# HYDREX®
UNDERWATER TECHNOLOGY

# NEWS
LETTER | 278

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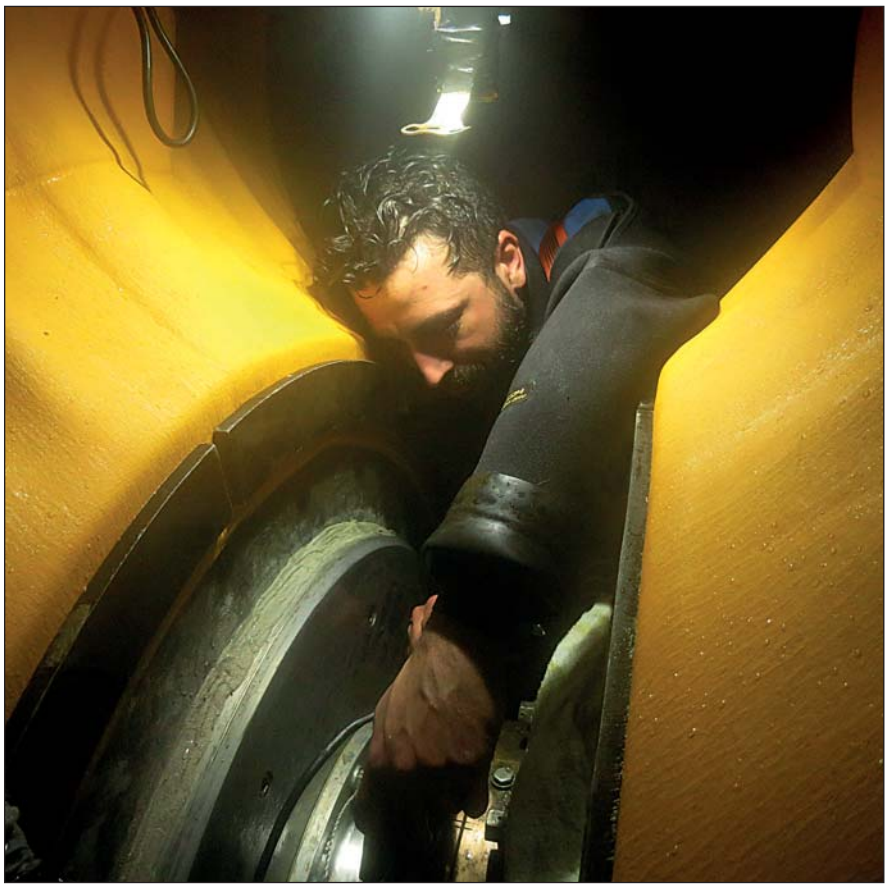
**KEEPING SHIPS IN BUSINESS**

**ISO 9001 certified**

**Underwater services and technology approved by:**

# Stern tube seal repairs



**Using our flexible mobdock method to create a dry underwater environment, we have carried out stern tube seal repairs and replacements underwater for some years now in cooperation with OEMs.**

This technology brings drydock conditions to the ship rather than having to take the ship to drydock, saving a considerable amount of time and money in doing so.

This class accepted method is performed by our diving teams under our warranty. It can be used while the ship is carrying out its usual cargo or other commercial operations in port.

Visit the special stern tube seal repair section on our website for more information and examples of the many seal repairs we have performed in recent years.

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# Underwater propeller blade replacement in Tasmania

**Last month we wrote about a stern tube seal repair in Tasmania. While our team was mobilizing to this job, the owner of the roro ship asked us to also carry out an underwater propeller blade replacement on the vessel's sister ship at the same location. These operations were carried out back to back by our team.**

*Hydrex diver during the lifting of the blade.*

As soon as the seal replacement was finished the two ships changed place and our diver/technicians started the second repair. This operation consisted of the underwater replacement of the damaged blade as well as the opposite blade of the main propeller of the vessel.

*Damaged propeller blade lifted on the dock.*

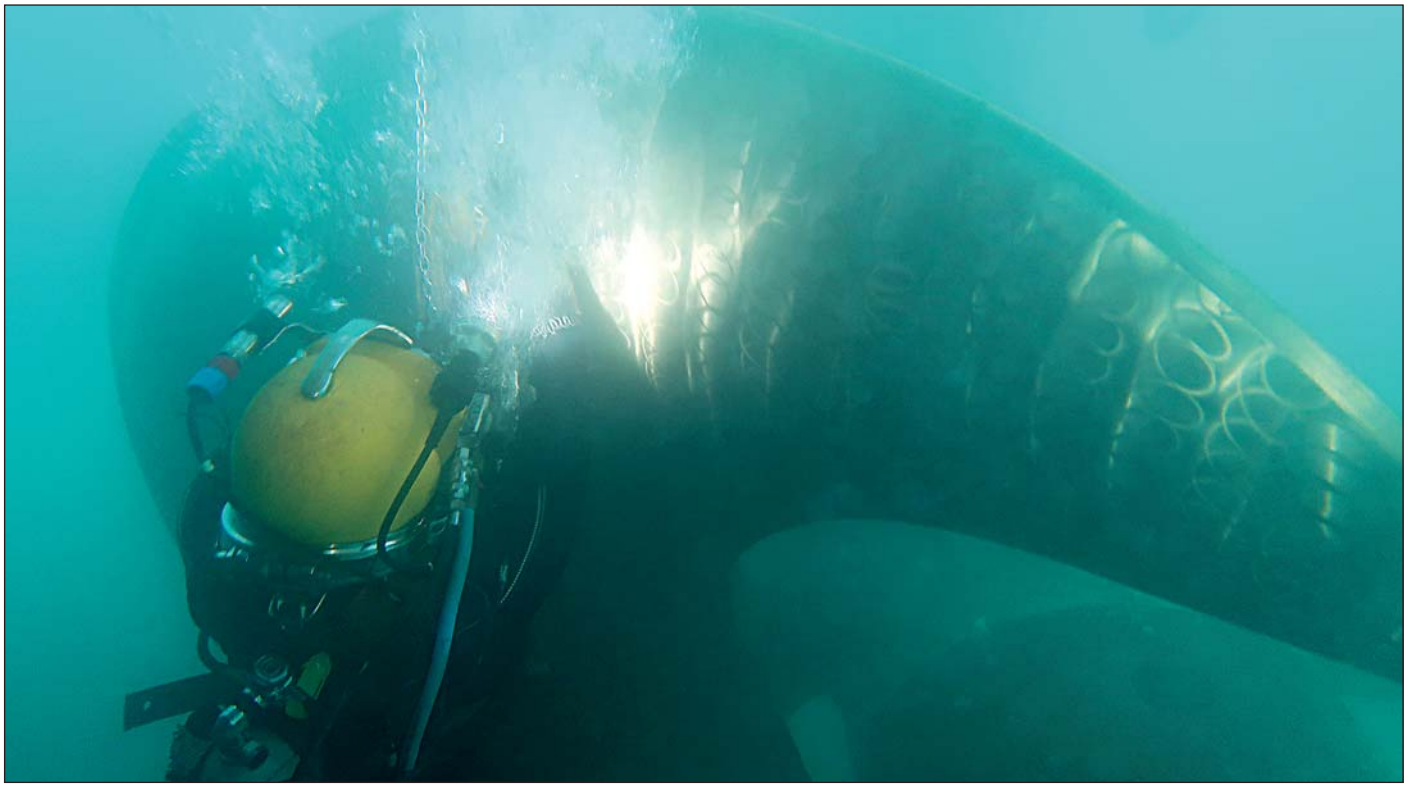
This propeller is designed with a special system to close it off from water ingress during a blade replacement. The operation was performed under supervision of an engineer of the propeller's OEM.

Our men started the repair with the installation of chain blocks to rig the first blade. They then removed the blade bolts and lifted the blade. A spare blade was lowered into the water and put in position. After it was secured and the bolts put on torque, the ship crew turned the propeller 180° to bring the opposite blade in 12 o'clock position. This blade was then rigged with the chain blocks. The diver/technicians repeated the same procedure on this blade to replace it with its spare.

The operation was finished swiftly to enable the owner to sail his ship

*The blade had suffered a very deep crack and needed to be replaced as per OEM recommendation.*

*Roro vessel arriving at the quay with our team ready to start the operation.*



*One of our divers guiding the new blade during installation.*

*Hydrex diver getting ready to take the plunge for installation of the new blade.*

on schedule. No costly drydock visit had to be planned.

Linking jobs like this is no problem for Hydrex. Our technical department has many years of experience in organizing jobs on a tight schedule or back-to-back operations. Our teams are also trained to go from one job to the next without losing any time or quality. The second article in this newsletter is another great example of this.

Contact us for more information on any type of underwater propeller repairs. We are at your disposal 24/7. ■

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# 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. Therefore this new service is now available world-wide.**

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.

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# High quality in-water ship re

# pair and fuel saving services


**Sea valves, sea chests and gratings**
In-water inspection, cleaning and repair of intakes and valves, installation of new sea chests, condensers and coolers afloat.

**Stern tube seal replacement**
Permanent inwater stern tube seal replacements and repairs with the unique Hydrex flexible mobdock technique.

**Propeller operations**
Propeller cleaning with special tools, on-site blade straightening and cropping. Permanent repairs to all types of propellers or installation of propeller cone fins.

**Rudder repairs**
Permanent on-site repairs on all types of rudders with groundbreaking new technology.

**Pintle and bushing repair and replacements**

# Emergency grounding damage repair in Phuket

**While one of our diver/technician teams was performing an underwater bow thruster repair in Phuket, a cruise ship suffered grounding damage while on its way to this location. When our technical department heard about the incident, they contacted the owners of the vessel and proposed to have our team inspect the vessel when it arrived in Phuket and perform any needed repair on-site.**

Because the damage was too severe a permanent repair was not an option. A drydock visit in Singapore

*A doubler plate was designed, fabricated and installed by our team on-site.*

*A cruise vessel had suffered a large gap and smaller hull penetrations after a grounding. The bilge keel was also deformed and large scraping marks and indents were found.*


*The doubler plate was secured with screw dogs.*

*A stiffener was installed over the doubler for extra protection.*

had therefore already been scheduled. The ship could however not sail that far on its own anymore. We offered an underwater solution that would allow the vessel to sail safely to Singapore for extensive permanent repairs. The proposal was gladly accepted by the owner.

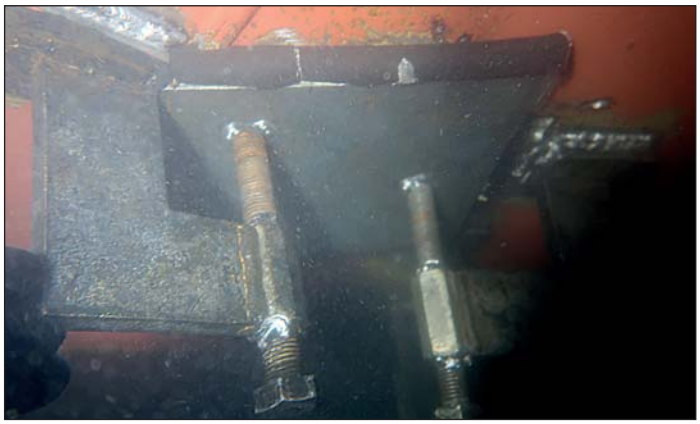
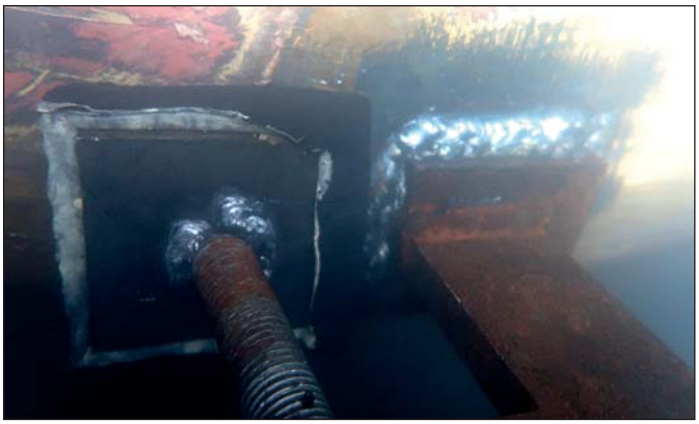
As soon as our team finished the bow thruster repair they shifted their equipment from one quay to the other and started the operation on the cruise ship.

First the divers performed a detailed underwater inspection of the damage. This revealed a large gap in the portside shell plating in the location of the freshwater tank. The bilge keel in this area was also severely deformed. Four smaller hull penetrations were discovered in front of the gap as well as large scraping marks and indents behind it.

After a meeting with the superintendent of the vessel and the attending class surveyor our proposed repair plan was accepted. The repair itself consisted of the installation of a doubler plate over the gap in the hull and patches over the smaller holes.

The doubler plate was designed to follow the contours of the deformed hull perfectly. Together with the patches if was fabricated by our men on-site and installed underwater. A stiffener was welded over the plate and part of the hull for extra protection. The repair was then inspected and approved by the class surveyor.

Our team returned to our Antwerp headquarters after successfully completing the repairs back to back. The cruise ship could sail safely to drydock in Singapore. ■

*Patches were installed over the smaller holes in the hull.*

# Fast on-site emergency repairs allow vessels to keep sailing

**We offer fast on-site repairs in emergency situations. Our teams are ready to mobilize immediately to locations around the world for a wide range of operations. We are at your disposal 24/7 because we know how important it is to have someone you can rely on at all times.**

There are many unfortunate events that can stop a ship from sailing. Ships with a leaking stern tube are often not allowed to enter ports. A vessel can be tied up after a collision or a malfunctioning rudder can prevent safe maneuvering. Going to drydock is obviously not an option in such cases. Arranging the vessel to be unloaded at sea is an organizational and financial disaster for the owner. On top of this it does not solve the problem, because the damaged ship is still unable to leave its location.

We can perform routine repairs as well as permanent underwater repairs to thrusters, propellers, rudders, stern tube seals and damaged or corroded hulls. We create drydock-like conditions around the affected area to perform these operations on-site and within the shortest possible time frame. This allows the vessel to sail again. In most cases a permanent repair can be performed and no follow-up is needed. If this is not possible, a class approved temporary solution is offered. The ship can then continue its schedule and go to drydock at a more convenient time and location.

Contact us 24/7 if you need immediate assistance. Our technical department is ready to create a tailor-made solution for your specific needs. ■

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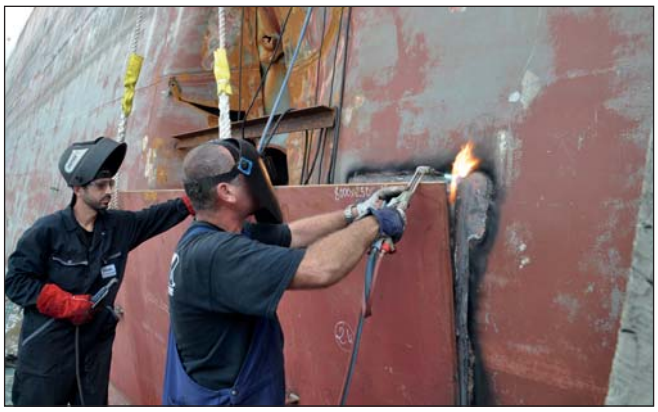
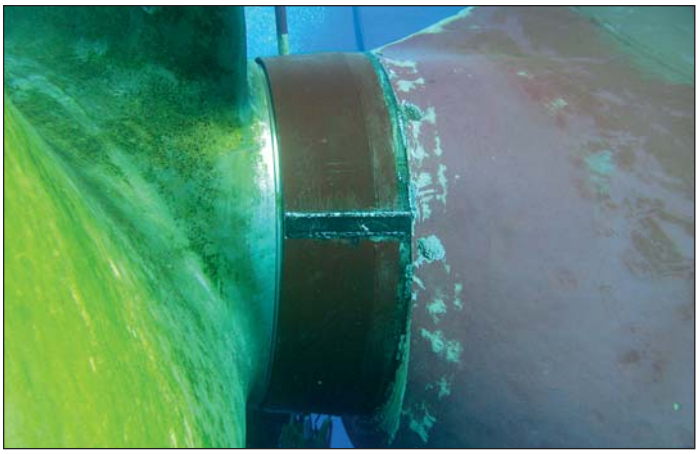


*Hydrex team installing a large doubler plate on a bulker in Ivory Coast after collision.*

*One of our men during emergency scrubber overboard repair in Denmark.*



*Fast rope guard replacement in Cyprus.*

# Hydrex is looking for representative agents

**To support our continuous growth, we are expanding our worldwide network of Hydrex agents. This allows us to reach a much bigger public directly than would otherwise be possible.**

All our offices have fully operational fast response centers where an extensive range of state-of-the-art equipment is available at all times for immediate deployment with our skilled diver/technician teams to wherever they are needed.

The services that we offer are highly specialized underwater and in water repairs. These include bow thruster repairs and replacements, stern tube seal repairs, hull shell plating repairs and replacements, in water surveys and various maintenance work. More information on our services can be found on our website.

Contact us if you are interested in joining our network and help us build a strong relationship with our prospects and customers. We look forward to hearing from you.

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