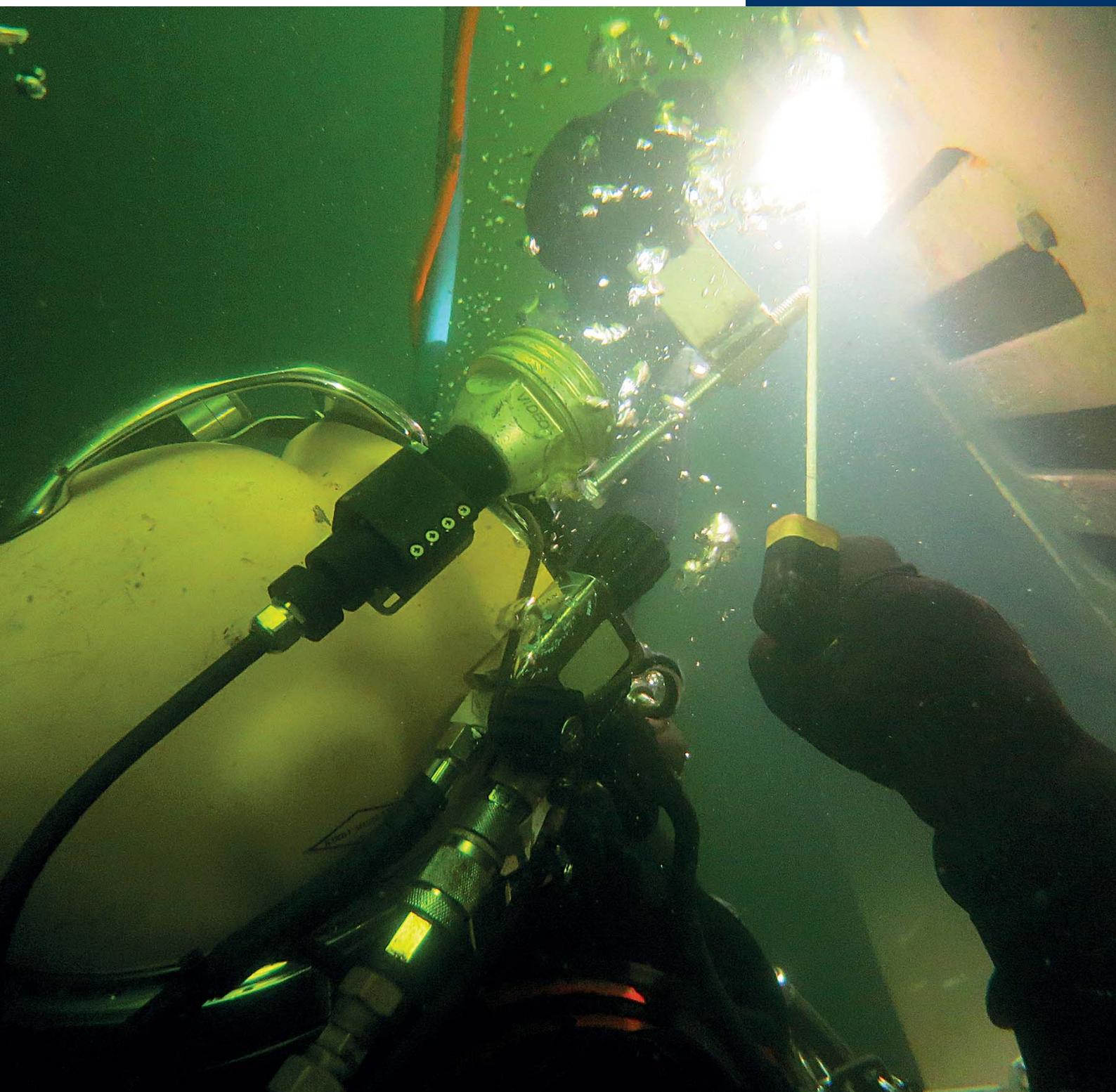




UNDERWATER TECHNOLOGY

NEWS

LETTER | 276



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### ISO 9001 certified

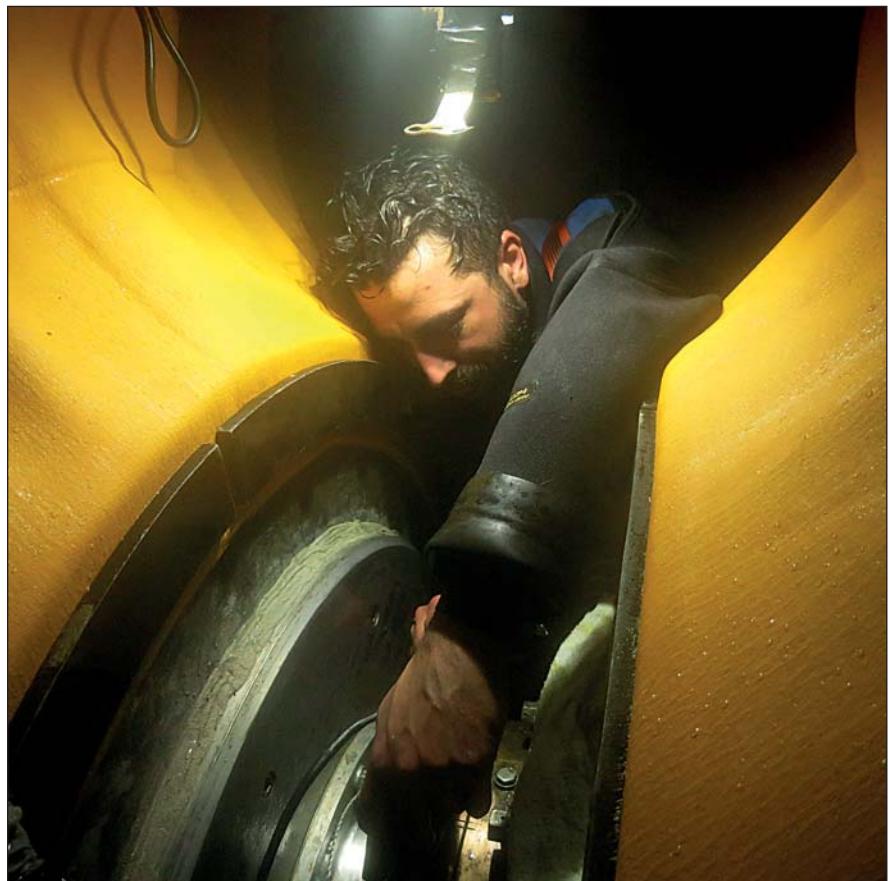
Underwater services and technology approved by:



**ClassNK**



## Stern tube seal repairs



**U**sing 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.

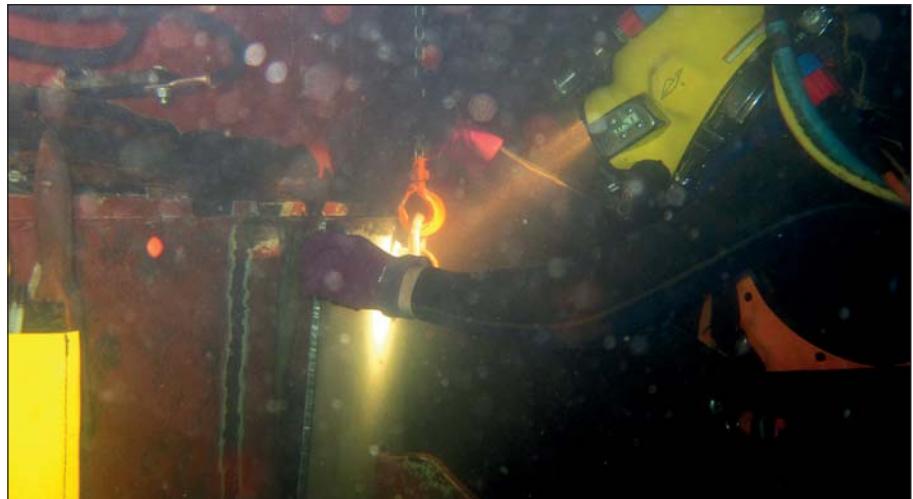
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UNDERWATER TECHNOLOGY

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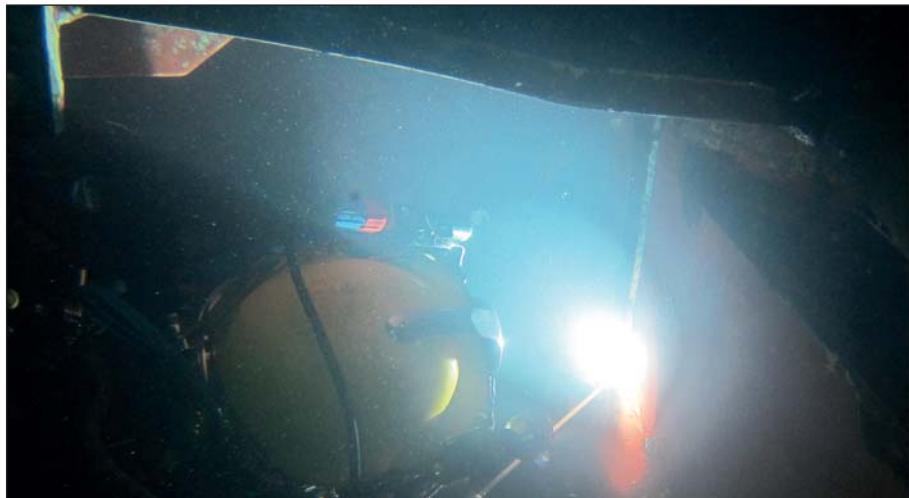
# Hydrex receives grade A wet welding certificate

We have received the approval to carry out classification certified *grade A* wet welding. To guarantee the required high standard of these underwater welds, NDT tests were performed by ABS surveyors before the certificate was awarded.

The certificate was given to carry out grade A groove welding underwater. Most companies with a wet welding certificate can only carry out fillet welds and this often only to



*Positioning a doubler plate.*



*Securing the doubler with wet welding.*



*Inspecting the welded doubler plate.*

grade B or C. Cavitation or corrosion damage on rudders, clad welding, rope guard repairs, mewis duct repairs, ... can now be done with permanent welding.

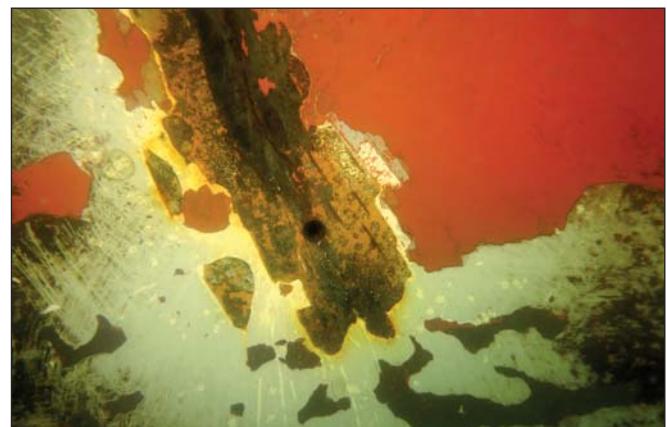
With a class B weld an inspection of the weld is required every three months. With class A welding the deadline for an inspection is much longer. This is decided by the attending surveyor on a case by case basis.

Any required inspection will be for the underlying problem causing the damage and not for the welding work. An internal structural problem causing damage will not always be handled after the repair and will need to be followed up. For instance, doubler repairs can never be permanent because the doubler is installed over the damaged plating instead of replacing it (as is the case with insert repairs).

With class A underwater welding only a note is made stating that the affected area needs to be looked at



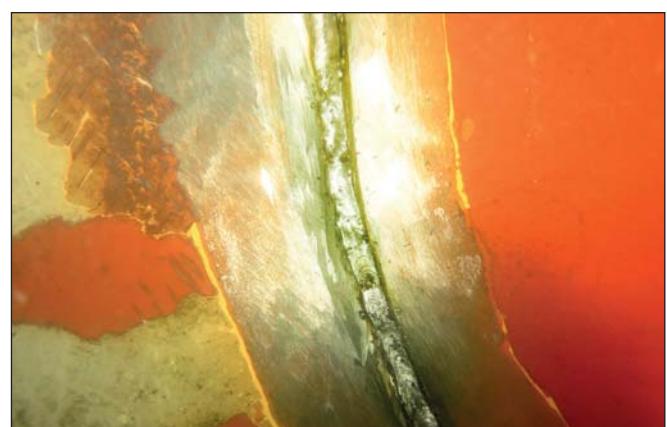
*Weld seams of doubler plate installed over damaged hull area.*



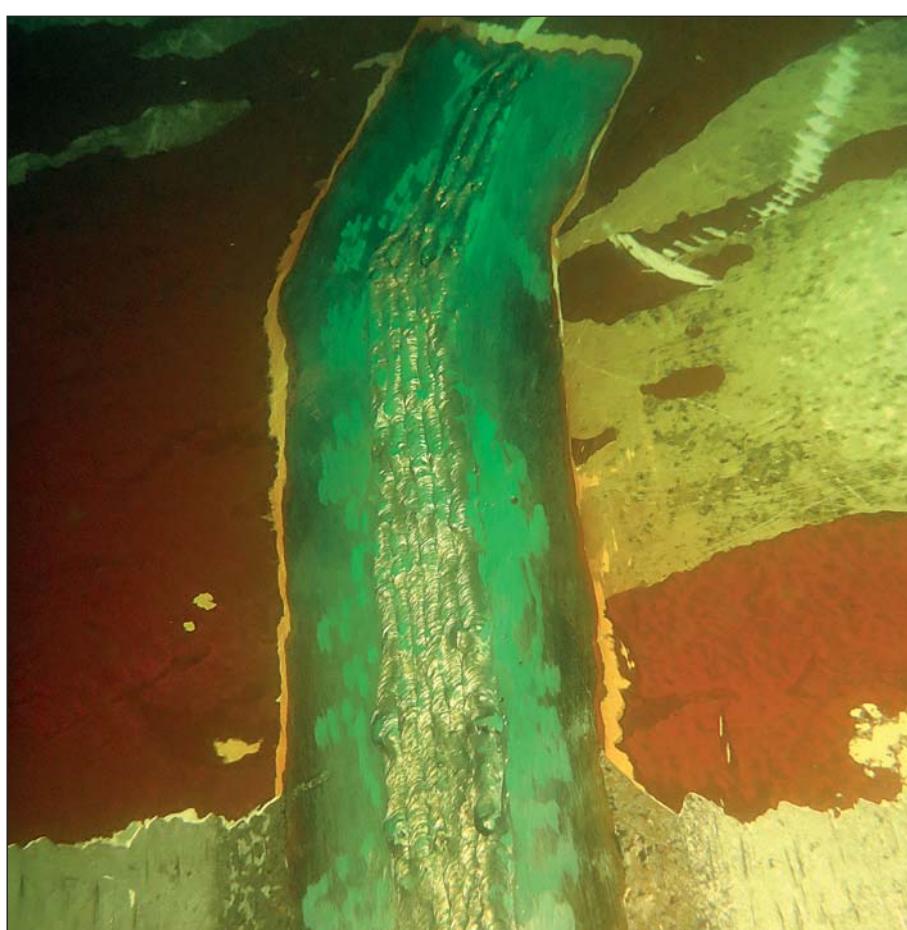
*Rudder crack.*



*Crack and the surrounding area cleaned and ground out.*



*Root weld put in the crack.*



*Groove weld used to fill crack.*

during the next scheduled inspection. This is very important for tankers as a clean class certificate is requested by most charterers.

Even for non-class items like rope guards the certificate is useful because it shows our customers that our diver/welders can carry out high quality underwater welding work. This is very important for offshore units where high quality standards need to be verified before welding operations like doubler repairs can be performed.

Our divers are not suddenly better welders. They always knew how to perform the best underwater welds. Their skills have now been officially recognized. ■

# 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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[www.hydrex.be](http://www.hydrex.be)



# 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.



# pair and fuel saving services

## KEEPING SHIPS IN BUSINESS



**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.

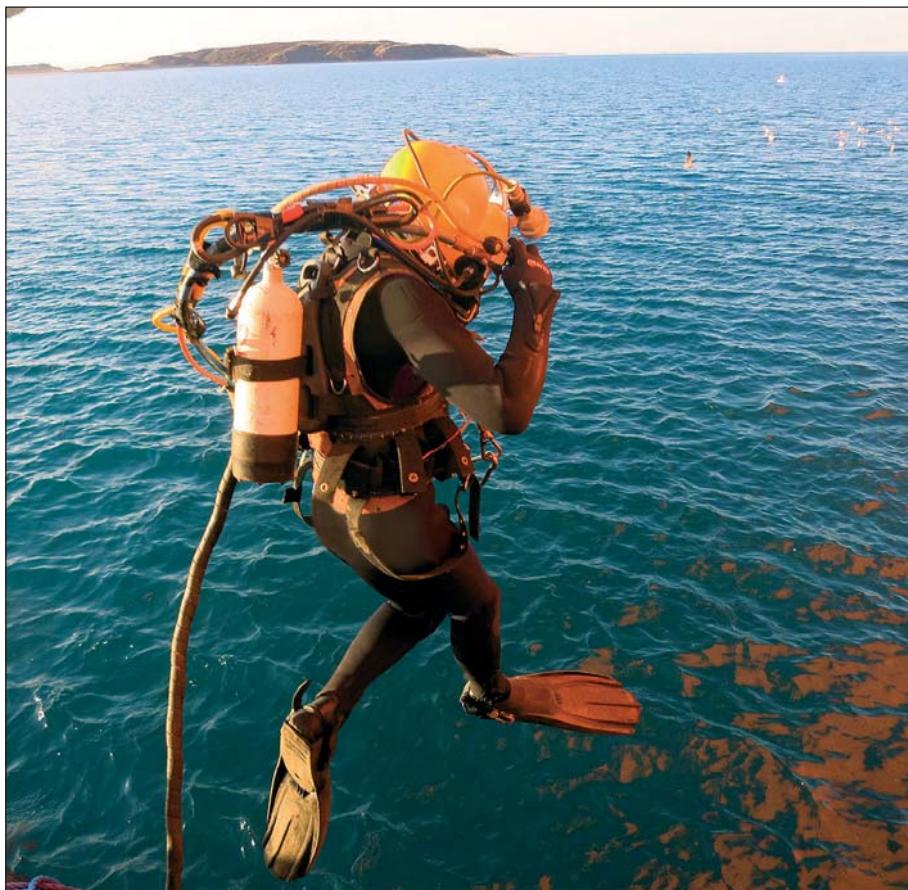
**Pintle and bushing repair and replacements**

# Hydrex Spain in Algeciras, Gibraltar: Ideal for underwater operations

As part of the Hydrex group, our office in Algeciras takes advantage of our 45 years of experience in the ship repair and maintenance industry. The ideal location of the office allows for a fast response in the bay of Algeciras and Gibraltar.

Hydrex Spain offers a large variety of maintenance programs and repair works for ship owners and the offshore industry, including underwater and afloat repairs.

Diving conditions are very good in Algeciras making it a perfect location for repair work. The shelter of the bay and the visibility are ideal to anchor a vessel and have repair or maintenance work carried out. For all ships making their way across the Atlantic to the American continent



*Hydrex diver taking the plunge, ready for underwater operation.*



*Hydrex van during underwater operation in Algeciras.*

Algeciras is also an ideal place for berthing or bunkering.

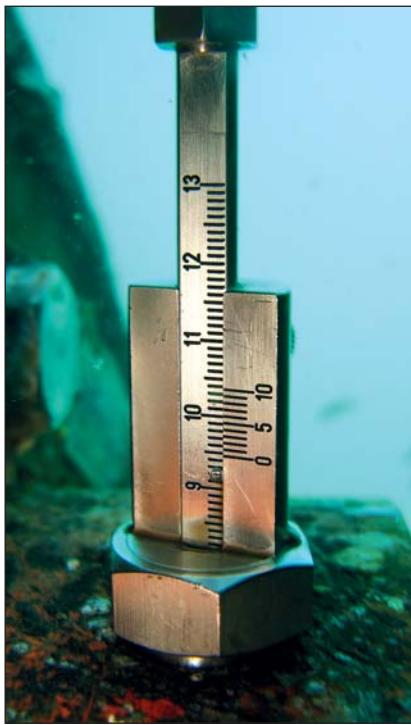
## Maintenance

Underwater maintenance services are available for vessels of any size, including propeller cleanings, class accepted video surveys, visual and photo surveys or tail-shaft wear down readings.

Underwater inspections represent a small investment and, if properly done, have the potential to save an owner a great deal of money. If any damage is discovered the repair work can already start while the rest of the equipment is mobilized. This is possible because welding tools



*The location of the office allows for a fast response in the bay of Algeciras and Gibraltar.*



*Underwater inspections can save a great deal of money.*

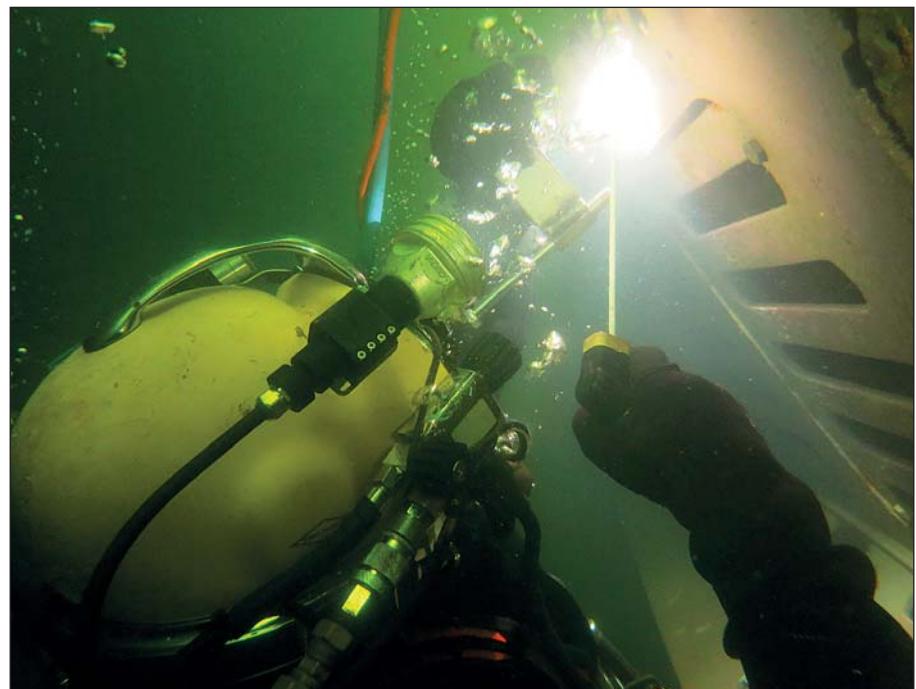
for both wet and dry welding work and a range of other repair equipment are already in the office's fast response center.

## Repairs

Repair work consists of propeller repairs, temporarily or permanent shell plating crack repairs, mobdock repairs, rudder pintle repairs and any type of welding work. Hydrex Spain also offers a wide range of afloat repair operations including any type of steel and pipe repair and conversions.



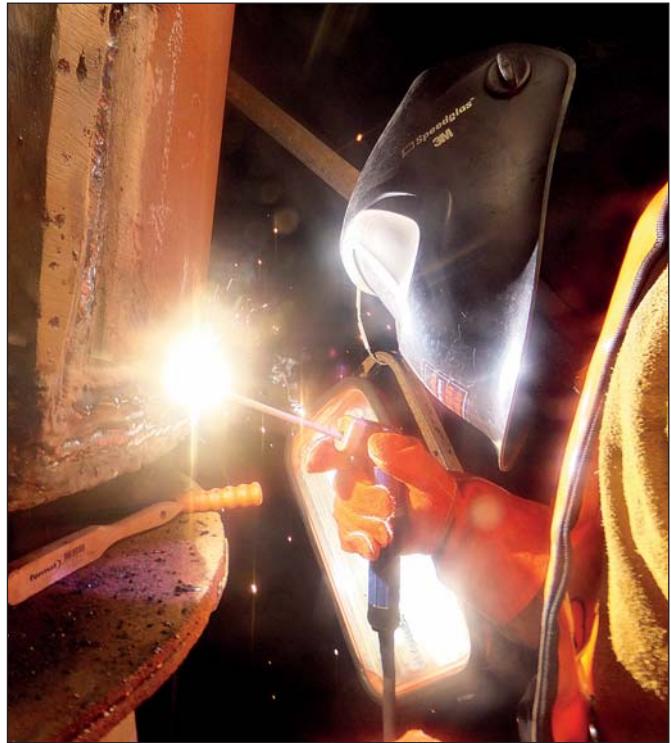
*Anode replacement and other maintenance work can be done at very short notice.*



*All welding work is carried out by certified welders.*



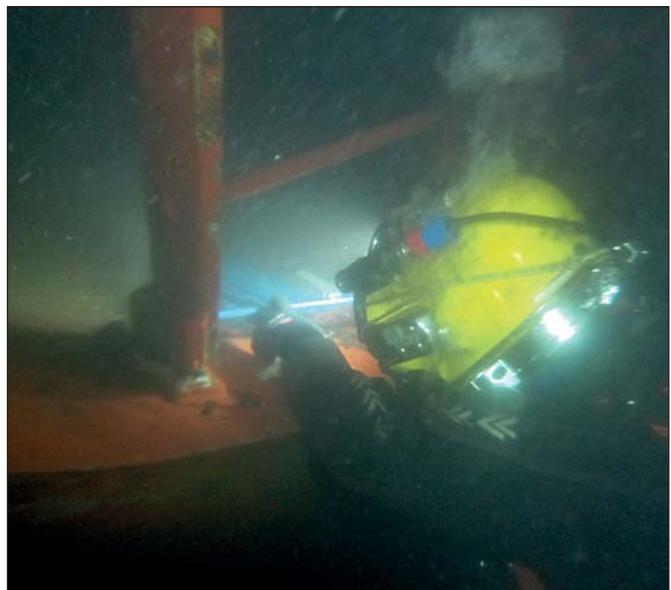
The shelter of the bay and the visibility are ideal to anchor a vessel and have repair or maintenance work carried out.



Hydrex Spain also offers a wide range of afloat repairs.



Overhauled unit in closed off thruster tunnel.



Removing the thruster tunnel grids.

The office is fully geared to carry out repairs at anchorage, in port almost immediately. All operations are certified by the classification societies and carried out by highly qualified diver/technicians all of which have extensive experience.

Some recent case studies of operations performed by our divers in Algeciras.

## Underwater bow thruster operation

Recently our team removed a bow thruster from a 229-meter bulk carrier. Two weeks later the overhauled unit was reinstalled. Both operations were done during stops in Algeciras and had to be carried out within the tight schedule available to the charterer.

All the necessary equipment was mobilized from our Algeciras fast response center. To keep the impact on the vessel's schedule to the absolute minimum the divers performed an inspection of the bow thruster unit and tunnel, followed by some preliminary work while the vessel was berthed at a lay-by.

The vessel could then shift and start cargo operations while our men

performed the rest of the operation without any hindrance to the loading schedule.

Two weeks after we removed the thruster unit our men once again mobilized to the ship. They reinstalled the overhauled unit underwater with the use of the our flexible mobdocks.

By performing the thruster removal and reinstallation underwater, our divers made it possible for the owner to keep the vessel out of drydock.

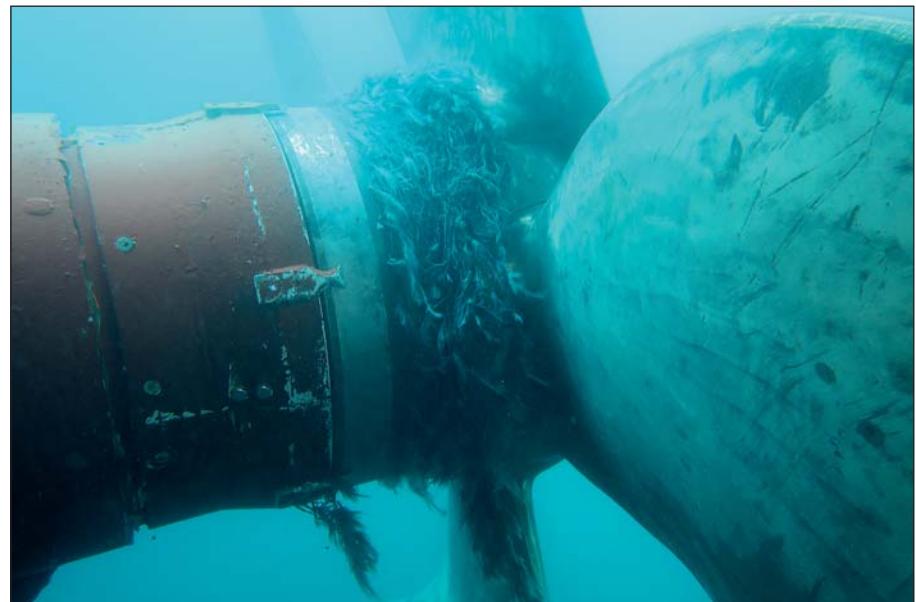
### **Underwater stern tube seal repair**

Earlier this year one of our teams carried out an underwater stern tube seal repair on a tanker berthed in Algeciras. The ship was suffering from an oil leak and no drydock was available close by. Our divers replaced the damaged seals underwater using one of our flexible mobdocks. This saved the owner an expensive and time-consuming trip to a drydock further away.

During the operation our divers removed the three damaged seals and replaced them with new ones. Working together with the OEM allowed us to provide our customer with original spare parts which guarantees the best quality material. A technician of the seal manufacturer was also present during the operation.

Our team was able to carry out the entire repair on-site and underwater with our flexible mobdock technique. Because all the required material is ready to be transported at all times, no time was lost making preparations.

We organized everything from start to finish for the owner. After the



*Fishing net entangled around the propeller.*



*Dry working environment around assembly created with our flexible mobdock.*

seals had been successfully replaced, he could sail his vessel to her next stop free of oil leaks. ■



*Hydrex diver reinstalling the rope guard.*

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# We fix ships



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