



| | |
|--|---|
| Worldwide underwater repair expertise displayed in West Africa | 3 |
| Underwater bow thruster replacement in winter conditions..... | 7 |

Contents

Page 3 - 5

Worldwide underwater repair expertise displayed in West Africa

Page 7 - 10

Underwater bow thruster replacement in winter conditions

KEEPING SHIPS IN BUSINESS

**ISO 9001
& 45001
certified**

Underwater services and technology approved by:



ClassNK

Scrubber pipe repairs and lasting protection



Exhaust scrubbers filter out all harmful toxins from exhaust gases of marine diesel engines. These hazardous pollutants can severely corrode the pipes of the scrubber. Using the experience we have accumulated over the years allows us to assist you at moment's notice if this happens.

We offer a full package to owners that are experiencing similar damage. Not only can we replace the

corroded exhaust pipe while your vessel stays on schedule, but we can make sure that you will not have to call us again in a few months time for the same problem. This is done by coating the pipes with a highly corrosion resistant coating called Ecospeed.

Contact us for more information on scrubber pipe replacements or other underwater repairs. We are at your disposal 24/7.

+ 32 3 213 5300 (24/7)
hydrex@hydrex.be
www.hydrex.be

HYDREX
UNDERWATER TECHNOLOGY

Worldwide underwater repair expertise displayed in West Africa

Shipowners operating globally require repair partners who can respond reliably regardless of location. In late December, we once again demonstrated our worldwide operational reach by carrying out a complex underwater propeller blade seal repair on a hopper dredger while it remained in port in Lagos, Nigeria.

The vessel was experiencing oil leakage from one of the blades of its controllable pitch propeller. With continued operation dependent on swift intervention, we were contacted to mobilize locally and resolve the issue underwater, without the need for drydocking.



Oil was leaking from one of the propeller blades.



Hydrex diver getting ready for underwater operation.

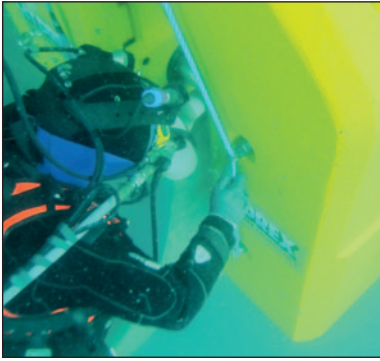
Rapid local response with global know-how

We deployed a specialized diving and engineering team to Lagos, equipped to perform the repair in challenging underwater conditions. Upon arrival, a detailed underwater inspection identified blade number three as the source of the oil leakage.

Despite the technical complexity of the repair and logistical challenges associated with operating in the region, our team had no trouble adapting to the evolving situation. As the customer later noted: “we are aware that it was a challenging pro-



Fast underwater propeller blade straightening



In its quest to provide cost effective services to customers, Hydrex developed procedures to address different kinds of damage to propellers. This research led to the design of the Hydrex cold straightening machines first used in 2002.

By taking advantage of this technique damaged blades can be straightened underwater, allowing the ship to return to commercial operations without the need to drydock. Blades can be brought back close to their original form, restoring the propeller's optimum efficiency.

The cold straightening machines have been in use for quite some time now but the Hydrex research department has been looking into ways to expand the technique even further to improve our services. A new version of the straightening machine was recently put into practice. It is compatible with the existing models and is used to restore more severely bent propeller blades to their original condition.

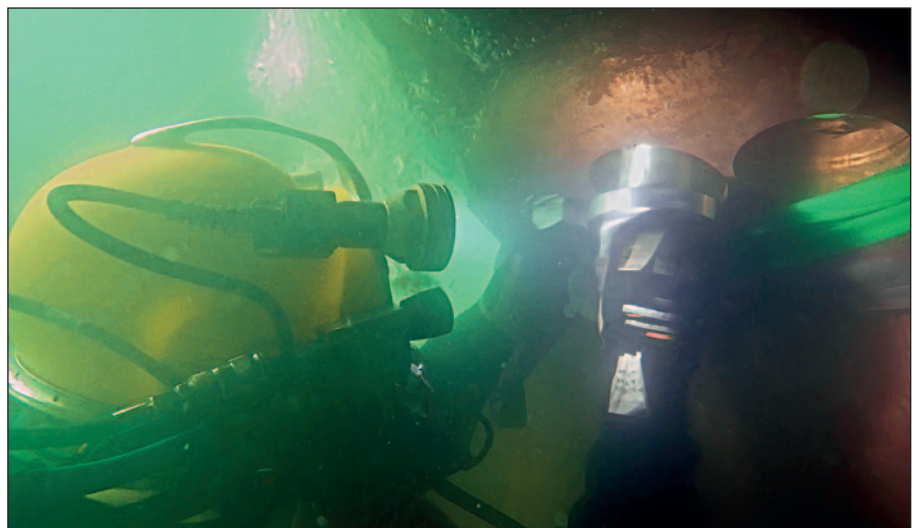
HYDREX
UNDERWATER TECHNOLOGY



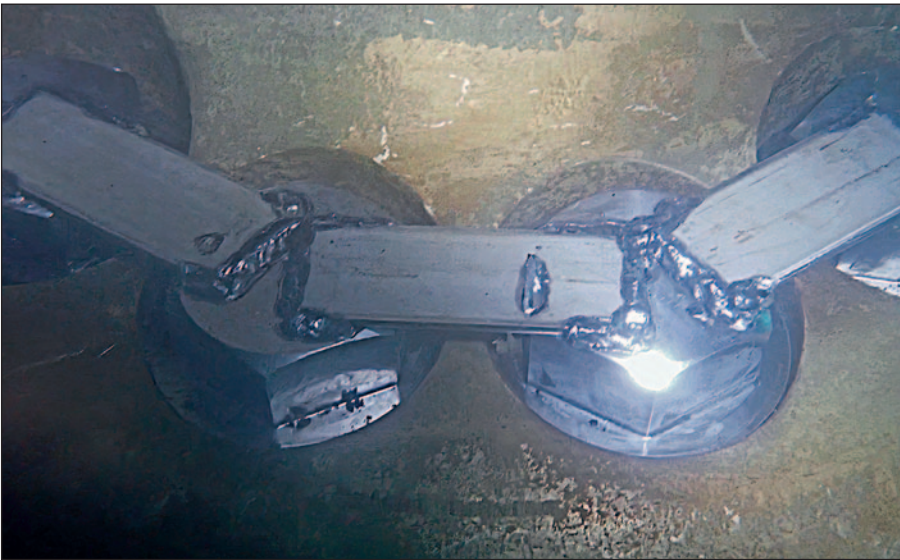
Loosening one of the propeller blade bolts.



Propeller after removal of the leaking blade.



Reinstalling the bolts after the blade was repositioned.



The bolts were put on the correct torque and secured.

cess, with multiple rescheduling efforts due to customs clearances and other unforeseen issues. However, thanks to your team's flexibility and commitment, we were able to successfully complete this intervention."

Executing complex propeller blade repairs underwater

Our divers removed the blade, inspected the sealing surfaces, and confirmed that no structural damage was present. New seals and a sealing plate were installed, with all components carefully lubricated and positioned to manufacturer and class standards.

The blade was then repositioned by the team following an approved lifting plan. They cleaned all blade bolts before reinstallation and tightened them to the specified torque. Final leakage and pitch tests were carried out successfully, confirming the effectiveness of the repair.

Reflecting on the outcome, the customer's technical supervisor commented that "the diving operation was successfully completed, and so far no leakages have been observed. I would like to thank the entire

Hydrex team for the excellent cooperation throughout this project."

Commitment beyond borders

The repair was completed during the end-of-year period, requiring significant flexibility from all parties involved. The customer also acknowledged the dedication of our team members who travelled during the holiday season: "We would also like to express our apologies to the two divers who had to travel during the New Year period."

By executing this blade seal repair underwater and on location, Hydrex enabled the vessel to continue operating without the delay, cost, or logistical complexity of a drydock visit. The project underlines our ability to support shipowners anywhere in the world, combining global mobilization with technical expertise and a strong commitment to cooperation, even under challenging circumstances. ■

Permanent in-water rudder repairs now possible without drydocking



Hydrex has developed an entirely new method enabling permanent repairs of rudders without drydocking the ship. Permanent repairs were hitherto not possible and ships had to drydock in case a major defect was found. The newly designed equipment is light-weight and can be mobilized very rapidly in our special flight containers.

Major defects on rudders very often cause unscheduled drydocking of ships. The new method designed by our technical department allows engineers, welders and inspectors to perform their tasks in dry conditions. Class approved permanent repairs on-site, without moving the ship, are now possible and commercial operations can continue. Steel repairs and replacements can be performed and pintle and bushing defects can be solved without the loss of time and money associated with drydocking.

The equipment can be mobilized within hours to any port in the world and is available for rapid mobilization from the Hydrex headquarters in Antwerp.





*A ship that needs repairs
deserves the best,
anywhere, anytime.
We promise quality
and deliver it, always.*



Underwater bow thruster replacement in winter conditions

Last month, we carried out an underwater bow thruster operation on a ferry in Stockholm, in the middle of winter. Snowfall and cold temperatures were part of the picture, but that's nothing new for us. We're used to working in all kinds of conditions, and with the right preparation, weather never has to be an obstacle.

This operation was planned well in advance, and was scheduled to take place during a planned break in the ferry's timetable. That meant we could do the work without disrupt-



Hydrex team in Stockholm about to unload the truck.



Old bow thruster after being brought to shore.

ing the vessel's service unnecessarily and without the need for a dry-dock visit.

Planning ahead for a smooth operation

From the start, we worked closely with the crew to make sure everything aligned with their operational planning. To prepare for the job, we mobilized a truck fully loaded with equipment from our office in Antwerp, while the rest of the team flew in separately. This approach allowed us to have all specialized tools on site while remaining flexible in how we deployed our personnel.

While one team prepared the underwater part of the job, the remainder handled internal preparations so that once we started, everything could move forward efficiently. Working





Hydrex diving station and equipment next to ferry in Stockholm.



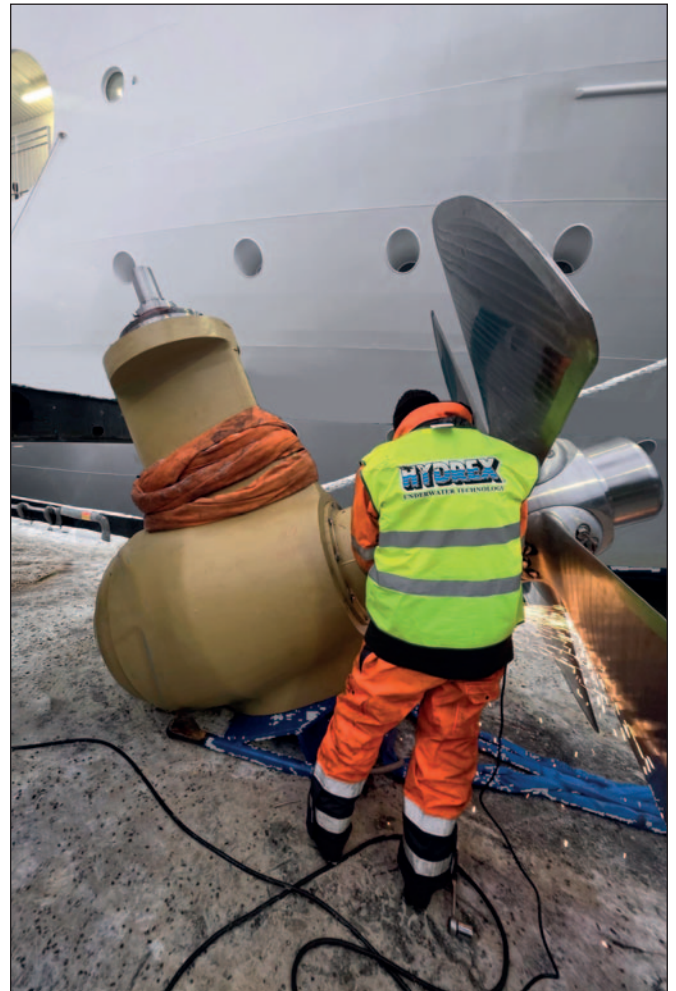
Diver getting ready for underwater operation.



New bow thruster arriving on-site.



Team leader following the operation from inside the diving station.



Preparing the new bow thruster for installation.

this way allows us to adapt to the customer's needs instead of forcing the vessel into a repair window that doesn't fit its schedule.

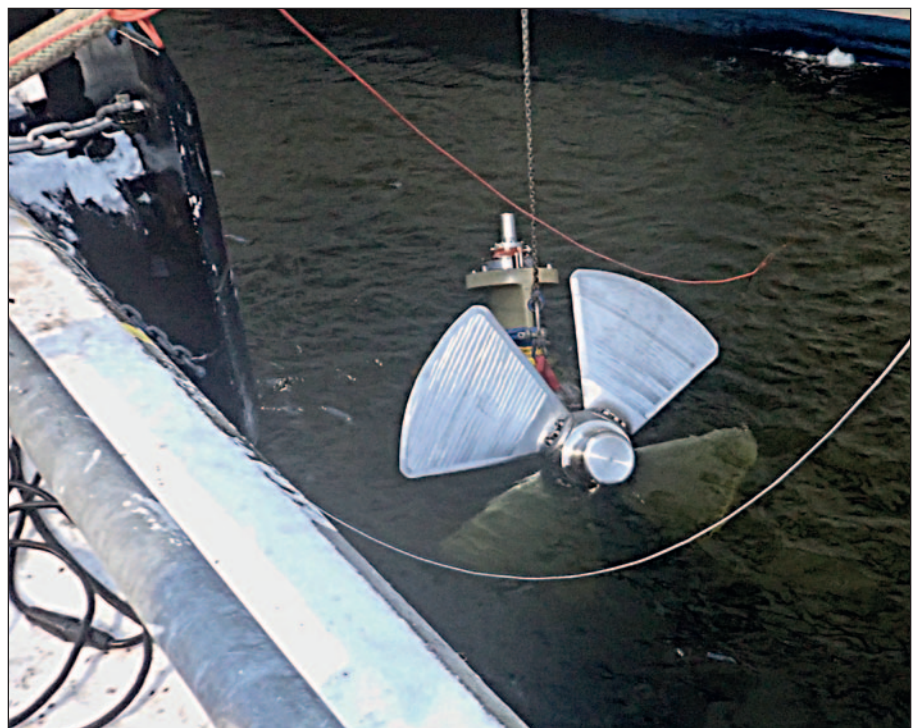
A familiar operation, executed with confidence

We have been carrying out underwater bow thruster removals and installations on a regular basis for well over 30 years, so we know exactly what's needed and how to execute them efficiently and safely.

In Stockholm, we disconnected and lifted out the existing bow thruster underwater. Instead of reinstalling the same unit, a new thruster was provided, while the removed unit was sent ashore for overhaul and refurbishment by the owner's chosen service providers.

Because the thruster was fully assembled and prepared, it could be installed in its entirety without the

need to create a dry environment in the tunnel as is required when the blades are fitted separately.



Lowering the new thruster into the water.

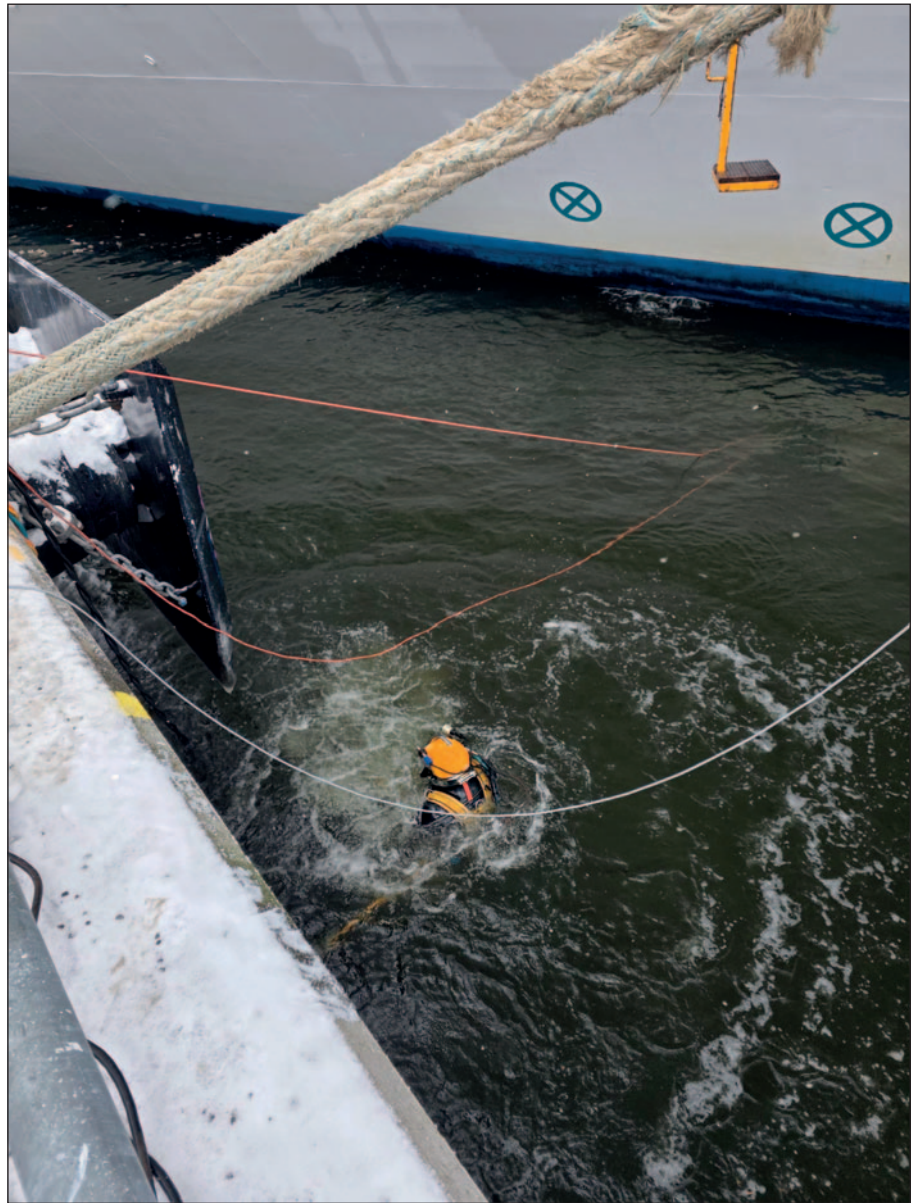
Once the new thruster was positioned in the tunnel, all connections were secured and final checks confirmed everything was ready for operation.

From the vessel's perspective, the process was well coordinated and controlled. As the chief officer later told us: *"I can only say that I'm impressed by the work and the time schedule. The only delay we had was from our side when we had some issues removing the studs. For me this was a new experience."*

Delivering results in winter conditions

Snowy weather didn't slow us down. Cold water, limited daylight, and logistical challenges are all part of the job, and we're used to adapting as situations change. Our extensive experience helps us keep operations predictable.

This job is a good example of how careful planning, experience, and flexibility come together to deliver practical solutions, exactly when and where our customers need them. ■



Hydrex diver during the operation, about to dive.



Our trucks can mobilize very swiftly to locations across Europe.

If you have received this magazine at the wrong address or if your company is going to move, please let us know.

You can contact us at:
hydrex@hydrex.be
or at
+ 32 3 213 53 00

**KEEPING SHIPS
IN BUSINESS**

Start saving fuel with your propeller cone fin now



We regularly install propeller cone fins on different types of vessels. We can carry out these operations underwater, out of drydock, all over the world without interrupting the ship's schedule.

Propeller cap energy saving devices can recover energy loss of

a propeller hub vortex in the propeller's slipstream. This decreases fuel consumption from 3% up to 5% according to the manufacturers and reduces cavitation on rudders and hulls.

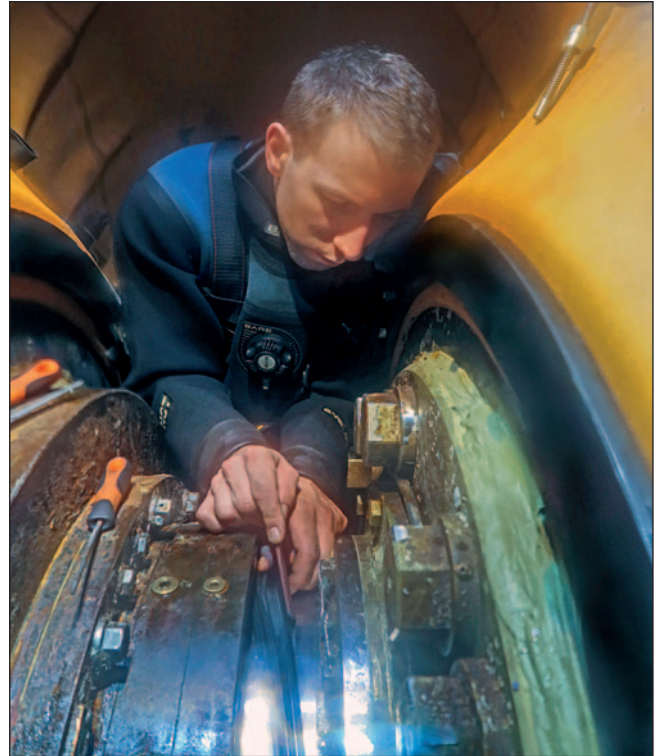
As a result of our underwater installation, the owner of the vessel can start enjoying the fuel savings

right away. Not having to wait for the next scheduled drydocking can win him up to four years of fuel savings. Since he will have earned back the cost of the underwater installation in only a few weeks, the savings are considerable.

+ 32 3 213 5300 (24/7)
hydrex@hydrex.be
www.hydrex.be

HYDREX
UNDERWATER TECHNOLOGY

The most cost-effective stern tube seal repair/replacement available anywhere



- Immediate response to minimize vessel downtime
- Accurate estimates with final invoices that match
- Typical stern tube seal repair/replacement by Hydrex:
Two (2) days start to finish
- All major brands repaired/replaced

We're here when you need us



+32 3 213 53 00
hydrex@hydrex.be

For more information visit www.hydrex.be