



Charting a new course with the next generation of wind vessels

dship Carriers is poised to revolutionize wind cargo transport with its groundbreaking D500 vessel. Captain Hauke Bindemann, the company's CTO, discusses the design, fuel efficiency, and sustainability features that make this a potential game changer for the wind energy sector.



PES: A warm welcome to PES Hauke. I'm looking forward to talking to you today. First of all, I know that dship Carriers recently signed a contract to construct a new vessel type, the D500, which promises to be a significant breakthrough for wind cargo. Could you start by telling us more about this exciting development?

Hauke Bindemann: The idea for the D500 actually came about during our global meeting in 2022. At that point, we felt it was time to go beyond the ordinary and develop our very own ship design that would cater to the growing demands of the wind energy sector. We were able to refine our ideas and turn them into a viable plan.

After months of planning, it all became real when we signed the contracts for four new builds in February 2024. This project marks a significant milestone for us, as we believe the D500 will be a major turning point for both dship and the industry.

PES: Could you guide us through the key stages of the design process? What were the

primary considerations that influenced your decisions at each stage?

HB: Each stage of the design process required careful thought. First, we had to choose the right partner for the design to translate our ideas and operational needs into a ship that could deliver on performance, efficiency, and sustainability. Once we had developed the initial design, we opened the project up to shipyards in China, to find the right yard capable of bringing our vision to life.

After a thorough evaluation process, we chose Jinling Shipyard. What guided us throughout was a focus on considering all aspects, from cargo hold capacity to fuel efficiency and sustainability.

PES: The D500 is recognized for its significant reduction in fuel consumption. Could you elaborate on the specific technologies or design innovations, such as hull shape or propulsion systems, that contribute to this improvement?

HB: Fuel efficiency was a key driver behind the design. We put a lot of effort into optimizing

the hull shape to minimize resistance when operating at different draughts. This directly impacts the required engine performance. Additionally, by focusing on a reasonable operating speed, we can reduce overall fuel consumption without sacrificing performance.

The D500 operates efficiently, saving fuel and lowering emissions compared to vessels of comparable size. It's about getting the most out of the ship while reducing our environmental footprint.

PES: How does the cargo hold and deck capacity compare to previous vessels in the 15,000 dwt class, and what design changes were necessary to achieve its 60% increase?

HB: The cargo hold and deck capacity are truly standout features. We took an innovative approach and built the vessel essentially around the cargo hold, ensuring maximum space without compromising stability, performance, or fuel consumption. The D500 offers one large cargo hold with a total intake of about 28,400cbm. This is roughly a 60% increase compared to our well-known F500.

To further increase the deck space, we incorporated an asymmetrically aligned superstructure, which allows for more usable surface area on the deck; something that's especially valuable for wind turbine components.

PES: Sustainability is a key focus of the D500. How did environmental considerations affect design choices?

HB: Yes, sustainability was central to the design from the beginning. We looked at everything from propulsion systems to alternative fuels and tried to push the boundaries of what is possible within the limits of current technology.

While we couldn't implement all the advanced features we initially envisioned, we made sure that the vessel is 'methanol-ready'. This means that with some modifications, both the main engine and fuel tanks can handle methanol fuel, future-proofing the vessel as alternative fuels become more available and viable.

Additionally, we focused on minimizing the handling time for equipment, which reduces emissions and improves operational efficiency. The D500 is just the start of our journey toward more sustainable shipping solutions, and we are excited to continue exploring greener technologies with future projects.

PES: Describe the role of the engineering team in ensuring the D500 meets the highest industry standards.

HB: Our engineering team has been crucial to the success of this project, as we bring vast experience in the heavy lift segment. With former Captains, Chief Officers, and Naval Architects as team members, who have either

sailed the oceans for decades or have been involved in challenging projects in the past, we know what a state-of-the-art vessel in this segment needs to be capable of.

This combination of practical and technical expertise gave us a unique advantage during the design process. The team knows firsthand the challenges that vessels face in real-world conditions, and that knowledge went directly into the design.

PES: In what ways is the D500 uniquely designed for wind cargo, and how do these features align with dship Carriers' broader strategic goals?

HB: The D500 is tailored specifically for wind cargo, aligning perfectly with our broader strategy of supporting the renewable energy sector. The massive cargo hold is designed to stow the main components of the latest onshore wind main component models, even in a transversal direction.

We can also stack tower sections under the deck, with another layer on top of it in the highest position of the tween decks. Combined with the maximized space for blades and other components on deck, this setup allows us to transport more cargo in one trip.

And lastly, the asymmetric location of the accommodation forward, although not a new feature, avoids issues with the SOLAS / PANAMA visibility line, which are quite common with such large loads.

PES: Could you discuss the collaborative process between the engineering team and other departments, such as project management or sustainability, during the vessel's development?

HB: Collaboration was key throughout this process. We brought together experts from the engineering, projects, and chartering departments to ensure that every perspective was considered. Having different departments involved meant we could approach challenges from multiple angles and come up with innovative solutions. This level of teamwork is what really made the D500 possible.

PES: The D500 is described as a next generation MPP vessel. In your view, what sets it apart as a cutting-edge design?

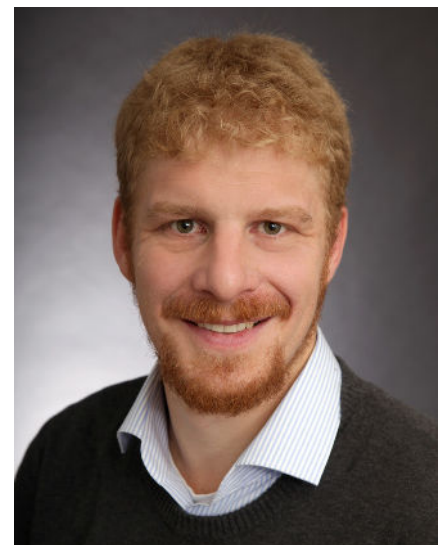
HB: Well, it stands out because it was designed around the cargo hold, maximizing the space for stowing large and complex cargoes like wind turbine components. This gives the vessel greater flexibility in handling a variety of cargo and places it ahead of what's currently available or being built in this segment.

It's also forward thinking, with considerations for future technologies and alternative fuels built into the design, reflecting both the current demands of wind logistics and the future direction of sustainable shipping.

We also placed a strong emphasis on crew comfort, ensuring short walking distances and easy access to cargo holds, as the crew is critical to our success.

PES: Can you share some insights into the testing and validation processes for the design? How did you ensure that the vessel will perform as expected once it is in operation?

HB: We are working closely with both the designer and the shipyard to catch any potential issues early on. Constant communication is key to staying ahead of any problems that could arise during the build or



Hauke Bindemann

later in operation. Our multidisciplinary team of engineers, project managers, and others brings a wide range of skills to the table to ensure the best possible solutions. We are confident that the vessel will meet and exceed expectations.

PES: As an engineer, what are you most proud of in this project, and why?

HB: I am proud of the teamwork and forward thinking approach that went into the D500. It is rare for a commercial shipping company to take on its vessel design from scratch, but we did. This project shows how far we have come as a company, and it reflects our commitment to innovation and sustainability. The D500 isn't just a ship, it's a statement about where dship Carriers is headed in the future.

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