

DRYDOCK

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FACE THE FACTS: Wind technology concept re-imagined

IN FOCUS: Unrivalled fuel and emissions savings

ANALYSIS: Alternative technologies for EEXI compliance

This includes increasing repair capacities and widening their market presence, attracting more complex and large-

scale projects, improving relations with existing partners and gaining more trust with potential customers.



Above: Hydrex recently removed a bow thruster from a 170m containership during a stop in Rotterdam

Right: Hydrex carried out several repairs on a 165m tanker, including work on the rudder, bilge keels and bow thruster grids

Underwater tanker repairs

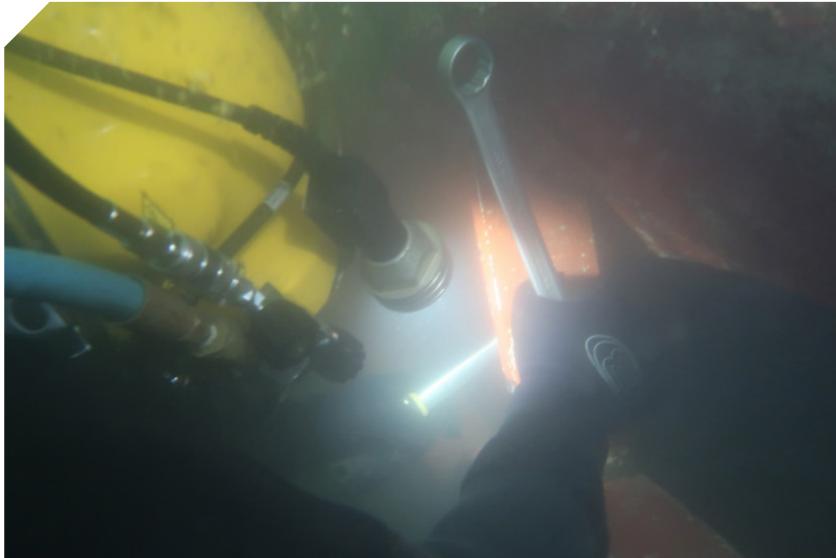
Hydrex diver/technician teams recently carried out several repairs during one operation on a 165m long tanker. Work on the rudder, bilge keels and bow thruster grids was performed simultaneously during the ship's stop in Flushing, the Netherlands.

By combining these repairs into one operation Hydrex brought the needed timeframe down to the absolute minimum. This allowed the owner to sail his vessel on schedule to the next stop. It is a good example of the flexibility of services that Hydrex offers its customers. Hydrex is able to adapt its work to a vessel's schedule and can easily adjust to changing circumstances.

The company can also split up a repair into several stages, so that it can be carried out in the same port during subsequent visits, or in different ports. This might be needed if a repair is too complex to perform during one stop, or if a ship only has a very short window, as is the case with cruiseships or ferries that only make a short stopover in each port.

Hydrex divers are trained to be flexible and to adjust to the specific circumstances of an operation.





Rudder cracks and thruster grid bolts

Hydrex's workboats are ready for immediate deployment throughout ports in Belgium and the Netherlands, which allowed it to mobilise very quickly to the ship's location in Flushing.

Upon arrival the men split up into two teams. One team performed an underwater inspection of the bow thrusters, while the other technicians started working on the rudder. A previous inspection had revealed cracks in the rudder's lower pintle area. The vessel was able to be trimmed enough to bring the damaged area of the rudder above water. This allowed Hydrex to access the cracks using a pontoon.

The team worked on both sides of the rudder at the same time, following the same procedure. First they used a dye penetrant test to discover the crack ends. Crack arrests were then drilled to prevent further spreading. Diver/technicians then ground out the cracks over their entire length and then the cracks were filled with the company's class-approved full penetration welding.

To finalise the repair, the corners of the lower pintle were re-shaped with a larger radius, as was advised by the attending class representative.

Two thruster grid bolts were found to be missing during the inspection of the thruster tunnel and 10 other bolts were found to have come loose. Hydrex diver/

technicians reinstalled the missing bolts and secured the others.

Bilge keel cropping

After reinstalling the bolts, this team started the last part of the operation. The bilge keels on both port and starboard sides of the ship had suffered several cracks. A total of nine sections needed to be cropped or removed underwater by diver/technicians.

On the starboard side, three sections were cropped over a length of 2,600mm, while one section was removed completely. On the port side, four sections needed to be cropped over a length between 2,100mm and 2,600mm. One section was removed completely.

Conclusion

Like all projects Hydrex undertakes, the company organised and executed the entire job from start to finish. This required close communication with the customer, the classification society and any other party involved.

The diver/technicians were split into two teams working simultaneously to shorten the timeframe needed for the repair. This was done to make sure that any loss of time was kept to the absolute minimum.

The vessel continued on its schedule without a costly and time-consuming trip to drydock.

“ONE TEAM PERFORMED AN UNDERWATER INSPECTION OF THE BOW THRUSTERS, WHILE THE OTHER TECHNICIANS STARTED WORKING ON THE RUDDER.”