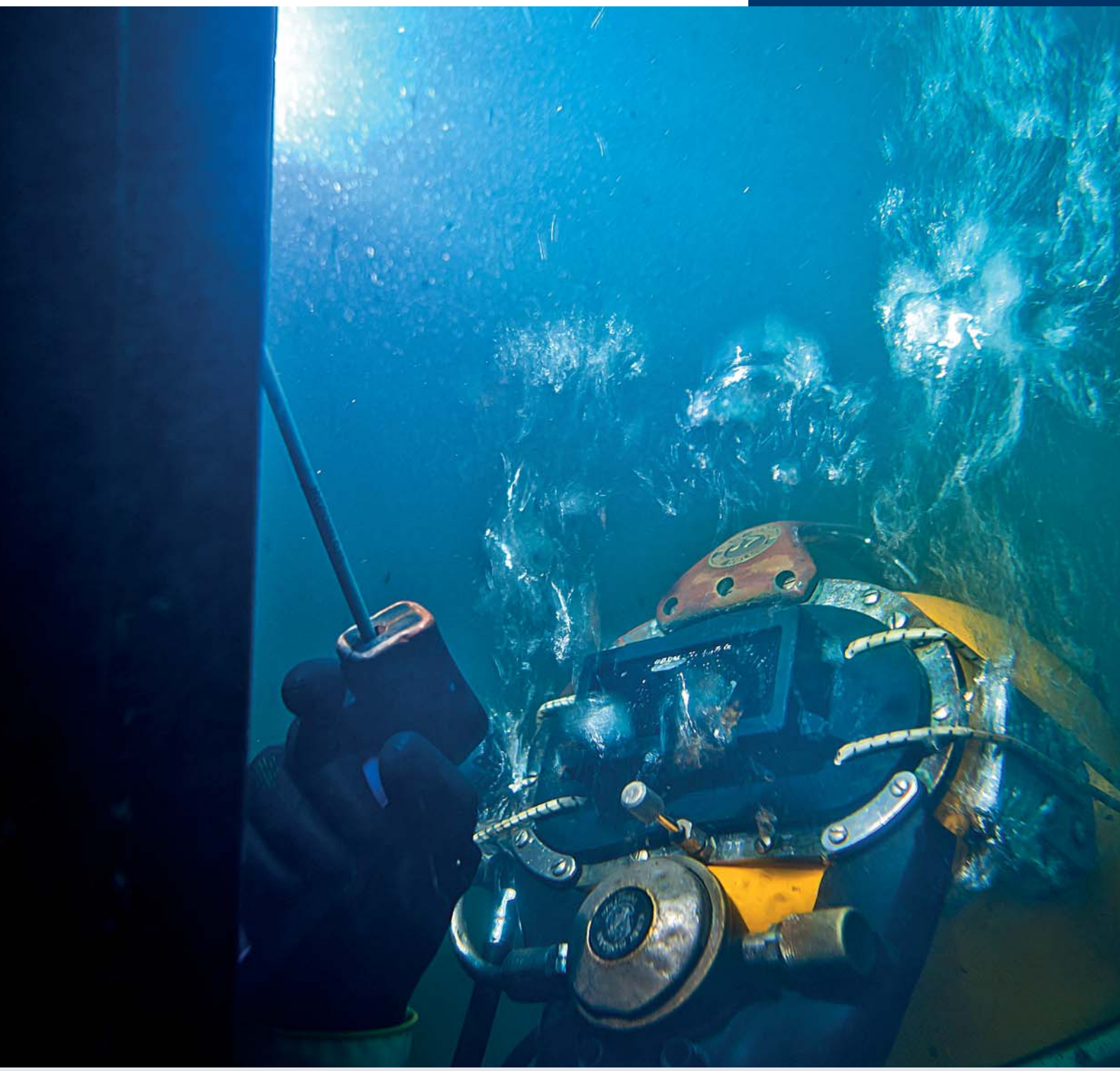
HYDREX®

UNDERWATER TECHNOLOGY

NEWS

LETTER | 226



Contents

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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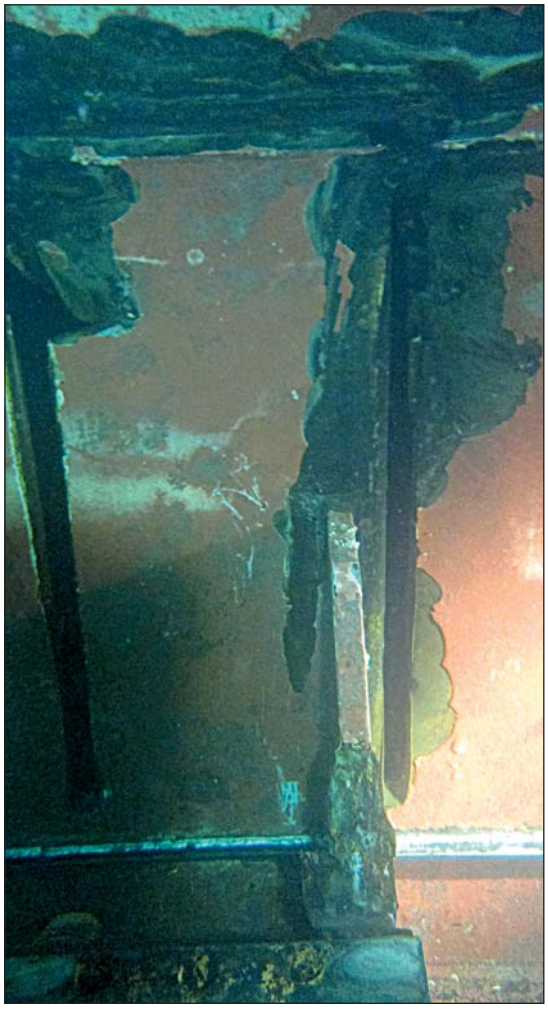
Hull repair on drill ship in Gulf of Mexico



Damage to the moonpool hull of drill ship, caused by loose transit flap.

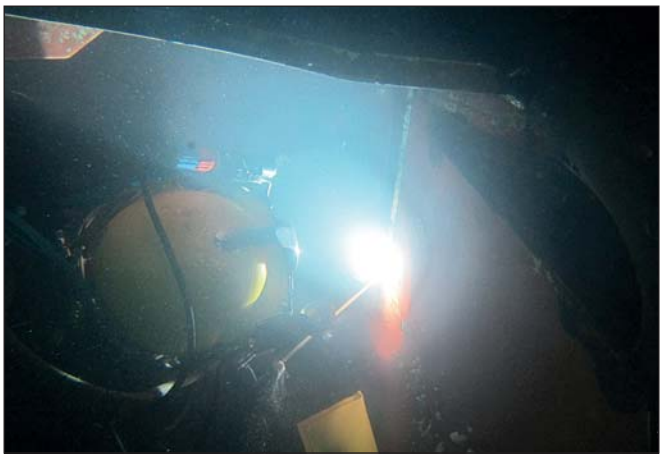
The transit flap of a 225-meter drill ship came loose and started swinging dangerously. This caused damage in the aft bulkhead and a leak in the ballast tank situated behind the moonpool hull. The vessel was located in Trinidad but was about to start a contract in Grand Isles, Gulf of Mexico. A fast solution was needed to prevent further damage and allow the ship to arrive in Grand Isles on time.

Hydrex mobilized a team of diver/technicians to Trinidad. After an inspection of the damage, they disconnected the transit flap. It was then lowered to the ocean bottom and towed away. In Trinidad the divers also took all the measurements needed to design a repair plan for the second phase. Because of the instable condition of the flap, it was essential to keep to the highest safety standards, especially during this first part of the operation.

The drill ship then sailed to the Gulf of Mexico. The limited time frame did not allow for a permanent repair to be carried out at that point, so a temporary solution was proposed and accepted.

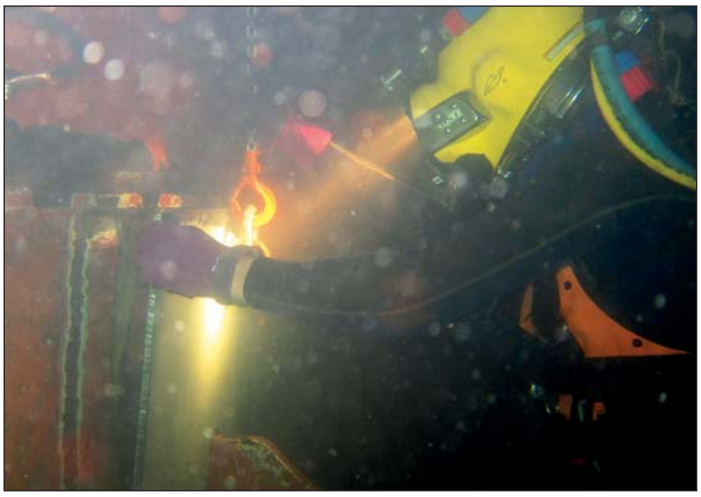
The vessel once again met up with a

Three of the doubler plates used to cover the damaged areas.



Hydrex diver/welder during operation in the Gulf of Mexico.

Hydrex divers getting ready for underwater operation on drill ship.



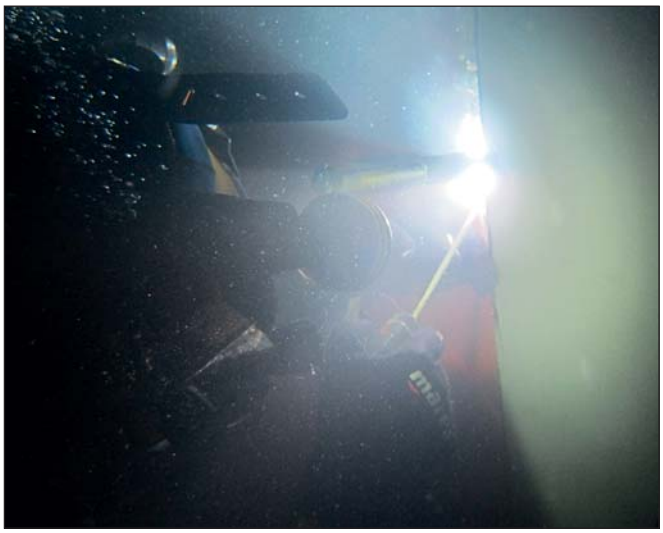
One of the doubler plates being positioned and secured

Diver inspecting one of the doubler plates.

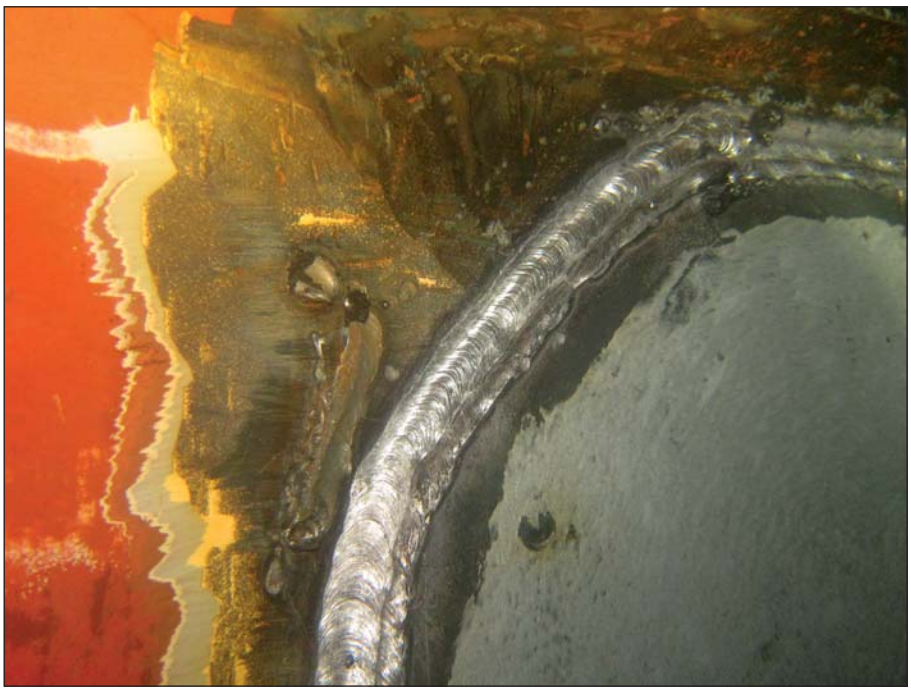
Hydrex team. All the equipment was put on board the vessel before it sailed on to Grand Isles to start its contract.

This part of the operation consisted of the installation of five doubler plates over the damaged areas in the aft bulkhead. Constructed with the exact measurements taken during a detailed inspection, they were positioned and secured underwater by our certified diver/welders. All water was then emptied from the damaged ballast tank. The crew of the drill ship performed an inspection of the tank and confirmed that the compromised hull was once again fully sealed. According to one of the crew members "the team did a fantastic job and the final welds amazed everyone on how clean they turned out."

Hydrex team leader supervising the operation inside monitoring station.



Welding one of the doubler plates.



Weld seams of doubler plates installed over damaged hull areas.

Hydrex can offer its customers the high quality of service they deserve while guaranteeing the safety of the divers at all times. Our diver/technicians are trained and qualified to perform all required repair procedures in even the harshest conditions.

Thanks to the installation of the doubler plates the ship could safely start its contract. A permanent solution can now be planned at a more convenient time. ■

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:
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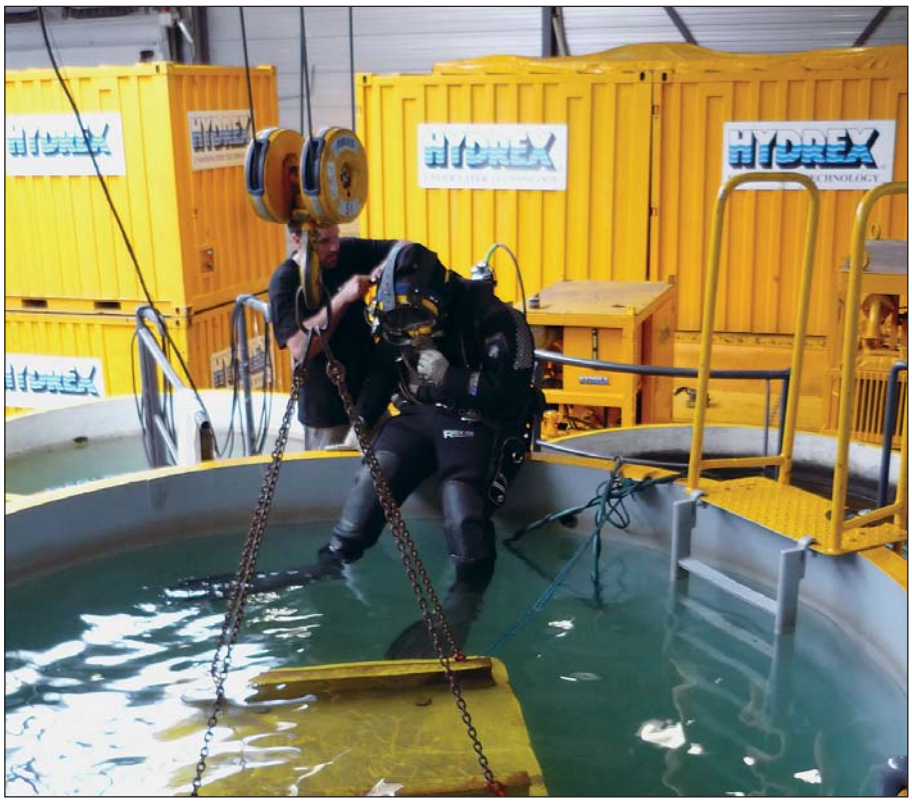
or at
+ 32 3 213 53 00

Hydrex diver training programs result in an exceptional safety and efficiency record

Hydrex can offer its customers the high quality of service they deserve while guaranteeing the safety of the divers at all times. This can only be done successfully by staff who have familiarity with a wide range of operations as well as the relevant know-how. Our diver/technicians are trained and qualified to perform all required class-approved repair procedures in even the harshest conditions.

This is a result of the stringent training all divers go through. Whether they work for the Hydrex main office in Antwerp or for one of the other offices. Besides being required to have official international commercial diver certificates and taking high standard external courses, including safety and offshore cour-

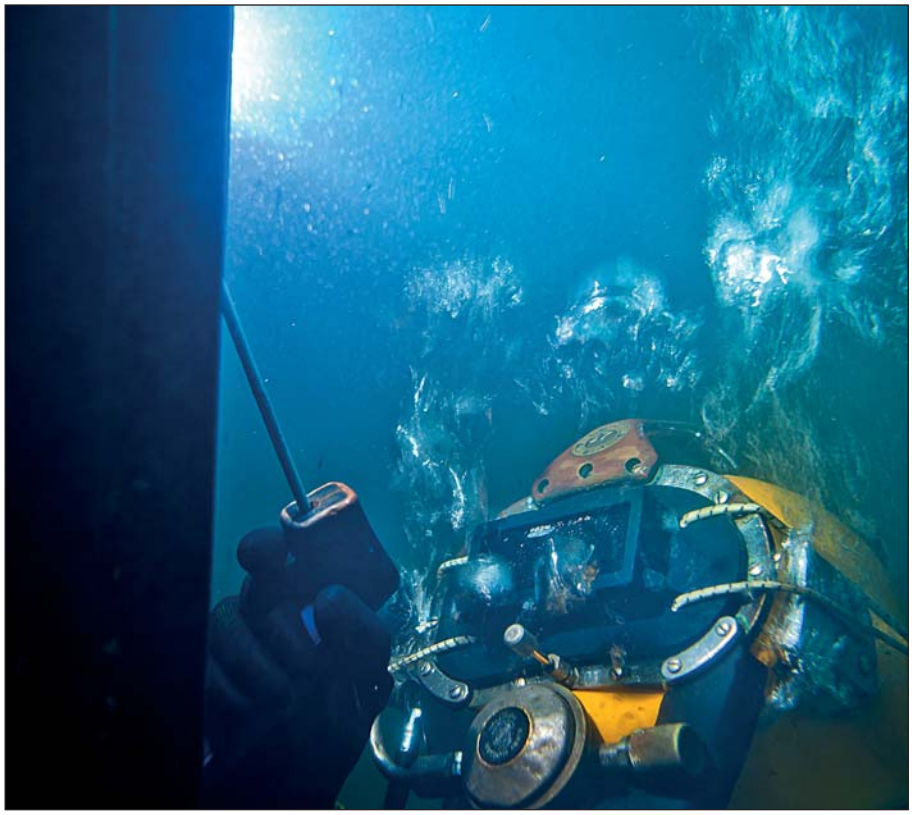


Diver ready to enter one of the training tanks at the Hydrex headquarters in Antwerp.


Helicopter escape training.

Dry welding practice.

Hydrex team members preparing to mobilize from the fast response center in Antwerp.



In-house practicing of wet welding.

Training tanks and equipment in fast response center.

ses, they also receive comprehensive in-house training.

Training consists of both theoretical classes in the course room and practical drills on the Hydrex premises. There they have access to a wide range of underwater tools and various other equipment, including three dive tanks in which to practice underwater welding and other repair work.

In addition to these classes, new divers also get the opportunity to assist experienced Hydrex diver/technicians during operations. The training enables them to become experienced divers and technicians themselves and to take advantage of the technical know-how and practical knowledge Hydrex has accumulated over the last 40 years.

When their training is completed, Hydrex divers can carry out both simple and complex jobs even in harsh circumstances and achieve this uniformly without unnecessary loss of time or quality or safety. This has led to an outstanding safety record, with no significant accidents occurring since the company was founded in 1974. This results in the extraordinary dependability that our customers deserve. ■

Swift on-site bow thruster operations

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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Dive support workboats offer many logistic possibilities for our customers

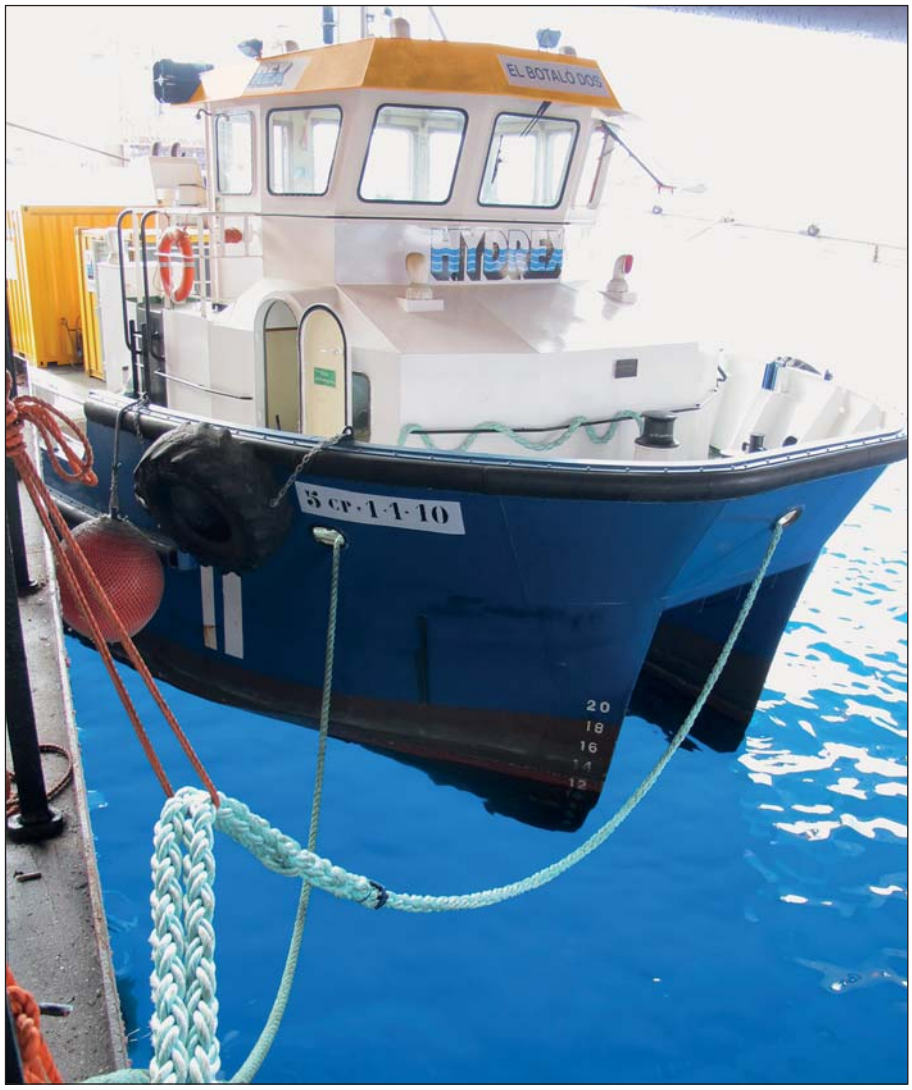
The Hydrex headquarters in Antwerp has two dive support workboats available for immediate mobilization. Both vessels can be used for a wide range of operations in Belgium, the Netherlands, the United Kingdom and France.

The catamarans are fully equipped as dive support stations with hydraulic cranes, hydraulic winches, nautical and communication equipment and a dive control room. A PDF document with details about the vessels can be found on our website (http://www.hydrex.be/case-story/89) or requested by contacting our office in Antwerp.

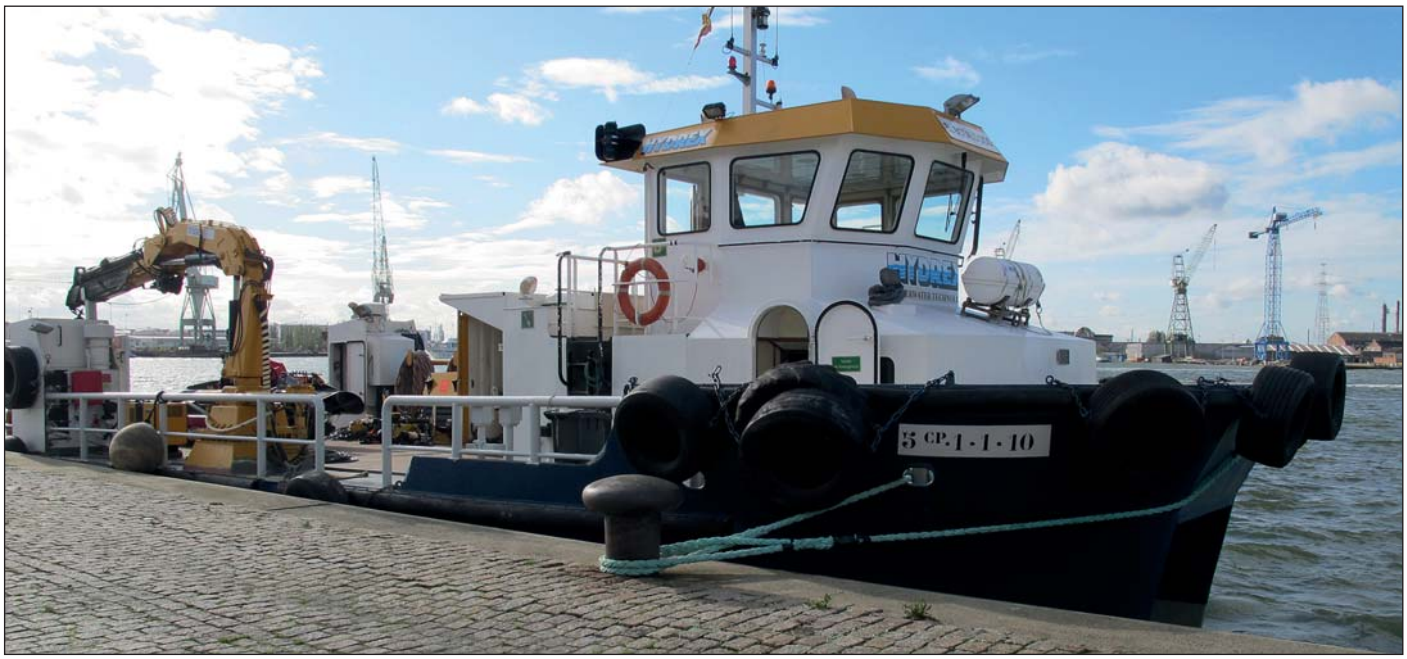
The workboats are usually docked right outside the Antwerp office, where a wide range of state-of-the-

Both workboats are fully equipped as dive support stations.

Hydrex has experienced diver/technicians ready to mobilize together with the workboats.



Hydrex workboat during operation.



The workboats are stationed in Antwerp where a wide range of equipment is available.

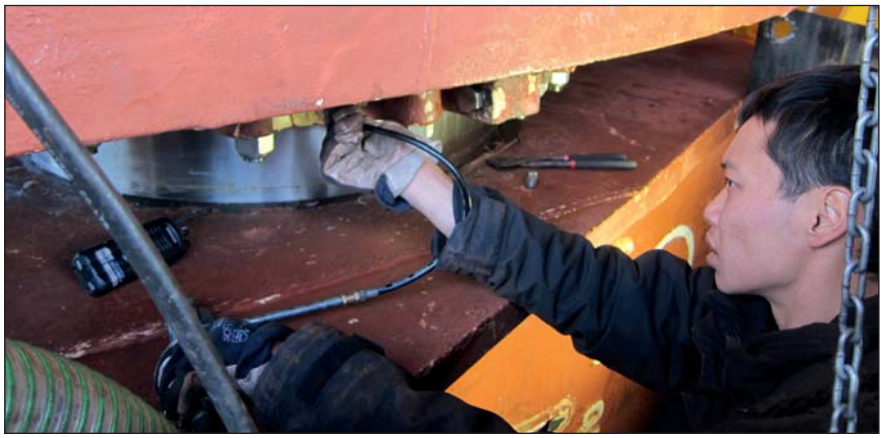
art equipment and tools is available at all times.

Hydrex has experienced and certified teams of diver/technicians ready to mobilize together with the workboats. They can carry out routine operations as well as highly technical repair work within a very short time frame and all to Hydrex's well-known high quality standards.

You can contact us 24/7 for more information about these vessels or the underwater services Hydrex offers. ■

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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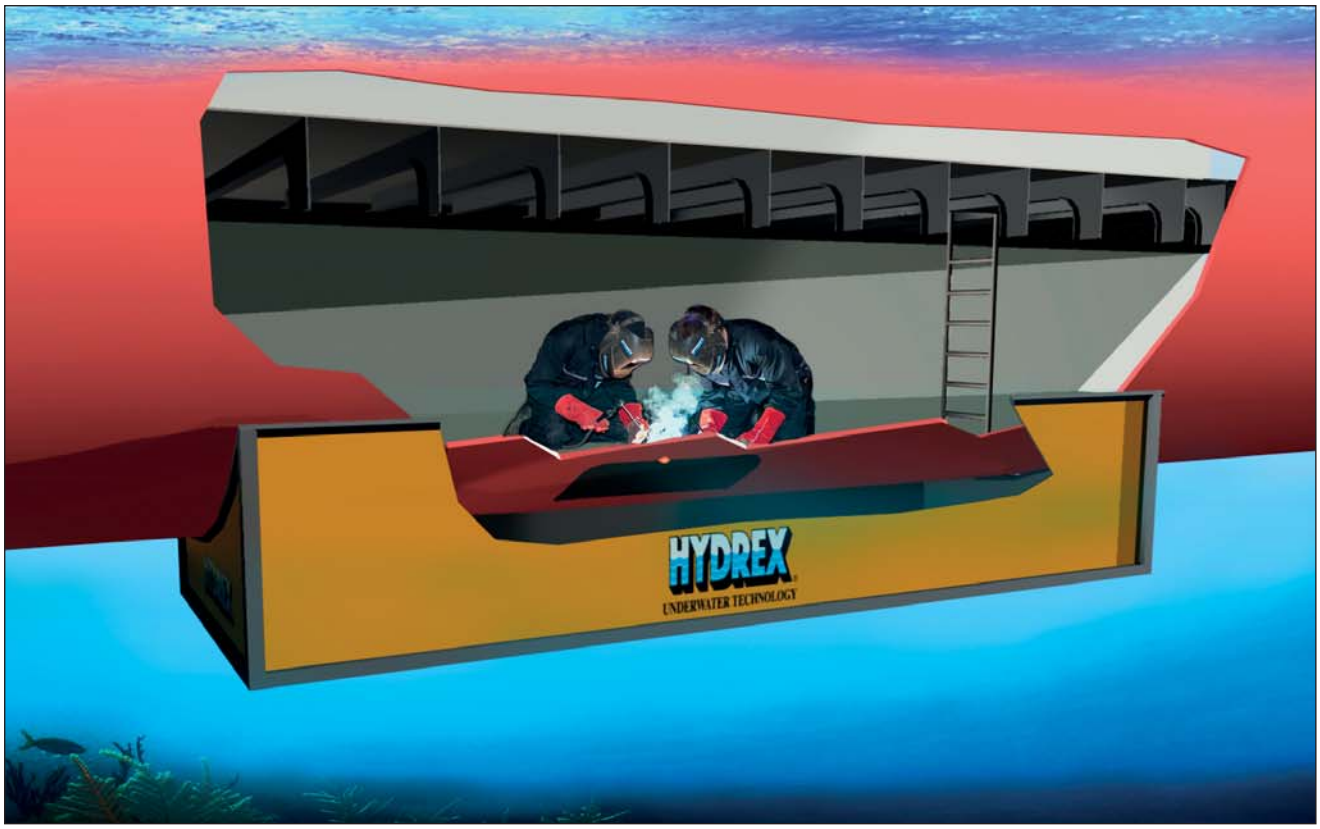
Fast underwater ship hull repairs save time and money



Hydrex on-site hull repair services include the renewal of both small and large areas of damaged hull plating. These repairs can be carried out above or below water, according to the circumstances, with tailor-made mobdocks. Normal commercial activities can therefore continue without disruption. These operations follow the Hydrex procedure for welding cracks in the vessel's shell plating and they are approved by the major classification societies.

Hydrex diver/technician teams carry out these on-site hull repairs all over the world. In most cases the damaged area can be replaced with a permanent insert and no condition of class is imposed. On the rare occasions where the damage does not allow such a repair, a temporary doubler plate is installed over the affected area. This allows the owners to keep to their schedule and have a permanent repair carried out during the next scheduled drydock visit.

To offer the fastest possible service to customers, Hydrex offices have fast response centers where an extensive range of state-of-the-art tools and diving support equipment is available at all times for the repair teams.

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Keeping ships in business

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 has a long track record of performing 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, our diver/technicians 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.

Headquartered in the Belgian port of Antwerp, we have offices in Tampa (U.S.A) and Algeciras (Spain).

All Hydrex offices have fully operational fast response centers where an extensive range of state-of-the-art equipment is available at all times.

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