hamburg is an essential hub for transport of foodstuffs throughout Germany. Packed in a container, nowadays the produce usually arrives aboard the seagoing vessel at the terminal. There it starts the last section of its usually lengthy journey by rail or truck. Yet one container is not identical with another. Especially for the transport of perishable and temperature-sensitive produce, the correct equipment is essential. Bananas from overseas, but also fish from Scandinavia need identical refrigeration throughout the trip, if quality is to be maintained. Dedicated reefer containers do the job.

### OPTIMAL CLIMATE

Most reefer containers are equipped with similar technology. The principle there always remains the same. An integrated cooling unit and specific storage regulations keep the air in the box at the desired temperature. However simple the idea may sound, highly complex technology is essential for ensuring an uninterrupted cooling chain.

Fruit and vegetables, for example, are known in the transport industry as 'living commodities' and must be handled accordingly. After the harvest, they take in oxygen and give off carbon dioxide and ethylene gas. Were fruit and veg to be transported in a convention-

al container, the ripening process would continue uninterrupted. It would even be accelerated by rising temperatures in the interior of the box. That would be fatal for such produce as bananas, with Germany annually importing around 1,400,000 tons. The journey from the top countries of origin in South and Central America frequently lasts more than ten days. To ensure that a banana arrives firm and fresh at a supermarket, Hapag-Lloyd, for example, makes use of the fruit's breathing process. Should sensors notice too high or too low a quantity of oxygen and/or carbon dioxide, ventilation is adjusted. Temperature is also automatically adjusted. By controlling the composition of the air in the reefer container, the shipping line also slows down the ripening process and lengthens the shelf-life of the sensitive produce.

Depending on the type of fruit or veg, requirements of the transport climate differ, so a mass of expertise is required. Blueberries, for example, react sensitively to CO<sub>2</sub>. These therefore travel in a reefer container with a vacuum pump and a possibility for gassing. Since it can be gassed during transport with carbon dioxide, as well as nitrogen, this type of container is especially suitable for produce whose natural ripening process does not suffice to produce the desired atmosphere.

Reefer containers always ensure the correct temperature of perishable goods, even in different climatic zones.



© Hamburg-Süd

### OPTIMAL MONITORING

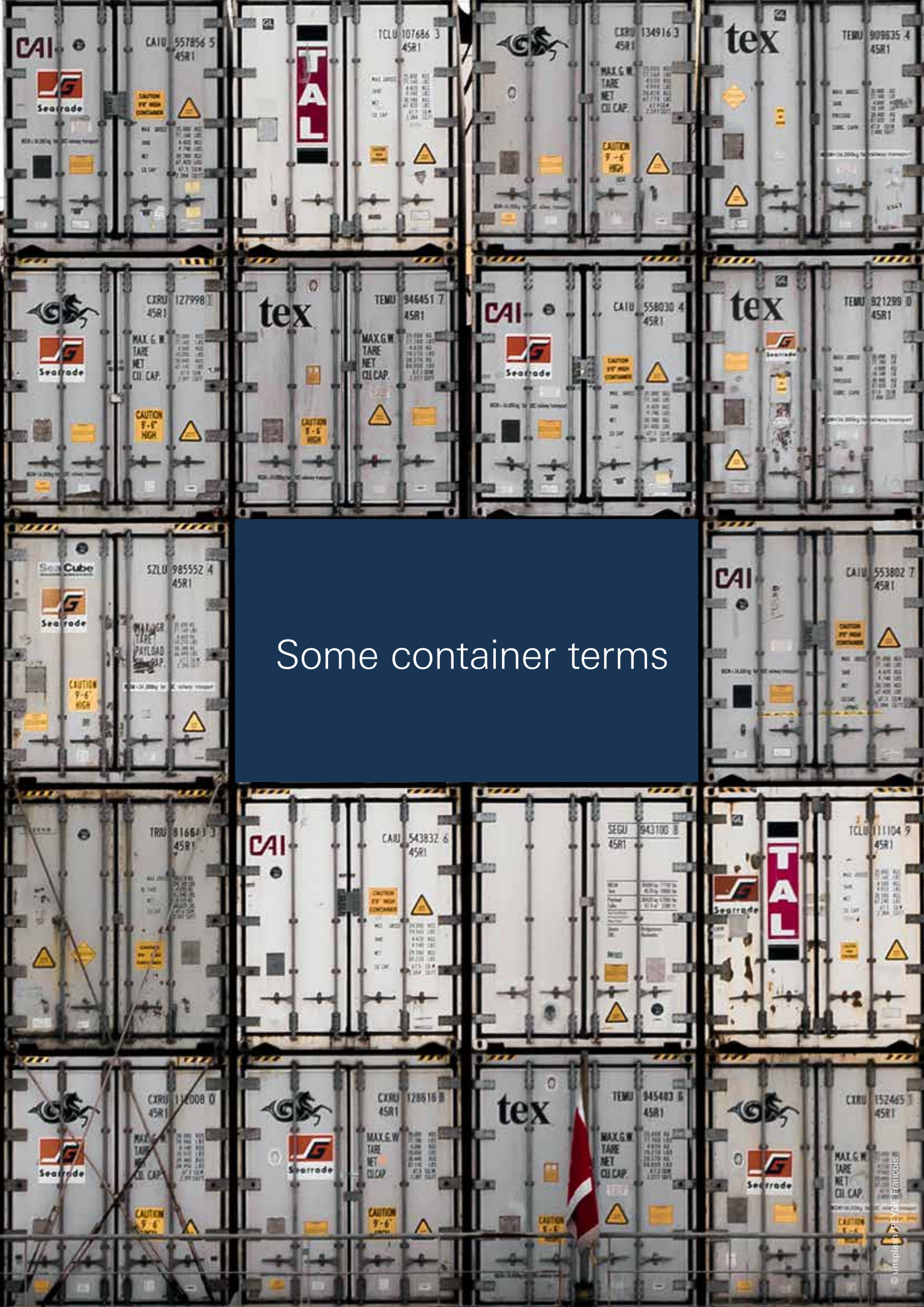
To enable customers to be sure that the refrigeration chain has not been broken at any point, Hamburg Süd equips reefer containers with RCM – Remote Container Management technology. In real time and along the complete transport chain, RCM monitors such parameters as temperature, relative humidity, oxygen and carbon dioxide concentration within the reefer container. Such data enable the supply chain to be better controlled, shaped distinctly more transparently, efficiently and safely. It thus releases immense potential for saving costs. Data on all essential steps in container transport – e.g., delivery at the terminal or loading and discharge of the vessel, can be retrieved by the customer. This can also be passed on to the recipient, for example. Should a pre-set parameter or threshold be reached, noti-

fication also follows automatically. In addition, if critical thresholds should be exceeded or undercut, the operations team receives an alarm signal. This enables them to intervene appropriately and ensure cargo quality.

To make supervision of reefer cargo even simpler, Hamburg Süd has developed the virtual assistant 'Captain Peter TM'. This new product offers comprehensive services relating to reefer shipments. One example of these consists of round-the-clock support from reefer cargo experts. Should Captain Peter warn customers with a personalized notification of problems during shipment of a container, the Hamburg Süd team is available at all times. To bring the cargo to the recipient in the desired quality, a Plan B can then be drawn up together. In addition, relevant data on the entire shipment can be downloaded and analysed. ■ Im



learn more at:  
[youtube.com/watch?v=Fk0\\_14Cb0Ng](https://youtube.com/watch?v=Fk0_14Cb0Ng)



Some container terms

CAI  
Searoad  
CAIU 557856 5  
45R1  
CAUTION 9'-6" HIGH

TALL  
TCLU 107686 3  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG

CXRU 134916 3  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

tex  
TEMU 909635 4  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG

CXRU 127998 1  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

tex  
TEMU 946451 7  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

CAI  
Searoad  
CAIU 558030 4  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

tex  
TEMU 921289 0  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG

Seacube  
Searoad  
SZLU 985552 4  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

Some container terms

CAI  
CAIU 553802 7  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

TRU 816643 3  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

CAI  
CAIU 543832 6  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

SEGU 943100 0  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

TALL  
TCLU 111104 9  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG

CXRU 114008 0  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

CXRU 128616 0  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

tex  
TEMU 945483 6  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

CXRU 152465 3  
45R1  
MAX. G.W. 22,000 KG  
TARE 4,400 KG  
NET 17,600 KG  
MAX. NET CAP. 17,600 KG  
CAUTION 9'-6" HIGH

Containers dominate the scene in the Port of Hamburg. If freight such as consumer goods, high-grade vehicles and raw materials is to travel securely and undamaged, the boxes can hardly be ignored. Dimensions and design characteristics determine differences between the following container types:

© Yellowimages

### STANDARD CONTAINERS

Standard containers are the most common form. As a rule, these are 20 or 40 feet long – six or twelve metres – are fully closed and consist of corrugated, weather-resistant steel. At one end, at least, these have two doors. Some are fitted with extras, for example lashing for transport by forklift.



© cr-container

### HIGH-CUBE CONTAINERS

High-cube containers are largely identical with standard containers, yet are 30 cms higher. The advantage is that they offer space for cargo up to 2.70 metres high. Aside from normal dimensions, some high-cube containers are 45 feet long.



© cr-container

### HARD-TOP CONTAINERS

Their detachable metal roof enables hard-top containers to be loaded and unloaded from above. That speeds up loading. These are especially suitable for outsize or very heavy general cargo that can be transported with the roof open.



© chs-container handel gmbh

### OPEN-TOP CONTAINERS

The roof of an open-top container consists of bowed slats / Spriegeln covered by a tarpaulin. This may prevent stacking of the container, but allows protection of oversize freight whilst in transport.



© maersk



© chs-container handel gmbh

### FLAT-RACK CONTAINERS

Flat-rack containers consist of a floor that can support extremely heavy loads and stable side walls, but are also available without side walls or a roof. This makes them suitable for transport of bulky freight, for example building machines, which do not fit into a standard container or must be loaded sideways.

### PLATFORM CONTAINERS

'Platform container' is the description for a floor without sides or end walls. This is extremely durable. Owing to its comparatively low own weight, it has a higher load capacity than containers of other types.



© chs-container handel gmbh



© cf-container

### BULK CONTAINERS

Bulk containers are suitable for transporting suction cargoes such as spices, grain and sand. With the help of tubes, the freight is fed into the container through three apertures and can be poured out again through two small hatches after transport.



### TANK CONTAINERS

Tank containers are used to transport liquid cargoes such as juices, oils or fuel. They usually consist of a tank mounted in a steel framework.



© mc-containers



© mc-containers

### VENTILATED CONTAINERS

Ventilated containers have waterproof slits on the upper longitudinal members. These enable air to circulate. Sometimes they also have a fan in addition. Since these are mostly used to transport coffee beans, 'coffee containers' is another term for them.

### INSULATED CONTAINERS

This type of container is specially insulated. Cold air is drawn into the container, and hot air expelled again, through two apertures known as port-holes. This keeps the interior temperature constantly cool.



© mc-containers

### REFRIGERATED CONTAINERS – REEFERS

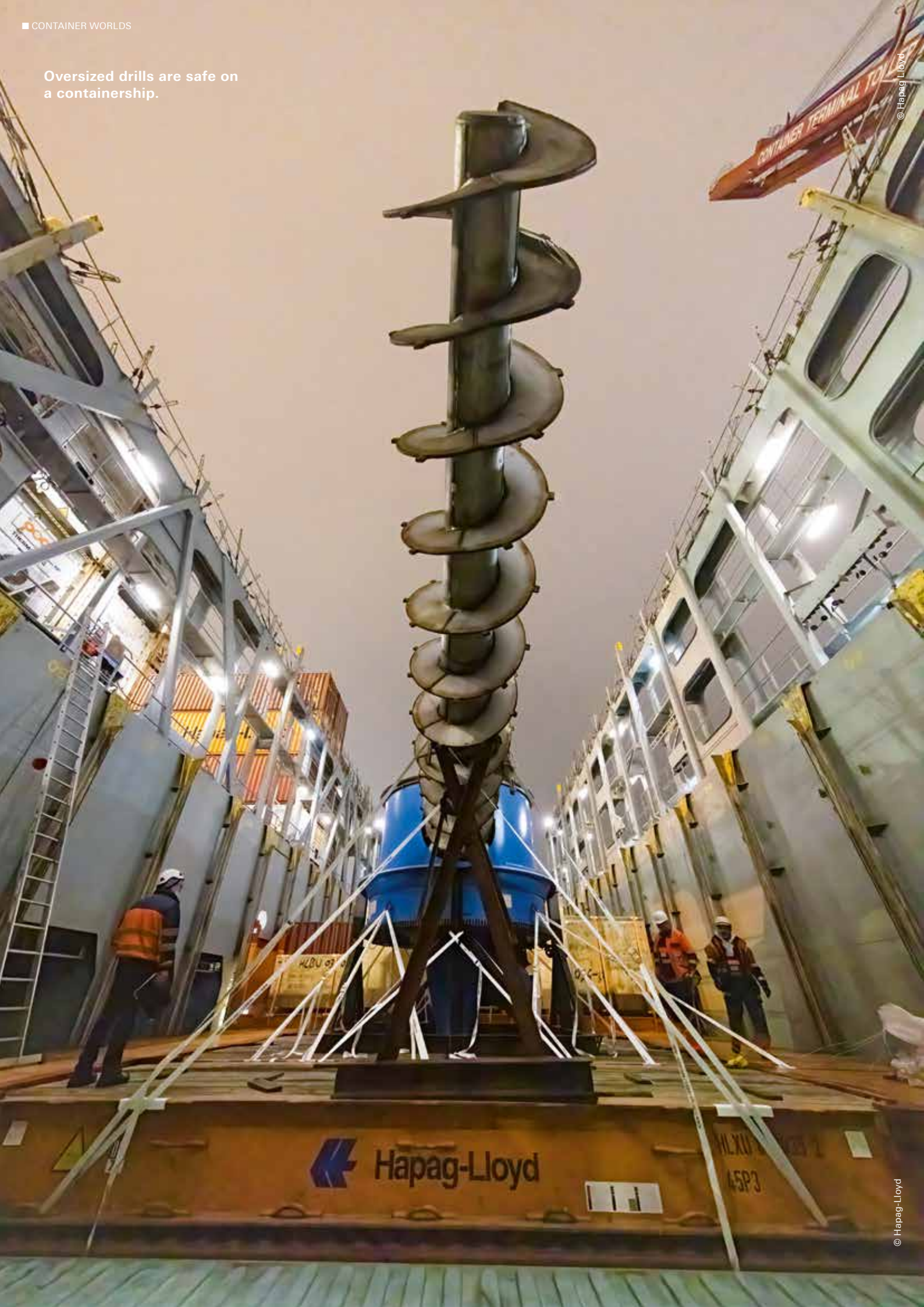
Reefers have an integrated cooling unit to regulate the temperature inside the container. They are therefore suitable for transporting such perishable cargoes as foodstuffs, chemicals or, just recently, Covid-19 vaccines. Installation of the unit inside the container leads to a loss of volume and load capacity. ■

Saskia Haßkamp



© cr-container

Oversized drills are safe on a containership.



# Every detail is crucial on board

**Correctly securing cargo on a containership has a threefold impact – on the cargo, the crew and the environment. In pursuit of continuous improvement, Hapag-Lloyd concentrates on details. Years ago, the company developed a sustainable solution: The steel-floor container.**

On board out on the high seas, everybody needs to rely on cargo safety. The number of containers in the industry that go overboard annually may be only a matter of millionths of the total transported. Yet even losses of single boxes can inflict great damage – if hazardous goods are involved and harm the environment. To secure cargo optimally, container shipping companies, their customers and packers turn to the CTU – Code of Practice for Packing of Cargo Transport Units. The official guidance from the IMO – International Maritime Organization provides clear and simple guidance. This covers both fixing the container to the ship and on other hand, securing the cargo inside the container.

Through corner castings on the containers, these twistlocks attach them to the vessel and to one another. Lashing rods also fix the vertically stacked containers to the ship. To enable them to be separately stowed or unloaded, container stacks are no longer diagonally linked. In heavy seas, this freedom gives them improved elasticity.

The stability of the vessel must also be taken into account. A containership's complex safety systems are measured using empirical formulae from the classification societies. Longitudinal, diagonal and vertical stresses are also taken into account. Every link in the safety chain is crucial.

Yet safety in transport already starts away from the containership, in port logistics and wherever the boxes are stuffed. Secure loading of special cargo, especially, requires consultation among all those involved. In the Port of Hamburg, for example, Hapag-Lloyd works closely with HHLA to heave heavy cargo like railway construction machines on to a containership. For a start, these have to be delivered to a special pier – see photo. "Where load safety is concerned, the level of quality in the Port of Hamburg compared to other ports worldwide is among the highest – and a very fine reference," stresses David Piel, Senior Manager Special Cargo for Hapag-Lloyd. "When I have to send special cargo to China or Asia, I am happy to share photos from Hamburg with our teams on the spot to show them the best way of securing cargo."

## STEEL HAS REPLACED A TIMBER-BAMBOO HYBRID

Over ten year ago, Hapag-Lloyd was already aiming to make securing of cargo, and especially the container floor, sustainably better: More stable, requiring fewer repairs, and recyclable. The company therefore developed a

**David Piel**  
Senior Manager  
Special Cargo  
Hapag-Lloyd



Properly secured,  
goods can withstand  
even a storm.



Many lashing points help in securing large and heavy goods.

© Hapag-Lloyd

steel floor. Initially, this was used for special cargoes and hazardous goods. “Details are often decisive for securing cargo,” says David Piel. “One crucial aspect is that cargo must be secured irrespective of the floor material. Nowadays though it is somewhat unlikely that on opening a container door, you’d still find a wooden floor.” All sorts of different flooring materials such as bamboo, plastic, OSB or steel in fact, can be used.

Today’s stability targets mean increased use of steel. Environmental protection has become more important. One question comes up frequently: How sustainable are the materials used? A box with a steel floor that will one day be scrap can be recycled one hundred percent. One with a wooden floor is different in that it contains glue.

A steel-floor container is suitable for cargoes of all types. They contain no chemical additives and last longer than boxes with wooden or bamboo floors. In 2013 Hapag-Lloyd included them in

their permanent repertoire – initially mainly in the segment of 20-ft standard/special containers. Use of wooden beams plus lashing belts is the best method of keeping cargo in its place inside the container. Anti-slip material enhances friction and is used in containers with steel floors.

**MORE LASHING POINTS FOR SECURING CARGO**

“Numerous heavier point-loads can be loaded per running metre. This makes the steel-floor particularly interesting for such heavy loads as machinery,” explains David Piel. For comparison: A 20-ft wooden floor can take 4.6 tons per metre, the same box with a steel floor, 7.6 tons. The difference is still greater with a 40-ft container, where a wooden floor can tolerate three tons per metre, a steel one, twice as much. “In addition, there are more lashing points than with the wood-bamboo hybrid version, so that lashing cargo can be done efficiently.”



© Hapag-Lloyd

In addition, steel-floor containers can be cleaned so that, without any residues from previous loads, they can be stuffed odour-neutral with fresh cargoes. These can include perishable foodstuffs, or clothing. Steel-floor containers are therefore in demand from customers in the coffee trade, among others. "Unlike the wooden floor, a steel one absorbs no odours or liquids," explains David Piel. "With the slightly ribbed profile, the cargo is not wetted by escaped liquids or condensation." Steel floors are therefore in growing use for standard containers. For special-cargo and hazardous-goods shipments, for a long time they have already been built into open-top and high-cube containers.

"Every item of cargo must be secured in accordance with its specific properties and satisfy the requirements of the sea territory being crossed," says David Piel. "One rule of thumb can be to invariably design cargo safety as if for the most demanding carriers. Good cargo safety is the same as an insurance." David Piel applies this principle to his personal life. Departing on holiday by car, he packs his suitcase like a container: "First I juggle with spaces in the case, then in the boot. I also using lashing belts there and avoid having any gaps. Only then can I have peace of mind when I leave on holiday." ■ Hapag-Lloyd/red

## Boosting transparency and checking hazardous cargoes

The Hapag-Lloyd fleet includes ships with a capacity of 1.8 million TEU and containers offering three million TEU. As one of eight topics, last year Hapag-Lloyd firmly anchored cargo safety or 'Transport safety' in its extended sustainability strategy. The aim is to transport 100 percent of containers safely to their destinations.

Among its targeted sustainability measures, Hapag-Lloyd aims to further increase transparency about lost containers and damaged cargo. By 2023 Hapag-Lloyd will equip its entire container fleet with real-time tracking. Monitoring devices will transmit data on every container, also monitoring any sudden shaking up of the container. Digitalization is making container shipping not simply more efficient, but also safer. To sharpen up awareness of holistic cargo security, Hapag-Lloyd is supporting such flagship projects as the World Shipping Council's 'Container Lost at Sea' working group and the industry-wide MARIN survey. Hapag-Lloyd/red



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**Cargo securing is especially important for heavy goods that do not fill up the entire container.**

## Skilled hands for extra safety

**Whoever transports freight by sea needs to protect it, not just from accidents, but also from weather conditions, temperature fluctuations and shunting bumps. Not only on board the seagoing vessel but also when stowing it in a container, securing cargo by the rules is absolutely essential.**

What exactly this should look like varies from time to time. Above all, it depends on the nature of the goods – after all, not every type of load fits on pallets or in boxes and can be stowed in a form-fit manner.

### **NO TWO CARGOES ARE THE SAME**

The Port of Hamburg offers various specialists in securing cargo. PCH – Packing Center Hamburg is one of these. At its Wollkämmereistrasse site, every day containers are packed with all sorts of items for export, and unloaded from others as imports. Apart from packing groupage, FCL and out-of-gauge containers, the experts here also see to the seaworthy packing of freight.

In particular, any freight marked as hazardous naturally needs to be stored, packed and secured separately.

Yet even with normal freight, cargo security is of paramount importance before it can proceed to further transport aboard seagoing vessels. As a rule, most of the freight has already been stowed on pallets or in wooden crates in such a way that the precise contents are neither known or of relevance for being secured in the container. Such cargo belongs in the LCL – ‘Less than Container Load’ – category. Here a whole variety of items from different shippers congregate in one container. These are delivered individually and then consolidated in the packing center.

A second variant of containerized cargo consists of complete shipments from one shipper. This can also consist of pallets and crates. Yet securing cargo for some objects – such as building elements, vehicles or machines – requires a special technique. On occasion,

such freight will invariably call for the maximum capacity or dimensions of a 40-ft standard container.

## FCL or LCL?

In seaborne transport, a distinction is made between containerized cargo of two different types. The abbreviation LCL stands for Less than Container Load and describes the combination in a single container of general cargoes from different shippers. As a rule, FCL – Full Container Load – freight is project cargo from a single shippers, filling an entire container.

## EVERYTHING NORMED

The CTU Code of the IMO – International Maritime Organisation and the ILO – International Labour Organisation lays down the requirements and criteria for securing cargoes. This replaced the previous container packing guidelines in 1997.

Standard containers are known as ISO containers. These are of normed dimensions, facilitating container stacking and handling at terminals.

Containers for transport by sea are equipped in advance with devices for securing cargo. These consists of lashing bars on the corner posts and the roofs and longitudinal members; lashing rings mounted in the floor; ‘corrugated’ steel sidewalls; and ideally, a wooden container floor. The appropriate cargo lashing devices can then be secured at these points.

## STOW TIGHT-FIT IF POSSIBLE

From box to box, the differing characteristics of the freight items poses a fresh challenge for the packing experts. “It’s rather like playing Tetris,” is

“It’s rather like  
playing Tetris.”

PCH CEO Ole Brüggmann’s imaginative way of describing the process of stowing LCL cargo in a standard container.

The most vital principle here is always: Cargo inside the container must be secured on all sides against slipping. Securing on the door side is especially vital. Fundamentally, packing commences with the largest elements. Stowage must be tight-fit. “The less filler material required, the better,” explains



© HHM / Hirsch

Iron bars are also  
transported in  
containers.



If possible, the goods are stacked in the container in a form-fit manner.

© HMM / Hirsch

Matthias Biel of PCH. Wherever crates and pallets cannot be stowed tight-fit to each other, use is usually made of filler materials. The gap between objects packed may not exceed 15 centimetres. When the gap between pallets or crates is greater, then airbags and/or wedge timbers can provide added security.

### WSG – Warenumschlag Station Grasbrook GmbH

Freight Packing Station Grasbrook has operated in the Port of Hamburg as an independent operation in the Port of Hamburg since 1996. The new facility on Schilfstrasse was added in 2005. This site facilitates a still better transport link within the – former – freeport, offering a private siding and a shed for hazardous goods. WSG was enlarged with the purchase of additional land in 2021. Facilitating covered hall storage of heavy cargoes, among other equipment WSG now has a 30-ton port crane.

### PCH – Packing Center Hamburg

Situated on Wollkämmerestrasse in the heart of the Port of Hamburg, PCH – Packing Center Hamburg was founded in 1988. Its core business is in unloading import groupage containers and loading those for export. PCH also handles FCL and out-of-gauge containers of up to 45 tons. These packing experts also offer seaworthy cargo packing.

“The aids and methods for securing LCL cargo are always the same,” explains Ole Brüggemann. Among those available are air-filled cushions, chipboard panels of various thicknesses, and wedge timber. All wooden elements bear an iPPC stamp. Both the use and the quality of materials must be in accordance with the rules. For protecting native woodlands and preventing intrusion of pests and mould, the IPPC – International Plant Protection Convention – lays down the appropriate rules for handling timber.



Prior to closure of the containers, lashing material frequently serves to secure cargo. Lashing points on the corner pillars as well as the container floor/roof supply the lashing points. 'Lashing' is the term for the process of fastening down and tying up the cargo to prevent it from slipping. Apart from lashing in the container, lashing down is subsequently essential on the seagoing vessel.

#### TIGHT-FIT STOWAGE NOT ALWAYS FEASIBLE

Crates and pallets can normally be tight-fit stacked and secured easily. Yet not every cargo is quadratic. Bundles of steel pipes weighing almost 23 tons have arrived at the WSG – Grasbrook Cargo Handling Station. From a single shipper, these are due for containerized transport by sea. The bundles of pipes accordingly constitute an FCL shipment. "For special cargo like these bundles of pipes, prior to any stowage we need to prepare a container," explains Tomas Orsolíc, Works Manager for WSG.

Specifically, this case involves both a great weight making the container almost fully loaded, and also special length dimensions. The container is twelve metres long, the bundles only roughly between seven and eight metres. Tomas and his colleagues therefore shorten the interior of the box with a reinforced

interim wall. This ensures that for container handling at the terminal, the pivotal point of the project cargo will lie and remain in its centre.

The pipe bundle itself is held together with belts and stowed in the container by two forklifts. Whereas the crates and pallets in the LCL shipments can readily be loaded by a single forklift driver, this type of project cargo calls for teamwork. The lashed pipe bundles are finally pushed into the open container with the aid of a wooden sliding floor. This simplifies all pushing/positioning in the container and also prevents any damage to the container floor itself.

Perfect positioning of non-normed cargo like this is not always achieved at once. For an LCL shipment, similar package dimensions and characteristics primarily call for a practiced eye in correctly arranging/aligning the contents of a container. Unusual project cargo calls in addition for cooperation and precise consultation on stowage coordination.

These Hamburgian packing experts rely on expertise, precision in observing the regulations, and the team's sense of responsibility. "With every shipment arriving here, we learn something new. What finally matter are experience and good cooperation. Here we have both," says Ole Brüggemann. ■ Birte Hirsch

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# Heavyweights are welcome

**Machinery or construction elements may at times be wider than a flat rack container, but they were invented precisely for such project cargo.**

Not all cargo fits in a 20- or 40-foot container. Many machinery segments, vehicles or other unwieldy units are simply too wide. However, to get them to their goal, stowage experts often use what insiders call 'flat racks'. These have open sides with foldable end sections at both ends limiting the cargo size. Both competence and expertise are needed for loading and securing them. In the Port of Hamburg, staff at a number of companies possess precisely these expert skills. One such company is TCO Transcargo. "As a matter of principle, for each project we consider the entire supply chain. Since it is important where the load should be handled. Frequently, there are limitations at the locations that we have to take into account when loading the cargo," says Thomas Wolnewitsch, Joint CEO at TCO Transcargo.

This is why TCO accompanies each shipment from the very start. "If the technical equipment is lacking

at the port of destination, then there is a big problem. Not every port has reach-stackers with the necessary load capacity or lifting power," explains its Joint CEO Rainer Fabian adding: "As soon as we are talking about a heavy lift of up to 50 tons going out on a flat rack, then the load is usually packed in the port. When things are running really well, here in Hamburg we pack between 20 and 30 flat racks week for week. Each and every load is different. Over the last twenty years we have gathered a lot of expertise."

## TAKING EXTREME CONDITIONS INTO ACCOUNT

Two factors have an enormous influence on the container and cargo. On the one hand, it is the varying climatic conditions, and on the other, the mechanical influences impacting both the load and the container during the voyage. "Nobody should un-

Even crane parts can be transported on a flat rack.



© TCO



© TCO

**Vehicles like these tractors have to be secured individually before transport.**

derestimate the weather. If the cargo on a flat rack is not properly covered, it can be drenched and become damaged. After all, a containership on voyage from Europe to Asia passes through three climatic zones. A powerful monsoon can soak wooden packaging, if the crate is in the open," stresses Wolnewitsch. The sun's rays also have to be taken into account when packing, he adds.

The second important issue when transporting cargo on a flat rack is the mechanical impact. "In the vertical direction a momentary acceleration of 4g can occur. This happens, for example, when a container lands badly on the quay or into the ship. This is a daily occurrence, says Wolnewitsch. To avoid damage being caused like that, just how the load is secured really matters. TCO Transcargos experts calculate exactly what load securing is needed for each shipment.

For each shipment the weight has to be evened out and distributed equally across the flat rack. As soon as the point load is too high, the shipment should no longer be transported on a flat rack. "In such cases, we frequently use a substructure to spread the weight. When it comes to this almost every product is unique. Then you need real experience during assembly," says the CEO. Taking tractors as an example, it is very important to support them. This is done with a wooden frame. When securing cargo, wood is the predominant material.

### TRUST IS IMPORTANT

Not every shipment is packed by TCO. Some come from the manufacturers or external packers. What really counts is that the packer doesn't hold back with material. As soon as the wood on the crate's side walls is inadequate, it may break while being lashed. "With each shipment we pay extreme attention to these subtleties, at times making im-

### Rainer Fabian and Thomas Wolnewitsch

Managing Directors at  
TCO Transcargos



provements," says Wolnewitsch. Equally, the data has to be accurate. "It's enough when the intersection of the centre of gravity is mounted on the wrong side. This can lead to incorrect calculation of the load securing dimensions, with all the consequences," stresses Wolnewitsch. His colleague Fabian adds: "Digitalisation has entered the world of securing cargo. For example, currently virtual reality applications are in the test phase, meaning that we can almost take a look inside the packaging." However, it is the staff with their skill and experience, who judge the cargo securing and carry it out reliably. ■ Ralf Johanning (jh)

### The company TCO Transcargos

Founded in 1991, the company specializes in cargo handling, warehousing, distribution, and container logistics. With two locations in Hamburg-Wilhelmsburg on 'Hohen Schaar' and 'Eversween', TCO Transcargos provides a good connection to the terminals. The company owns 25 electronically-secured warehouses covering an area of more than 100,000 square metres. The team consists of 120 employees in commercial and blue collar areas.



Find more information at: [tco-transcargos.de](https://tco-transcargos.de)



## In striking pink

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**Trucks are among the main means of transport in the Port of Hamburg. Last year, Bremerhaven-based forwarder GCD Glomb Container Service transported 254,200 TEU – 20-ft standard containers. To optimize processes still further, the company is working on electronic exchange of as much data as possible.**

In Germany's largest port, forwarder GCD Glomb's striking pink trucks are hard to miss. That's not just a matter of the fluorescent livery that founder Sigward Glomb senior first introduced as a protection against theft in ports then without any security staff. The main reason for their presence is that the Bremerhaven-based company specializes in shipping sea containers and is therefore regularly on the move to and

from Hamburg, Bremerhaven and Bremen in the 'wet triangle'.

"The Port of Hamburg is of immense importance for us," stresses Sigward Glomb junior, Joint CEO with his brother Matthias of the company specializing in container transport, founded by their father Sigward Glomb senior, in 1980. The company's annual turnover is now around 30 million euros. Along with short-



## The company GCD Glomb Containerdienst

In 2021 GCD Glomb Containerdienst transported 254,200 TEU. The following equipment is available: Reefer chassis, multi chassis, 45-ft multi-chassis, platforms, tank chassis, chassis for rolling trailers, 20-ft and 40-ft tipper chassis, two-axle low-bed trailers, three-axle low-bed trailer, three-axle, five-axle and eight-axle semi-low-bed trailers plus BF2s and

BF3s - second-and third-generation vehicles. Absolutely new and in Germany – unlike Sweden – a USP for us is a side loader that without any ramp can independently collect/deposit containers at the customer's.



Find more information at: [glomb.com](http://glomb.com)

haul traffic – including port tours accounting for around 20 percent of its business - domestic German long-haul traffic with the Port of Hamburg accounts for around 80 percent.

Smooth processes in the Port of Hamburg are therefore of great importance for Glomb, any additional effort costing time and money. When the slot booking procedure, including a quotas system - was introduced at the end of 2017 to reduce waiting times, Glomb was among the many sceptical forwarders. They were primarily thinking of the additional work and administrative effort this would cause for logistics companies.

In addition, the number of no-shows, or containers booked but not then delivered, rose sharply: "Some forwarders booked as many time windows as possible to be able to react flexibly with their vehicles,"

stresses Sigward Glomb junior. "They were at the same time blocking other forwarders." This sometimes made slots hard to obtain – even for a forwarder like Glomb that makes no dummy-bookings of this kind.

### SUPPORT FOR SLOT BOOKING PROCEDURE

Yet the situation has meanwhile improved. "With tour planning, there are fewer problems in delivering the container, because whether all the essential documents for delivery or collection are available has been established in advance," stresses Glomb. "That's a good thing." Many forwarders have long been convinced that such a procedure fundamentally makes sense, being indispensable for generally improved coordination of rising cargo volume per vessel, as well as the truck calls. "Time windows also of-

**A side loader allows the driver to lift containers independently.**



for the advantages that many problems can be sorted out in advance,” reports Glomb. Yet forwarders are also requesting a further improvement in the form of increased transit time for trucks at the terminals, plus availability of more time windows.

The Bremerhaven-based forwarders operate with 60 of their own trucks, including five low-loaders, 120 container chassis and around 200 vehicles from sub-contractors. Like terminal operators HHLA and Eurogate, they are continually striving to make container transport more efficient and sustainable. At the turn of the year 2021/2022, for example, the company almost completely digitalized its bookings file. With the aid of electronic fleet management, track & trace and complete electronic booking transmissions, including status reports for the customers – primarily shipping companies, seaport forwarders and transshipment companies – Glomb can present boxes as punctually as possible at the loading point, proactively notifying customers.

Finally, this family business needs to handle import and export bookings reliably and flexibly for tramp ships, often at short notice. “Since the pandemic,

however, ‘turbulent times’ have set in,” reports Glomb. “Virtually no ship arrivals can be planned, and on imports, especially, dates are frequently put back at short notice. Especially with those at weekends, that’s a real challenge.”

Yet currently scarce cargo capacities have caused something of a change on the customer side: “You realize how hard it is to obtain truck capacity and how high fuel prices have risen. Furthermore, freight costs for the land route are only a fraction of those for sea freight.” Unlike the situation previously, higher costs can therefore be passed on: “The thinking has completely changed,” stresses Glomb.

**BOOSTING STAFF LOYALTY IN A FAMILY-RUN COMPANY**

In challenging times, the invariably high status of the 170 staff in this family business counts for more than it usually would. Glomb accordingly still relies on its own upcoming generation, annually training between three and five truck drivers, and five to seven office

staff. “By acquiring especially good trucks with powerful engines, for example, we try to secure good working conditions for our roughly 85 drivers,” reports Glomb. “Equally important is appropriate remuneration, which over the last ten years has risen by around 30 percent.”

In-company and vocational training for drivers are a further important aspect: “We voluntarily meet the costs for the five training modules required every five years for the extension of driving-licence validity.” As part of the system of premiums drafted by the forwarder, drivers are rewarded with 200 euros per month for working presciently and conserving energy. To save fuel and protect the environment, Glomb has electronically limited the maximum speed of its trucks to 82 kilometres per hour. “Many welcome that because they find driving more relaxed with a less frequent need for overtaking manoeuvres,” reports Glomb.

When acquiring new vehicles, Glomb is also paying a great deal of attention to alternative fuels: “Originally, I was thinking primarily of LNG. Yet the current move-

ment of prices means that liquefied gas is currently no longer economic. Battery-electric propulsion systems, however, are of interest for city centres and port tours – we are closely examining these just now.” ‘A handful of vehicles’ is one possibility. A few questions remain to be clarified, in respect of commercial viability, potential for loading, and subsidies.

**Sigward Glomb jun.**  
CEO atGCD Glomb Containerdienst



Glomb also aims for another step forward, on the IT side: “We are thinking just now of software for the company that would entail a complete transformation of all in-house IT and telematics,” says Glomb. “Yet this is like open-heart surgery, needing to be well planned.” As logistics people are aware, digitalization offers both tremendous opportunities, and challenges. There’s only one option in the last resort, as Franz Kafka realized: ‘Paths are made by walking.’ ■  
Claudia Behrend



## Was Deutschland braucht, bewegt die HHLA.

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# It's an ongoing journey

**It's not just in the world's seaports that everything revolves around the container. Once discharged on the quay, in whatever livery the box goes off inland – whether by rail, truck or inland waterway craft.**

Around 300 kilometres of track, almost 2000 weekly services and 200 freight trains per day make Hamburg the largest rail port in Europe. Almost every second container leaves or arrives in the port by rail. Despite the pandemic, last year railborne freight set a record: About 2,800,000 TEU were handled, an advance of eight percent in containers transported. For the first time, environment-friendly rail took a larger share of hinterland traffic than trucking.

Making that possible were Hamburg Port Railway, responsible for the entire infrastructure, rail operators, and service providers like HHLA subsidiary Metrans Rail.

## A GREEN MEANS OF TRANSPORT

For Peter Kiss, CEO of Metrans, one thing is certain: "With other technical solutions as yet insufficiently matured, in present conditions it's only by rail that freight traffic can function in climate-friendly fashion." One figure impressively confirms this verdict: 'Rail transport emits 110 times less CO2 than trucking. Under the HHLA umbrella, Metrans aims to go one step further and to be completely climate-neutral by 2040, or to secure a balance between carbon intake and emissions. "Transfer of traffic from road to rail is a crucial lever for improving the climate. Climate-friendly logistics belong to the future, so we aim for CO2-neutral transport," explains Kiss. For example,



**More than 50 percent of hinterland traffic in the Port of Hamburg is transported by rail.**

© HHLA/Raetzke



Metrans is going for hybrid and electric locomotives. The company also aims to largely electrify terminal processes. For example, hybrid shunting engines are already in use. In addition, orders have been placed for electric rail cranes. The required current will be sustainably generated. Despite traffic growth, in 2021 CO2 emissions on the Metrans network were reduced by around 60 percent. The company is compensating for all currently unavoidable emissions through certificated development projects.

### ALL-INCLUSIVE

Shifting containers by rail calls for more than just a locomotive and a gaggle of railcars. Container storage for shipping and leasing companies; sale/leasing of new and used containers; maintenance, cleaning and repairs; and repositioning throughout Europe – all these services are essential for transporting containers. Metrans has been meeting these needs for almost 31 years. That all started in Prague in 1991, when Jiri Samek founded the company. With two block trains per week, even then Metrans was already shifting large volumes of freight from road to rail. In its entire network, the total is now around 550. From the start, Metrans was a pioneer for sustained

freight traffic. Peter Kiss, after Samek's death in 2018 his successor as CEO, summarizes the company philosophy: "We offer simple and neutral solutions in the complex area of trimodal transport. Above all, we aim to assist our customers about differing, but sometimes very specific, situations." With all-inclusive solutions for container transport.

### A SUCCESS STORY CONTINUES

Now as then, Metrans relies on vision and innovation. Energy efficiency and environmental compatibility are to the fore there. Back in 2004, the group accordingly opted to develop lightweight railcars. With correspondingly less rolling resistance and energy consumption, these weigh around four tons less than a normal railcar. These cars are also fitted with 'whispering brakes' that reduce movement and braking noise by up to 50 percent. The DigiTwin project also signals the way ahead. A 'digital twin' aims to digitally reproduce all the states of a railcar that would otherwise need recording by wagon inspectors. Digital recording simultaneously saves costs and time. Solutions like these enable Metrans to further develop rail freight transport as an efficient environment-friendly alternative to road traffic. ■ Im



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## Plenty of space along the canals

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### Shippers increasingly including inland waterway craft in carrier mix.

The inland waterway craft is seen as an environment-friendly means of transport, and not solely for bulk cargoes. Shipping companies are increasingly frequently offering container services. Not only for long tours, shippers' logistics departments are including this means of transport in their calculations for numerous transport chains. On shorter routes too, in many cases it has advantages over trucking. One of these is obvious: Using an inland waterway craft, about four extra tons of cargo can be stuffed into the box. This makes the entire transport chain more economical. Another 'plus' is reliability. While an inland waterway craft is not as fast as a truck, there are virtually no traffic jams on waterways, enabling shipping companies to meet customer requirements more rapidly. "Our liner services remain extremely flexible. We do not need to abide rigidly by sailing times. Along with our customers, we therefore always seek to find a solution," says Rene Oloff, manager of Deutsche Binnenreederei's Hamburg branch.

Deutsche Binnenreederei was the first company to start shifting containers on inland waterway vessels. Today it is among the leaders in transporting boxes by inland waterway craft to and from Hamburg. On average, over 90,000 TEU a year travel that way. "Our first line ran via the Elbe to Riesa. Many other ports are now involved. Via the Elbe Lateral Canal and the Mittellandkanal, we operate to Braunschweig via Hanover as far as Minden. On the other side, we also serve Fallersleben," explains Oloff. A variety of cargoes lie in the containers. The most frequent loads consist of consumer goods, wood or furniture, natural stone, and automotive/chemical products, including hazardous cargoes. Units in inland waterway shipping are of constantly growing size. Deutsche Binnenreederei, for instance, operates one push-tow with a capacity of up to 176 TEU.

Two or three pusher craft are invariably deployed on shifting loaded push lighters to or from the Port of Hamburg. For loading and discharging the boxes, as a rule calls are made at all the Hamburg terminals. In



© HHM/Breitenbach

addition, transfers are made between these. Port push craft are used for these. “On days with heavy traffic, an inland waterway push vessel is also deployed, which afterwards leaves port for the hinterland. In Peutehafen we then assemble the relevant tows,” explains Heiko Tominski, Deutsche Binnenreederei’s Marketing Manager. The company currently offers between ten and twelve sailings per week. Inland waterway vessels call the Port of Hamburg over ten thousand times a year. HVCC – Hamburg Vessel Coordination Center assists in controlling their movements in the port. This aims to coordinate all ship arrivals in the port with terminal movements. HVCC assembles all the necessary data from the individual players. To cover the arrival of inland waterway craft even better in process control, consultation takes place between the Federal Waterway and Shipping Administration and the Inland Waterway Shipping Working Group Hamburg. This also aims to further improve coverage of the arrival of inland waterway craft. The aim is that AIS – Automatic Identification System data on ships and traffic data from the locks management system should function as real-time data – along with those of the HVCC inland waterway craft platform – used for assessing traffic flow and on controlling approaches to the Port of Hamburg. ■

jh

## Deutsche Binnenreederei Milestones:

- **1949** Foundation of VEB – state-owned – DSU German Shipping and Cargo Handling Centre. This consisted of four independent operations in Berlin, Magdeburg and Stralsund and Dresden, where only passenger craft were operated.
- **1990** After reunification, Deutsche Binnenreederei came under the Treuhand. In 2001 this became a public limited company. A further change occurred six years later: Deutsche Binnenreederei was acquired by Odratrans Group of Poland.
- **2020** Rhenus Group acquires Deutsche Binnenreederei and continues to run it. Between the Port of Hamburg and various ports on the Elbe, Elbe Lateral Canal and Mittellandkanal, Deutsche Binnenreederei operations involve two motor vessels, five or six push-tows and one mega push-tow.

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# PETER PICKHUBEN'S PINBOARD



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## Birth of the container

Malcolm McLean is seen as the father of the container. The forwarder from North Carolina disliked seeing many dockers spending hours shifting his cargoes piece by piece from trucks to ships. It was in 1937 that he is said to have had the idea of loading whole lorries on to ships, later simply the loaded receptacles. Convinced by his idea, he himself designed the first containers, founded the Sea-Land Corporation shipping company and started refitting ships so that the steel boxes of his own design could be loaded on deck. One of these ships was the 'Ideal X', a former naval oil tanker. Loaded with 58 containers, on 26 April 1956 she sailed from Newark, New Jersey for Houston, Texas. Arriving at her destination, the containers were rapidly loaded onto trucks without any problems. Although the container had proved to be a success, ten years were to elapse before one arrived in Europe on board the 'MS Fairland'. The box now dominates the scene in the Port of Hamburg, which in 2021 alone handled 8.7 million standard containers. Saskia Hasskamp (sh)

## First hydrogen-powered empty-box stacker

In a non-binding Declaration of Intent with HHLA – Hamburger Hafen und Logistik in May 2022, US forklift builder Hyster announced delivery of two electric vehicles with fuel cell technology. Apart from a hydrogen-powered terminal tractor, Hyster will bring Hyster will bring the world's first hydrogen-fueled empty-container stacker into service in Hamburg in early 2023. The two vehicles are key components in the Clean Port and Logistics Program. This joint HHLA initiative with other European companies aims to test and bring into operation the next generation of hydrogen-fuelled port equipment.

The H2 stacker and the tractor will be deployed at HHLA Container Terminal Tollerort. Hydrogen from the HHLA Hamburg Green Hydrogen Hub will fuel both the forklift's 60-kilowatt fuel cell and the 45-kilowatt cell on the tractor. The terminal will be equipped with the required tank infrastructure and connected to Hamburg's future hydrogen network. The aim is to reduce emissions from port cargo handling and create the basis for a strong hydrogen sector in business in Hamburg, Germany and Europe. (sh)



© Hyster

## The start of a new era

Hamburg, 31 May 1968 – The 'American Lancer' was the first fully cellular containership to berth at HHLA's Burchardkai Terminal. Her arrival marked the start of container shipping in the Port of Hamburg. The box sustainably transformed shipping, port work and trade. The vessel with a length of 213 metres was welcomed by Helmuth Kern, then Hamburg's Minister of Economics. Kern had previously gained acceptance for Burchardkai's expansion as a container terminal, creating the required environment for container shipping in the Port of Hamburg.

In the 1960s, many people deemed it inconceivable that this drab means of transport should one day be an utterly indispensable pillar of the world economy. Yet they were rapidly taught a lesson. Previously requiring several days, thanks to the container, the loading and discharge of one vessel is possible within a few hours. Modern shipping

therefore has this mundane means of transport to thank for gigantic savings of time and costs. No wonder container shipping's progress was swift. Whereas the 'American Lancer' carried no more than 1,200 standard containers, Taiwanese shipowner Evergreen's 'Ever Ace', currently the world's largest containership, can transport almost 24,000. (sh)



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## Logistics service providers reinforce HHM

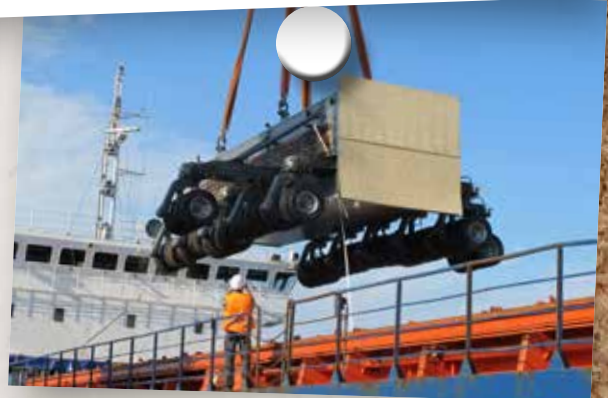
Port of Hamburg Marketing is happy to welcome three new members from the logistics provider & forwarder sector. Based in Baienfurt and with branches in Lübeck and St Petersburg, Pfaff International offers worldwide project logistics, including international out-of-gauge and heavy shipments.



As additional transport experts, Addicks & Kreye Container Services has joined the association. With branches in Bremen, Bremerhaven and Hamburg and almost one hundred of its own trucks, the company provides both long- and short-haul transport for overseas containers. It also looks after all related services. Its range also includes waste, hazardous goods and active reefer shipments.

ALS is somewhat differently positioned. This Customs and logistics specialist offers its customers a wide variety of Customs clearance and looks after transit formalities. ALS can also store freight for clients, either long-term or temporarily. The company is AEO and ISO-9001 certified.

Based in Weil am Rhein, ALS employs 200 staff. (jh)



## International cooperation with members

Cooperation among associations and institutions is essential for gaining strength in the national and international environment. By mutual arrangement, for instance, HHM has become a member of both the Center for Transportation & Logistics Neuer Adler and the UIRR – Union Internationale pour le transport Combine Rail-Route. While Neuer Adler has set itself the aim of strengthening the competitive positions of the transport/logistics sector, UIRR's is to further promote tri-modal transport. HHM will be supporting its two new members there. (jh)

# Always connected

**Contacts are a valuable resource in marketing. Just how valuable was demonstrated again and again by our former Joint CEO, Ingo Egloff, who retired in April.**

Once a politician, always a politician. It's not quite as simple as that. Yet Ingo Egloff used his term as a member of the Federal Lower House – or Bundestag – to shine in his job as Joint CEO of Port of Hamburg Marketing. Thanks to his numerous contacts in political Berlin, Ingo Egloff repeatedly pulled the right strings to put not just the Port of Hamburg, but also the maritime industry, hinterland infrastructure projects, and NW German port locations, in the focus of Federal politicians.

One splendid example is the Port Breakfast in the State of Hamburg's representative office. With the 55th in the series, this successful event celebrated a minor anniversary in March 2022. Naturally, one wishes to say, Ingo Egloff was among the 'fathers' of the format. With his sturdy persona and power of persuasion, time and again he succeeded in highlighting the Port of Hamburg's advantages in the global supply chain. That aspect was of importance when Federal funds came to be distributed for infrastructure projects.

It was not only in personal exchanges that Ingo Egloff repeatedly displayed his strengths. He also exuded competence as presenter in front of the camera. During the pandemic, he also managed to make the Port Breakfast a successful digital event. Nor was that all: The digital format for the 'Future Conference: Hydrogen' featured two highly popular round-table discussions on this alternative form of energy.

His contacts, ideas, the multitude of anecdotes and above all, the man, will be much missed by the whole team working for Port of Hamburg Marketing. We look forward to seeing him again soon as a member of HHM's Advisory Council. ■ (jh)



**Ingo Egloff**  
Member of the HHM Advisory Board and former member of the Executive Board.

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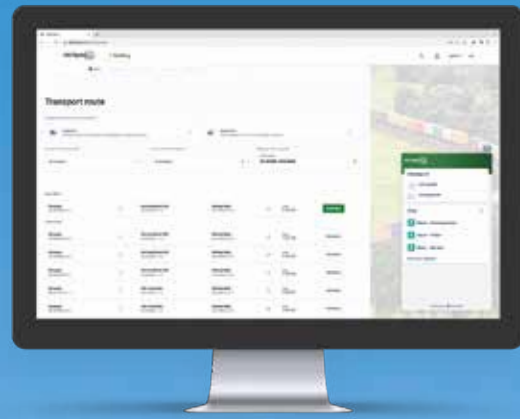
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