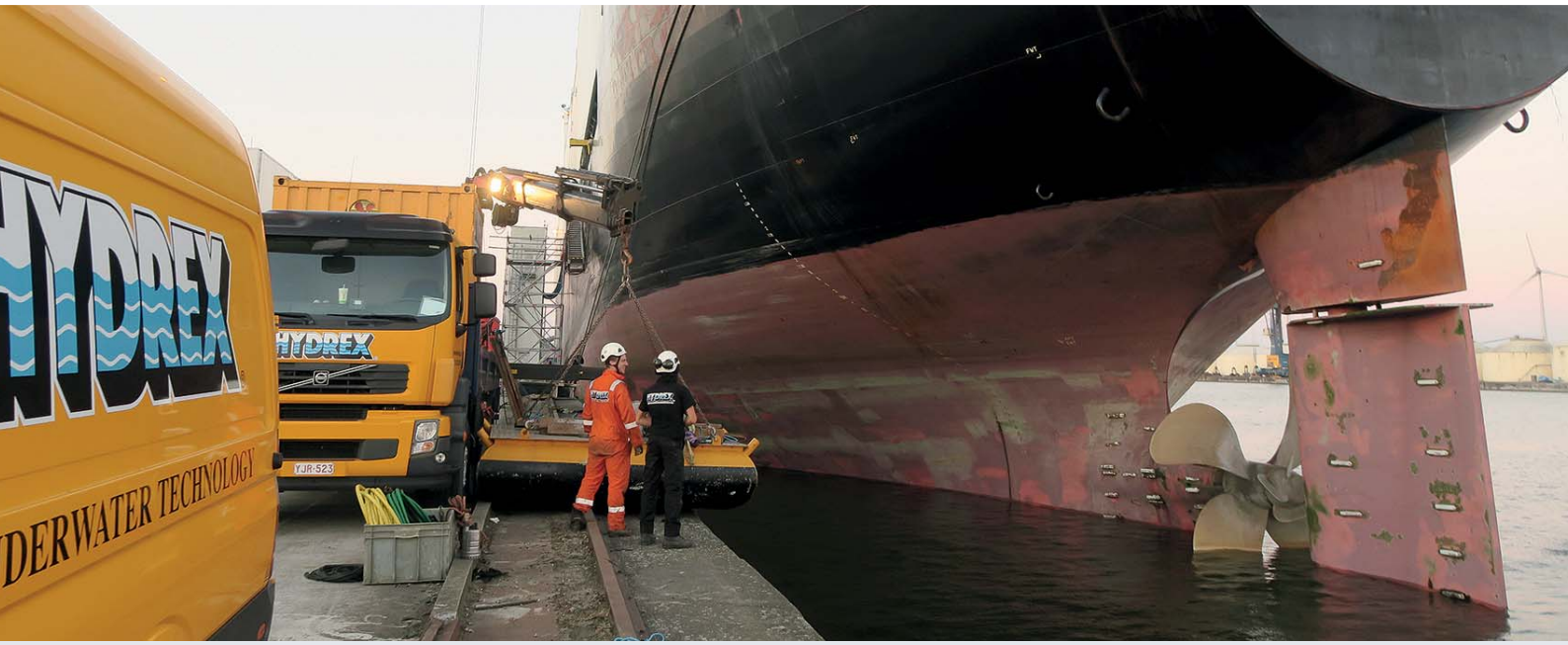
HYDREX®

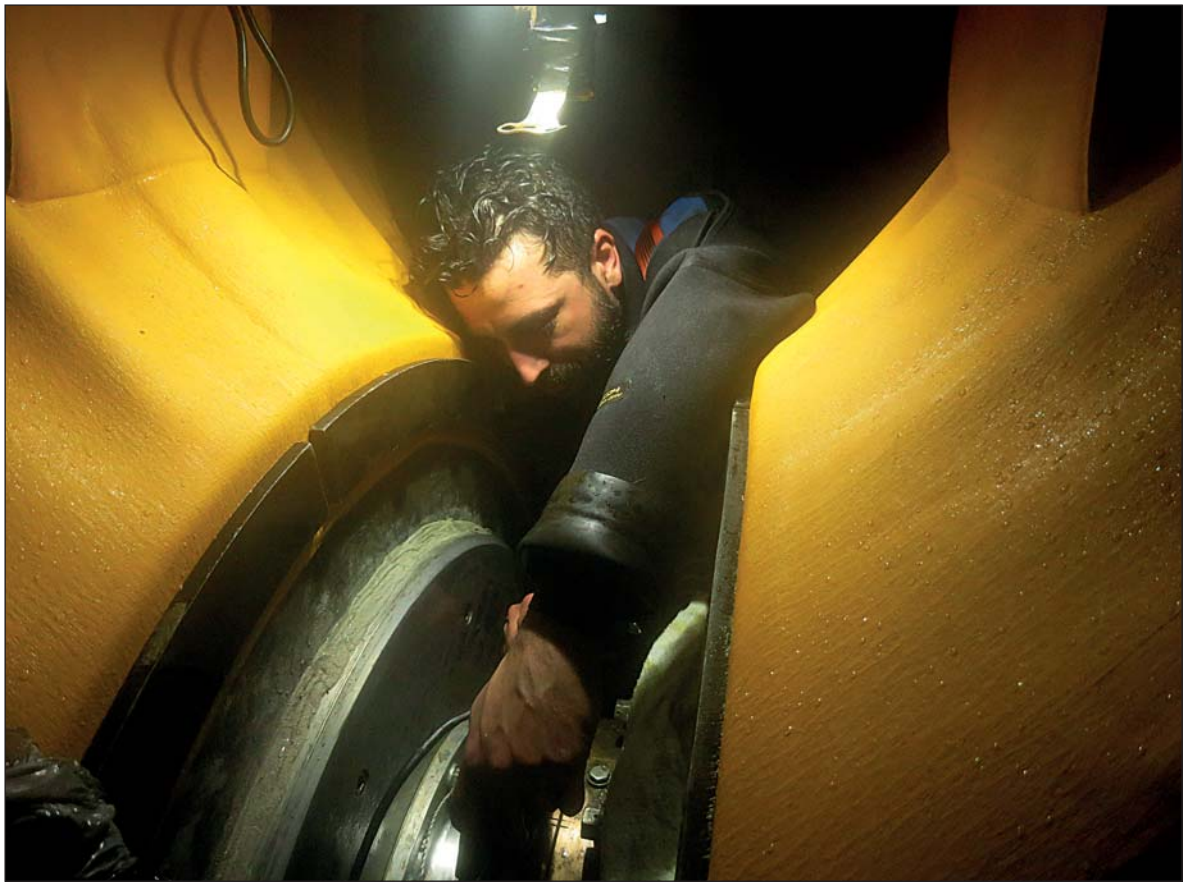
UNDERWATER TECHNOLOGY

Magazine

Number *259*



In-water 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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Editorial

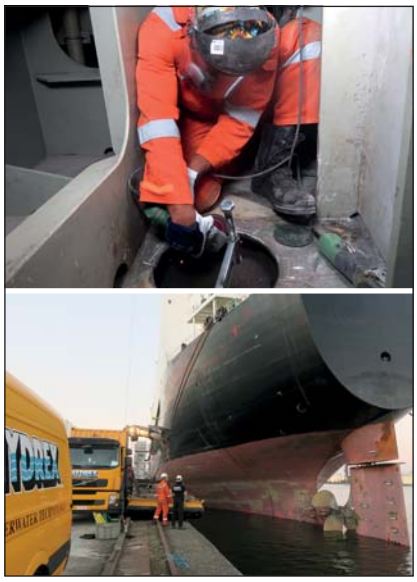
In June Hydrex and sister company Subsea Industries attended the Posidonia exhibition in This event was very successful and we are looking forward to working together with the people we have met. You can read about this event in the second article in this magazine.

We also write about several on-site operations carried out by Hydrex diver/technicians. These operations were performed with one purpose in mind: to avoid delay for the customer and keep his ship out of drydock.

In Panama our team renewed the entire stern tube assembly of a 156-meter vessel. This allowed the owner to keep his vessel on schedule. The same was achieved for a roro vessel in Eemshaven when we installed the flange of a new echo sounder system in a single day.

We hope that this magazine will encourage you to contact us if you have a problem or need maintenance work carried out.

Hydrex founder
Boud Van Rompay



Cover: Hydrex teams during operations in Belgium and the Netherlands

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ISO 9001 certified

Underwater services and technology approved by:

BUREAU VERITAS
ABS
ISO 9001
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ADC International
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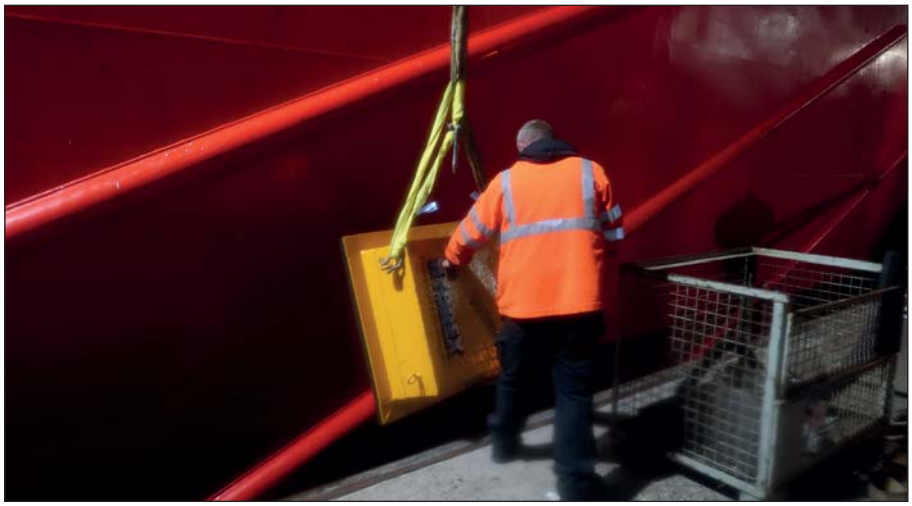
Installation of new echo sounder in a single day

Last month our diver/welders installed a new echo sounder and speed log system in the shell plating of a roro vessel during her stop in Eemshaven. Our teams can very quickly install or replace any type of transducer without any hindrance to a ship's schedule. This was demonstrated when the operation in the Netherlands was concluded in a single day.

Hydrex team members setting up a support station before the operation.

The team mobilized from the Hydrex headquarters in Antwerp, arriving at the vessel's location together with all the needed equipment.

Quayside preparations were made for the operation, which started with an inspection of the tank where the echo sounder was to be installed. A small hole was then drilled in the shell plating to pinpoint the exact location on the waterside of the hull.


Cofferdam lowered into the water.

The team then installed a mobdock, constructed at our fast response center, over the designated area. This allowed them to perform work inside the tank without water ingress. A part of the adjacent frame was removed to give our welders a proper working space for the operation.

The area that needed to be cut away was marked on the shell plating and removed. The edges of the opening were then prepared for the installation of the echo sounder base flange which was positioned and secured with a full penetration weld


The cofferdam was positioned over the area where the transducer was to be installed.

Next an independent inspector car-

The shell plating was prepared for removal.

Removing the shell plating for installation of the new transducer system.

Preparing the edges of the hole.

Hydrex under-water inspections

Underwater inspections are an essential aspect of ship repairs. Building upon conventional technical skills and know-how while also taking advantage of the latest technology, Hydrex offers a unique hull monitoring service to its customers. This gives ship owners total control of the underwater hull and the underwater gear of their vessels. An informed decision can then be made concerning any required follow-up action. Catching problems early can save much time and money.

Hydrex diver/technicians can carry out inspections underwater and on-site very swiftly without disturbing the vessel's sailing schedule.

With fuel costs amounting to 40% of operational expenses and continuing to rise, reducing fuel consumption is a vital concern of ship owners. This is the reason why hull monitoring pays for itself. Underwater hull roughness, marine fouling, bent propellers and poor paint condition are all factors that will increase fuel usage due to the drag or inefficiency created by the damaged or affected area. The data gathered can then be used for a wide range of actions.

Our diver/technicians are trained for a wide range of operations and they can carry out the inspections in port or at anchor anywhere in the world.

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The base valve of the new system was positioned and secured with a full penetration weld.

ried out NDT testing of the weld seams. The system valve was then installed on top of the flange by our team. Finally the cofferdam was removed from the hull, concluding the operation. The combined echo sounder/speed log system was ready for connection to the engine room.

Conclusion

Our divers are certified wet and dry welders as well as technicians. We made sure that the operation was finished in the shortest possible time frame, without any delay for the customer. ■

After the NDT test the valve was installed on top of the flange.

The new echo sounder flange seen from the outside.

KEEPING SHIPS IN BUSINESS

Hydrex at Posidonia 2018

In June Hydrex and Subsea Industries took part in Posidonia 2018, together with our agent for Greece: N. Bogdanos Marine Bureau. The exhibition was a very successful one for everyone involved and we are already looking forward to the next edition.

Subsea Industries Production Executive Manuel Hof (seen on the right in the front of the picture) during the Posidonia Exhibition.

The event set new records in terms of exhibitor floor space, size of conference program and number of visitors. In total, 2009 exhibiting companies from 92 countries and territories and 22 national pavilions welcomed 23.000 visitors to their stands.

According to the exhibition's post-event press release, the proof points of the show's unparalleled appeal and success were evident each of the five days on the exhibition floor and conference facilities of the venue, where a great number of business deals were struck and issues and trends of concern to the international maritime industry were debated.

Theodore Vokos, Executive Director, Posidonia Exhibitions S.A. said: "The list of new business deals goes on and on as multi-million dollar deals on the Posidonia Exhibition floor is the norm, being the most eagerly awaited trade event in the biennial shipping calendar. This year, on our 50 year anniversary, we have witnessed a tremendous response from the global shipping community whose presence and activity helped us deliver the most dynamic Posidonia ever."

Hydrex Sales Officer Steven De Keyzer was present during the entire event. He told us that he had many networking opportunities throughout the exhibition and the N. Bogdanos booth was bustling with activity from start to finish. "Posidonia 2018 was a great success for us. I met many interesting people from the shipping industry," said Steven. "We reinforced existing relationships while new business opportunities presented themselves."

We would like to thank all of you who visited us there for coming and look forward to working with you on an ongoing basis. We would also like to invite you to come and visit us during SMM 2018 at the Holland Pavilion in Hall B7, booth 505. ■

Hydrex Sales Officer Steven De Keyzer (seen in the middle in the picture) explaining the Hydrex services.

Manuel Hof, Steven De Keyzer and members of the N. Bogdanos team posing before the start of a very busy day at Posidonia 2018.

High quality in-water ship re

Permanent insert repairs
Specialist class approved insert repair work carried out on a permanent basis. Providing a real alternative to drydock.

Emergency repairs
Fast response emergency repairs worldwide.

Inwater video inspections
Professional video surveys provide a reality of the problem and enable owners and classification surveyors to directly diagnose any problems.

Echo sounder inspection and replacement

Speed log
Checks for damage, marine fouling and replacement.

Bow thruster and propellers
Permanent on-site repair, maintenance and replacement with the award winning flexible mobdock technique.

Hull cleaning on suitable coatings

Bilge keel
Check and repair broken welds, renewal of sacrificial anodes.

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.

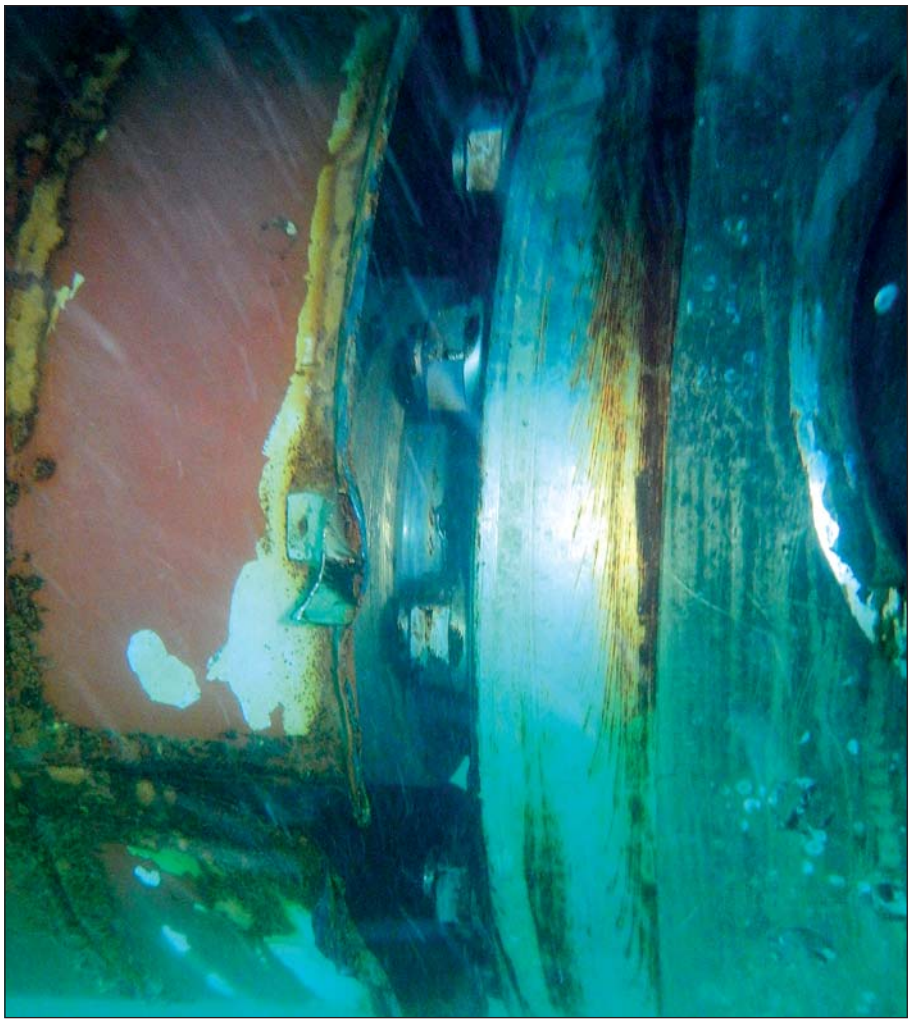
Pintle and bushing repair and replacements

Complete renewal of stern tube assembly allows passage through Panama Canal

When a steel wire got stuck in the stern tube seal assembly of a vessel, it experienced a severe oil leak. The ship needed to pass through the Panama Canal to reach its next destination, but the leak had to be repaired before it was allowed to do so. We flew in a diving team immediately to carry out a fast underwater repair that would help the vessel continue its schedule.

Our team arrived in Balboa, Panama, where the vessel lay at anchorage and sailed to the ship on a workboat loaded with all the equipment needed for the operation.

A thorough underwater inspection revealed that while the wire had been removed by a local diving company, the damage to the stern tube seal assembly was extensive. The rope guard was severely dented and the seal housing had been destroyed. Both needed to be completely replaced. Because the stern tube seal assembly consisted of a split type housing, our team could carry out the entire replacement underwater.



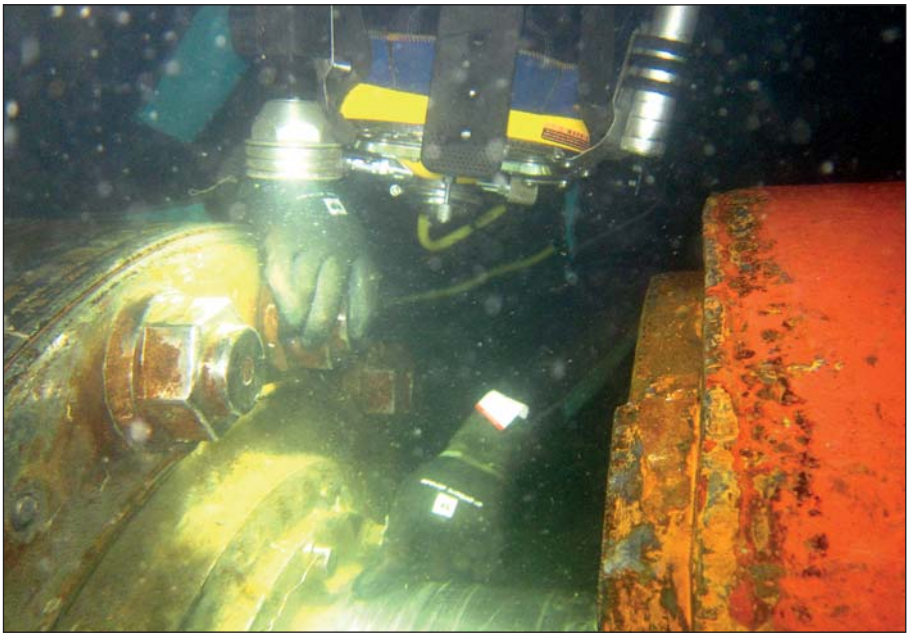
Severely deformed rope guard prior to removal.

Oil leaking from the damaged seal housing.

First they removed the affected parts. Because the seal assembly had already filled up with water due to the damage, the divers did this in the wet. Next they installed the flexible mobdock and created a dry working environment around the stern tube seal assembly. The team could then start installing the new housing.

Damaged rope guard on workboat.

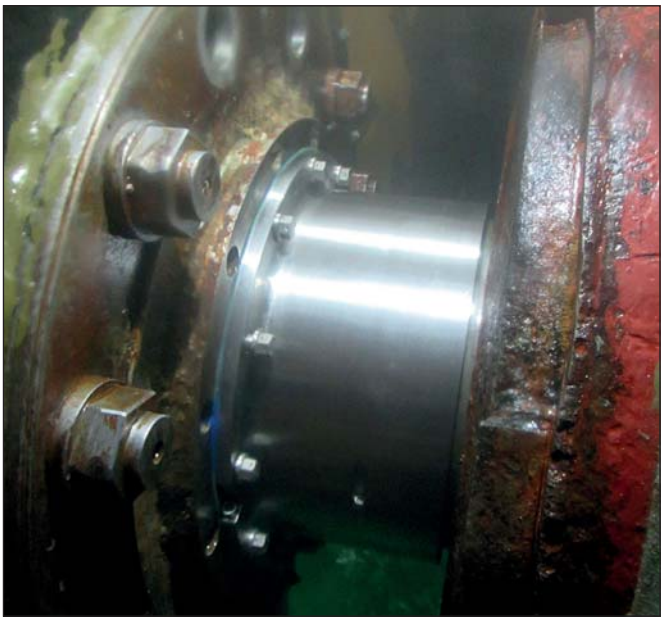
The liner needed to be replaced.



Hydrex diver inspecting damaged liner and running marks of the seals.

The liner was replaced first, as this had also suffered damage from the steel wire. The diver/technicians then bonded the four new stern tube seals and installed the new housing.

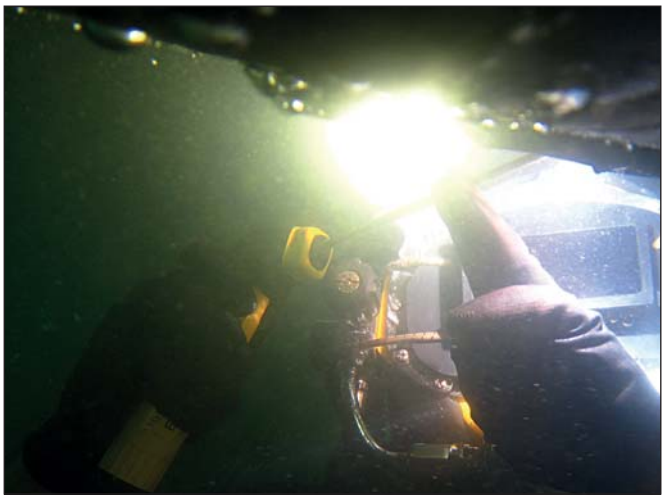
All remaining parts of the stern tube seal assembly were then reinstalled and secured, including a new rope guard. A leakage test was carried out with positive results, after which the divers removed the flexible mobdock.



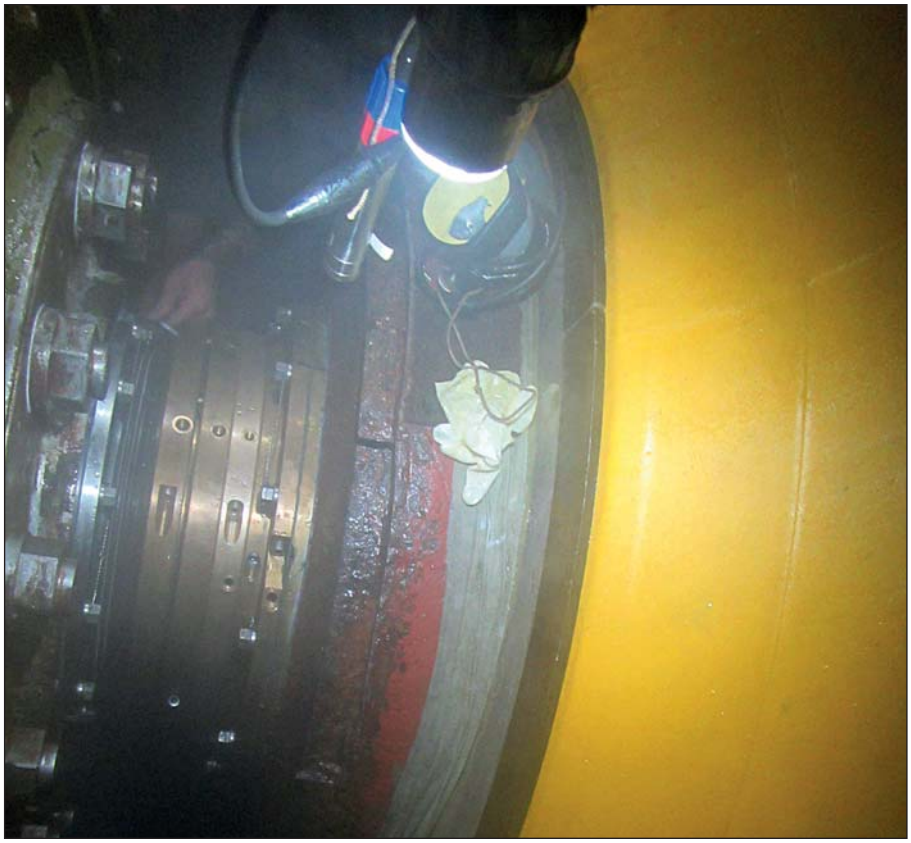
Newly installed liner.

Hydrex diver/technician working on new stern tube seal housing inside our flexible mobdock.

New seals and housing after installation.



Hydrex diver performing welding on the new rope guard.



Finalizing the replacement in the dry working environment created by the flexible mobdock.

Hydrex has the technology that enables repairs to be done afloat and underwater on all types of seals. Using a Hydrex flexible mobdock, we create a dry underwater working environment around a stern tube seal assembly. This allows work to be performed in dry conditions. It offers shipowners a fast and hassle-free alternative to drydock, which was the only option prior to this technology.

Every Hydrex office has a fast response center equipped with all the latest facilities, equipment and tools. These centers were designed specifically to increase speed of service. The lightweight flexible mobdocks packed in flight containers allow for a very fast mobilization and a timely arrival of Hydrex teams on any location around the world with everything they need to successfully complete the job.

Conclusion

The operation was performed by our team in the same time frame as a regular stern tube seal replacement, despite the larger scope of work. Working together with our local support base, they worked in shifts to keep the down time to the absolute minimum for the vessel.

After the repair the owner could sail his vessel through the Panama Canal free of oil leaks towards the next stop on the schedule. ■

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

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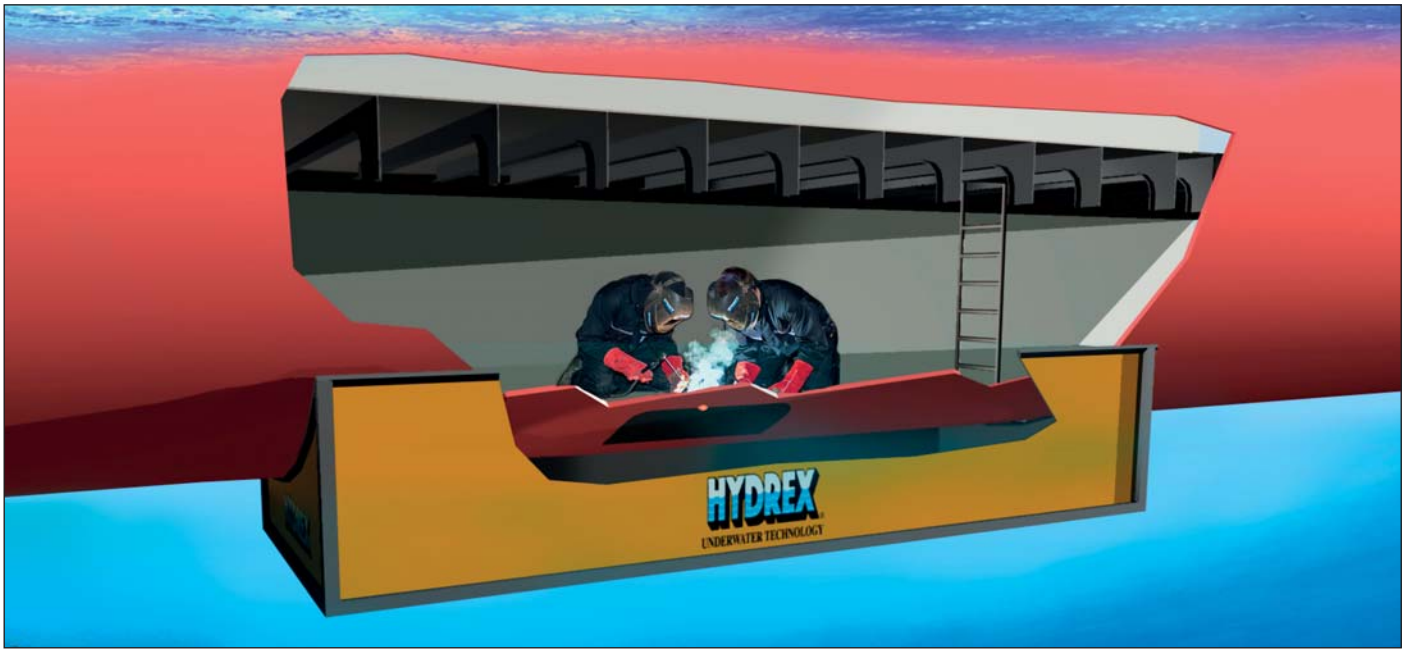
KEEPING SHIPS IN BUSINESS

Hydrex *permanent* hull repairs out of drydock



Hydrex carries out permanent hull repairs without interruption of operations, approved by all major classification societies.

Hydrex developed and delivers *permanent* hull repairs on vessels afloat, fully approved by all the major classification societies. No need to go to drydock. No need to redo later in drydock. Gets your ship back in business fast, saving time and money.

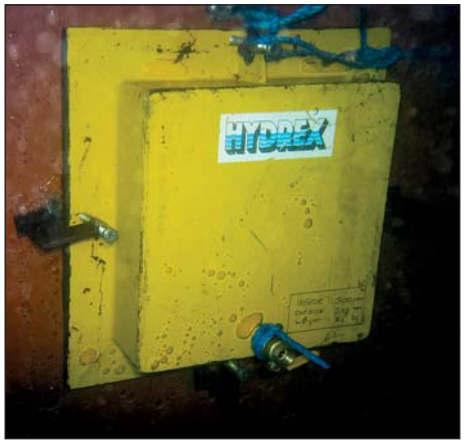
How is it done?

1. We start off with an inspection to determine extent of defect.
2. Made-to-measure cofferdam secured on outside of hull to keep water out and create a dry environment during repair.
3. Crack removal/defective plating cropped.
4. Insert fitted.
5. Insert tacked in place.
6. Class approved full penetration welding from inside the ship and frame renewed as needed.
7. Independent ultrasonic testing to verify the welding.
8. The cofferdam is then removed.

Each step is checked by class before proceeding.

Hydrex will be present at SMM in Hamburg, Germany from September 4 until September 7. We would like to welcome you at our booth 505 in hall B7, Holland pavilion.pavilion.

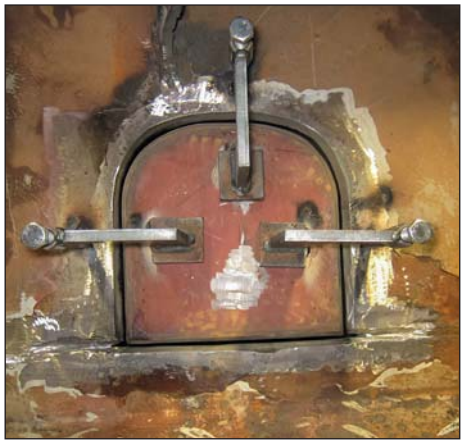
If you would like to learn more about how Hydrex can assist you, please visit our booth at SMM. Our team will be happy to give you the information you need. You can also contact one of our offices if you would like to make an appointment for the exhibition or if you need assistance. ■



Cofferdam placed over crack.

Opening in plate prepared inside tank.

The valve was positioned and secured with a full penetration weld.



Insert cut and fitted.

Insert tacked in place.

Full penetration weld.

Independent testing.

New frames welded.

Example of permanent hull repair:

Inspection of a 172-meter general cargo vessel located in Rotterdam revealed a crack in the port side water ballast tank. An insert measuring 300 x 300 x 15mm needed to be welded and the frame renewed. The Hydrex team located the crack and installed a cofferdam large enough to cover the crack. They created a dry environment so that the plate could be cropped and the insert welded from inside the ballast tank. The cropped area was prepared, the insert fitted and then full penetration welding was carried out. Following ultrasonic testing the frame was fitted and rewelded.

This is just one example of the many permanent insert repairs carried out by Hydrex. Don't wait to go to dry-dock. Get hull cracks and damage repaired now, afloat, *permanently*. It is fast, hassle-free, on-time and cost-saving. ■

In-water bow thruster repairs

The Hydrex lightweight flexible mobdocks are designed to be easily transported around the world and are used to close off the thruster tunnel on both sides, allowing divers to perform repairs and other operations in a dry environment around the bow thruster unit.

This technique enables them to reinstall the propeller blades of an overhauled thruster inside the thruster tunnel after the unit has been secured or replace the blades or seals and perform repair work on a specific part without removing the unit.

Since the development of this flexible mobdock technique, numerous thruster repairs have been carried out by Hydrex diver/technicians around the world.

There is no need to send the vessel to drydock as all operations can be carried out in port or while the vessel is stationary at sea. Normal commercial activities can therefore continue without disruption.

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Always on time

Hydrex offers turnkey underwater repair solutions to shipowners wherever and whenever they are needed. Hydrex's multidisciplinary team will help you find the best solution for any problem encountered with your ship below the water line. We will immediately mobilize our diver/technicians to carry out necessary repair work without the need to drydock.

Hydrex performs complex permanent underwater repairs to thrusters, propellers, rudders, stern tube seals and damaged or corroded hulls. By creating drydock-like conditions around the affected area we can carry out these operations in port or at anchor.

All the projects we undertake are engineered and carried out in close cooperation with the customer and any third party suppliers, relieving the customer of all the hassle of coordination, planning and supervision.

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