

With its fleet of heavy lift vessels, Boskalis subsidiary Dockwise moves some of the most intimidating cargoes on the water.

Making the impossible possible



Jan de Jonge

Dockwise moves primarily oil rigs and platforms, many of the loads reaching over 100 meters high. Or, in the case of the Sevan 1000 FPSO for the Goliat field in the North Sea, one of the biggest loads ever moved at sea, measuring 75 metres high and weighing in at 64,000 tonnes. Try moving that across four oceans from Korea to Norway.

ABB caught up with Captain Sergei Zatcarinin on the Dockwise Mighty Servant 1, getting ready to transport an oil rig. Captain Sergei has twenty years in the business, and he has his priorities straight: “The cargos are very heavy, so it is very important to control the forces that affect the centre of gravity.” In other words, don’t tip the ship.

The captain is glad to have some help in keeping an even keel. Better ship connectivity and advanced software have given him advantages that previous generations didn’t have.

Combining weather forecasts, on board sensors and loading parameters, ABB’s marine software Octopus lets Dockwise generate a polar chart indicating the safest heading for the voyage.

“We can understand what to expect on any given course, even two and three days ahead, and select the one that is the safest and most efficient for us,” he says. “The system works, and you feel more confident. The level of reliability is raised.”

Shore support at sea

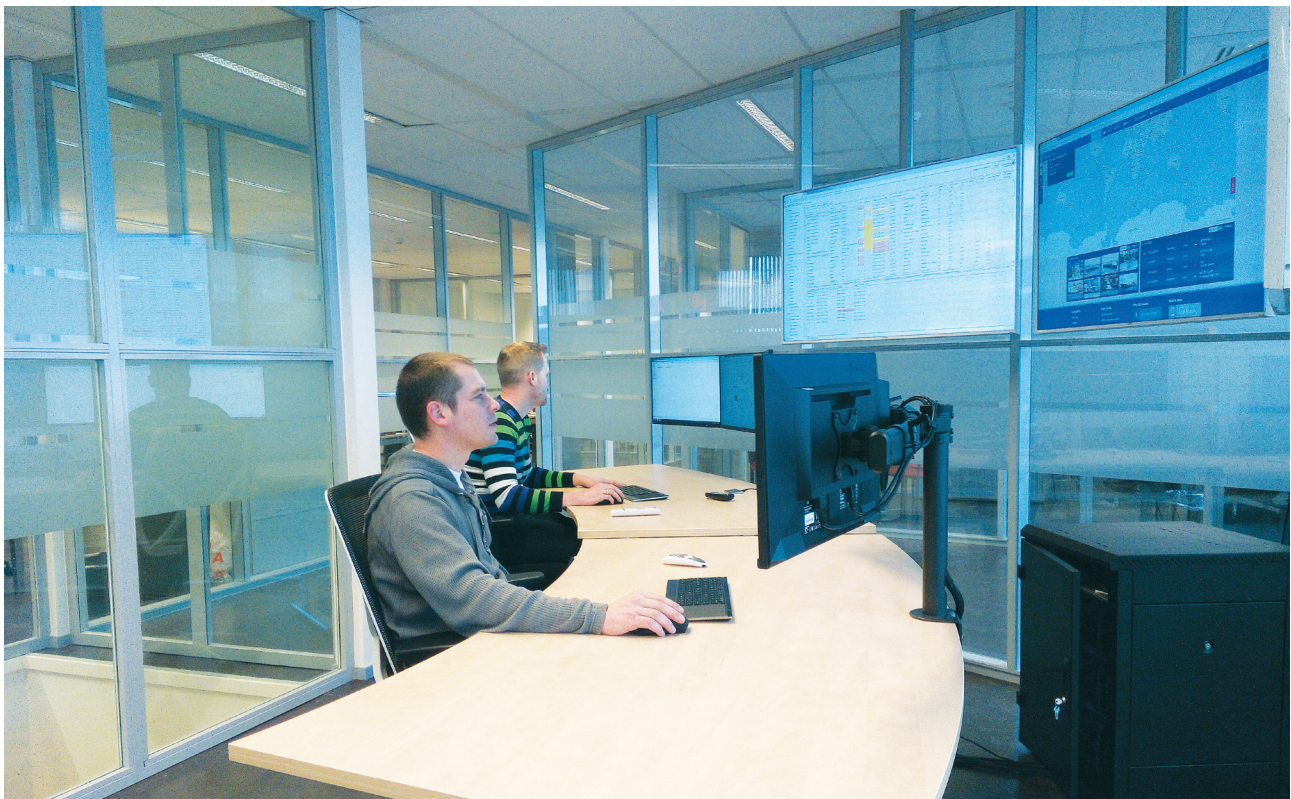
A strong shore side team supports the crew on board. Jan de Jonge is a Dockwise Senior marine engineer supporting sailings around the globe. “Software is a big part of my job. Using the ABB system we can track ship motion to make sure they stay within the limitations of the vessel.”

Combining recorded data and predicted conditions, the crew can

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Dockwise Vanguard Semi submersible heavy lift vessel with Goliat



On shore monitoring centre at Dalfsen

actually see how the ship will respond with cargoes of varying size and weight under different conditions. “This allows for safer voyages, making sure that the ship stays within its operational margins.”

Past data can also be used to improve future performance, de Jonge tells. “We used data collected since 2008 to perform a major study that gave us a lot of new knowledge on ship motion. This knowledge allows us to make more intelligent route choices.”

Dockwise can also communicate with ABB during the voyage. Martin Eilander, Service manager in ABB Marine, tells that Dockwise can go to their myABB portal and download all voyage information. “They can access

all available data and do their own analysis. This can also be applied to other cargo types, to avoid wind forces on containerships or sloshing in tankers.”

Keeping owners happy

Jaap Jan Stoker, Product management in ABB Marine, relates that fuel is both cost for owners and operators, and an environmental burden. “Controlling consumption is more complex than just carrying out the voyage, and software is a very important tool in achieving this. With the right software you can offer solutions with payback within one year, rather than two or more years with mechanical solutions.”

Using software together with the Internet of Things delivers safer and

more efficient operations. Shipowners need to be informed of all aspects affecting voyages – safety, fuel costs, environmental impact, time – and advisory systems can assist in optimising all these aspects, advising on weather routing, optimal vessel trim, and power and propulsion optimisation, among other factors.

“It’s not just important on board, says Jan de Jonge. “Ship and cargo owners want to access this information too. Not only the post voyage reports, but real time information on the performance of the ship and anticipated performance. Being able to see for themselves how the voyage is unfolding increases their level of confidence in Dockwise.”

With so much sharing of mis-

sion-sensitive data, security is paramount, and Martin Eilander assures that ABB systems are designed to ensure completely secure data transfer.

Some things never change

With all this information flowing from ship to shore, and advice from shore flying back to the ship, one thing remains unchanged:

“This is purely advisory information,” Jan de Jonge assures. “It is additional assistance to the captain, designed to enhance vessel performance and efficiency. If the captain chooses to override the advice and lay by or seek refuge, that is his decision. In the end, the captain has the ultimate authority.”

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Polar chart generated by ABB’s marine software OCTOPUS