

PFB waits in the wings at Hamburg

Dr Ulrich Malchow, a naval architect and academic who more than 10 years ago invented the Port Feeder Barge (PFB) concept as a means of helping solve the Port of Hamburg's growing traffic congestion problems, is expecting the new city senate to look more favourably at the concept.

He complained that the current senate, which includes the Green Party, has achieved little in this respect, despite all its promises to reduce congestion and cut pollution levels.

Talking exclusively to *World-Cargo News*, Malchow said: "All parties want to reduce the ecological impact of the traffic handled at the port and are supporting green mobility transport systems. However, only the Liberal Party has the movement of containers by barge as a statement in its manifesto. While the Green Party is promoting more barge transport within the port, it has been claiming this for more than five years and nothing has happened, despite the party being a part of the city's senate.

"In February, Hamburg's new senate will be elected and the leading issue in current political debates is mobility. In Hamburg, which is Germany's largest port, traffic movements within and around the complex are a major concern and action is needed to improve both mobility and safety."

Must do more

While the port's main terminal operators are supporting and implementing more environmentally friendly operating practices in their facilities, Malchow thinks much more could and must be done.

For instance, he believes that Hamburger Hafen und Logistik AG (HHLA), which processes over 75% of the port's box traffic, has to be forced to grant PFB the same rights as it does to truckers and rail operators when it comes to moving containers. He elaborated: "After all, it was the company that withdrew support for PFB in 2010 for what appears to have been completely self-motivated interests."

It is important to note that HHLA has significant investments in the intermodal rail and container trucking sectors, and it has been these businesses that have performed better than its terminal management and stevedoring activities in recent years. In 2019, HHLA's intermodal volumes rose 5.7% to 1.57M TEU, compared with growth of only 3.3% in its terminals' throughput, which totalled just over 7.6M TEU.

The inventor of the Port Feeder Barge believes the time has come for Hamburg politicians to support the concept in the city's port

However, given HHLA's dominant position on Hamburg's waterfront when it comes to handling containers, PFB is not viable without the company's support, and this appears to be as far away as ever.

Opposing views

Malchow dismissed comments recently made by Angela Titz-rath, HHLA's CEO, who said that the new Terminal Services Agreement signed with Hapag-Lloyd would lead to an intensification of their collaboration on sustainability-related issues.

"HHLA and Hapag-Lloyd have been fighting very hard for a container handling agreement over the past few months, with Germany's largest carrier even threatening to leave Hamburg because of its high costs," explained Malchow. "In my view, the words 'greater collaboration' between the parties on environmental matters are used just to divert from the commercial concessions HHLA has had to finally make to retain the carrier."

He added: "If Hapag-Lloyd really takes the congestion and environmental issues in the port seriously, it would be pushing HHLA to allow PFB operations at its facility [Container Terminal Altenwerder – CTA] as the line has to shift many boxes within the port. However, Hapag-Lloyd and HHLA both have the senate as shareholders, and Hapag-Lloyd has no intention of interfering in HHLA's political issues, such as its attitude to PFB."

The PFB concept comprises a self-propelled double-ended container pontoon with a crane suitable for handling containers installed on it (see picture). It is designed to burn LNG but, according to Malchow, could be easily adapted for use of hydrogen. His operating plan would be to call at all container terminals once a day, depending on demand, taking huge volumes of trucks off neighbouring roads and slashing emissions.

Currently, 25-30% of the port's annual container throughput of more than 9M TEU is moved within the port and most of the traffic (95%) is shifted by truck. Moreover, at least 50% of the boxes have to cross the capacity-constrained Köhlbrand Bridge that links the eastern and western cargo handling areas of the

port. This old bridge also needs replacing and traffic limits are already imposed on it.

A decade away

While the federal government in Berlin has agreed to finance a large part of the costs associated with building a new crossing, which is most likely to be a more expensive tunnel, it is unlikely to be commissioned until 2030. By that time, congestion and emission levels in Hamburg will be much worse and the costs for all users of the port considerably higher, according to Malchow.

In principle, HHLA supports a tunnel as it would mean ULCV tonnage (14,000+ TEU) ships could call at CTA, which cannot

happen at the moment because of the Köhlbrand Bridge's 53m air draught restrictions.

"While some containers are already transferred by barge within the port, volumes are extremely limited," explained Malchow. "Currently, conventional barges carry about 100,000 TEU a year, but they rely on the large STS gantry cranes, which, in the case of the main terminals, are very expensive to use, or in the case of smaller facilities, do not exist at all. PFB does not face this problem as the craft is fitted with its own deck crane and this means loading/discharge operations are fully self-sustaining."

While no PFB has been built yet, the engineer and academic stressed that once contracts with a shipyard had been exchanged, construction of the vessel could be completed very quickly.

For its part, HHLA is pursuing rather futuristic ideas that include the use of drones and the hyperloop concept to move



The Port Feeder Barge needs political support in the city senate if the solution is to be implemented in the Port of Hamburg

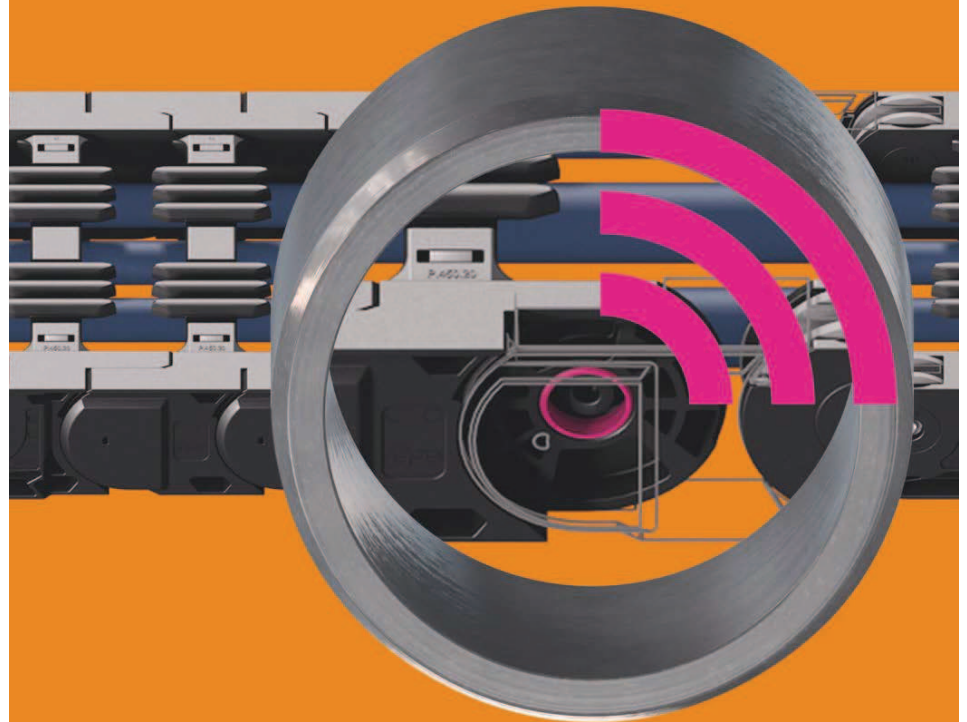
containers quickly, cost-effectively and in a more sustainable manner to/from its container terminals. At CTA, for instance, the company is constructing a hyperloop station that will be demonstrated at the ITS World Congress, which will be held in Hamburg in October 2021.

Although Malchow also received permission to demonstrate his PFB concept at the same

event, this has now been withdrawn. He claimed that this was yet another example of HHLA exercising its considerable power and influence within the port.

Malchow is determined and without any doubts, he will continue to push his PFB concept. With inter-terminal transfers in many ports increasing, it is a system that has potential across the world. □

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Currently, 25-30% of Hamburg's annual container throughput of more than 9M TEU is moved within the port, and 95% of the traffic is shifted by truck across the capacity-constrained Köhlbrand Bridge (pictured)

