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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.

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HYDREX
UNDERWATER TECHNOLOGY

Underwater stern tube seal repairs in Algeciras and Antwerp

Recently, our diver/technician teams were deployed to ships in Belgium and Spain for stern tube seal replacements. The first operation took place in Algeciras on a 225-meter container ship, while the second was carried out in Antwerp on a 295-meter RoRo vessel.

Both ships were experiencing oil leaks, necessitating an immediate on-site repair. Using one of our flexible mobdocks, we successfully completed the operations underwater, eliminating the need for costly and time-consuming drydocking.

As a result of recent technological advancements made by our R&D department and new lightweight equipment, our teams can now complete stern tube seal repairs even faster.

Our repair method enables underwater replacement of all types and



Hydrex truck and equipment next to container vessel in Algeciras.

sizes of shaft seals. If left unchecked, damaged stern tube seals can lead to escalating oil leaks or water ingress. By addressing the issue at an early stage, we help minimize downtime and prevent further complications.

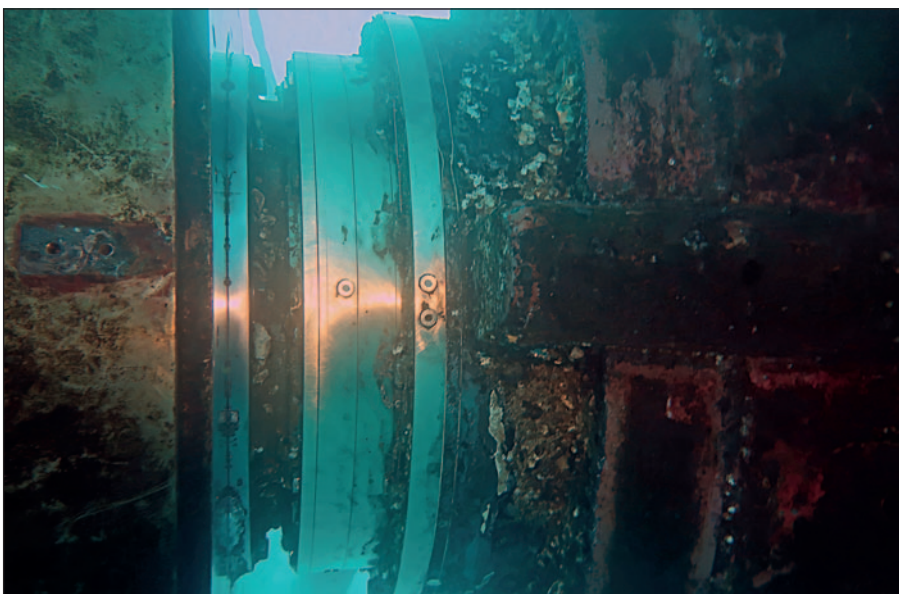
Stern tube seal replacements can present challenges due to the vary-

ing configurations of stern tubes and potential issues with worn or grooved liners. However, our experienced teams are well-equipped to handle these complexities efficiently.

Keeping container ship on schedule

Once the operation in Algeciras was approved, our team quickly made all necessary preparations and mobilized lightweight equipment from our fast-response center.

Upon arrival, the diving team established a monitoring station beside the vessel. The process began with a thorough underwater inspection of the stern tube seal assembly, followed by the removal of the rope guard.



Stern tube assembly prior to seal replacement.





Hydrex diver preparing the assembly for installation of the mobdock.

Next, the divers cleaned the assembly and installed the flexible mobdock, creating a dry underwater workspace that replicated drydock conditions.

The split ring was then removed and brought to the surface for cleaning. After cleaning the entire assembly, the divers replaced the seals and bonded them one by one.

The operation concluded successfully with leakage tests, removal of the flexible mobdock, and reinstallation of the rope guard.

Rapid mobilization, quality repairs

Not much later, a team was dispatched to the RoRo vessel's berthing location near our Antwerp headquarters. Using the same procedure as in Algeciras, the seals were successfully replaced, allowing the vessel to resume operations free of oil leaks.



Rope guard of container vessel after removal.

With Hydrex overseeing the entire process from start to finish, the owner did not have to worry about making any arrangements for the repair.

Working together with the OEM allowed us to supply original spare parts, guaranteeing the highest quality materials for the repair. Additionally, a technician from the seal



One of our diver/technicians working in our flexible mobdock.

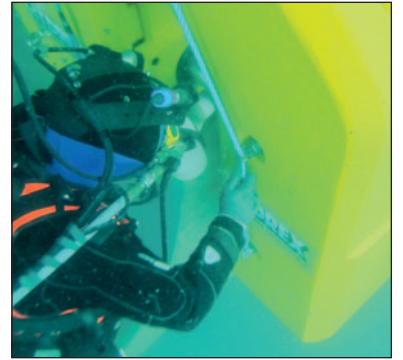


Divers getting ready for underwater operation in Antwerp.



Diver resurfacing after working inside the mobdock.

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.

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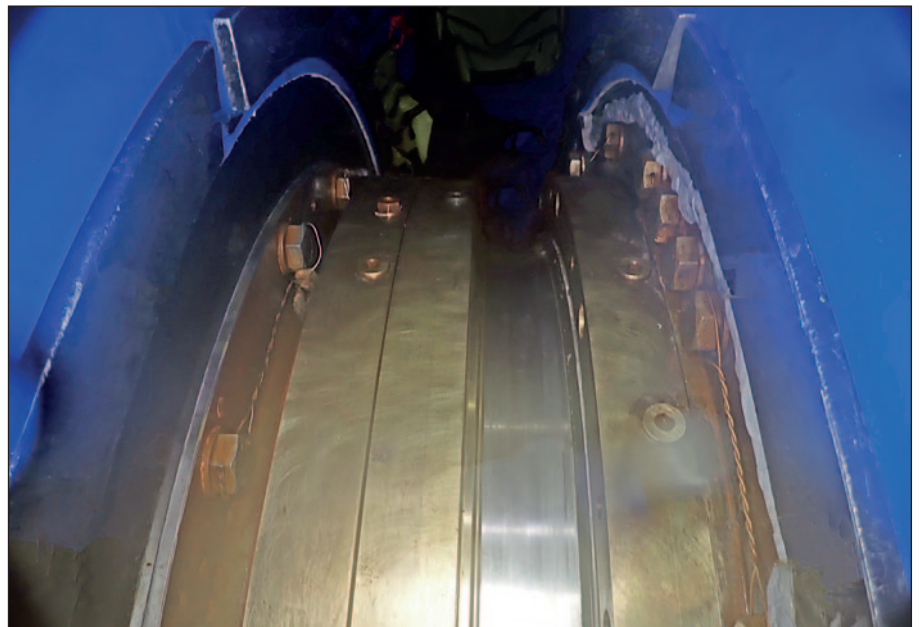
Positioning one of the new seals.

manufacturer was present to oversee the operation.

All our offices are fully equipped with the latest facilities, lightweight equipment, and specialized tools. This ensured our team had everything necessary to complete the job promptly and effectively.

Stay afloat, operational, and profitable

We specialize in underwater maintenance and repairs on all components of a ship's propulsion system and hull. Our operations are class-approved and conducted at lay-by berths or alongside docks without disrupting commercial activities. Every job is executed by skilled diver/technicians using cutting-edge equipment and techniques.



Seal assembly on Roro vessel after the repair.

If you encounter a similar issue, don't hesitate to reach out. We can assess feasibility and begin arranging the repair immediately. ■

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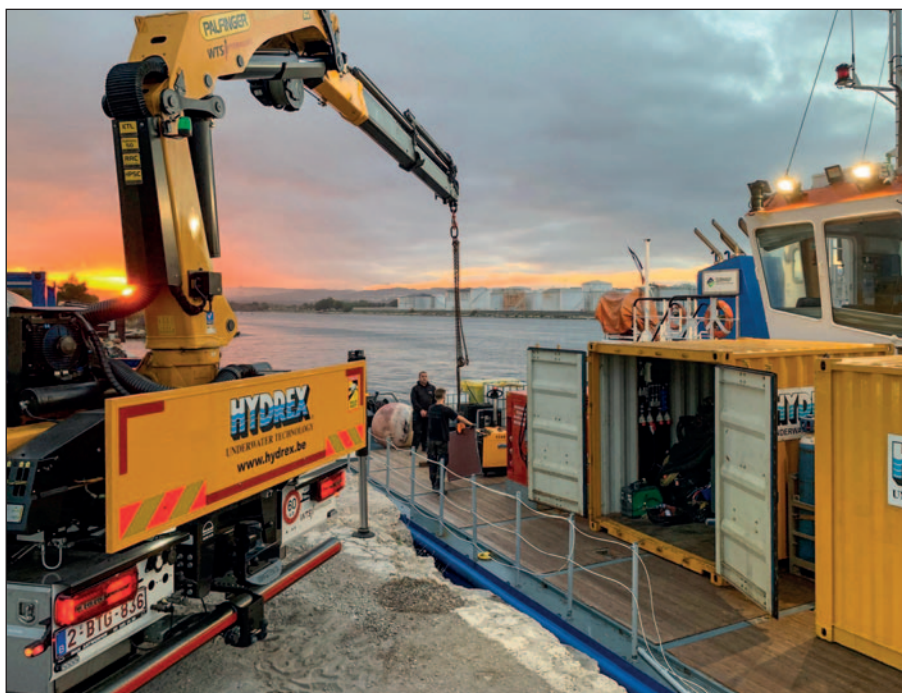
Essential maintenance operations

In our magazine, we frequently highlight large-scale projects our teams undertake worldwide. This might create the impression that we only step in for major challenges. However, that's far from the truth. We bring the same level of professionalism and enthusiasm to every task—whether it's replacing a massive azimuth thruster or performing an underwater propeller cleaning.

Our divers carry out smaller maintenance tasks daily with precision and expertise. These include:

- Anode installation and replacement
- Blanking operations
- Transducer replacements
- Propeller cleanings
- A wide range of inspections

This article showcases some examples of these smaller yet essential operations.



We are ready to assist you 24/7, all around the world.

Inspections

By combining conventional expertise with cutting-edge technology, we provide a unique hull monitoring service. This allows shipowners to maintain complete oversight of their

vessel's hull condition and performance with minimal effort on their part.

Regular underwater inspections require only a small cost but can result in substantial savings. Skilled divers conducting thorough surveys—accompanied by comprehensive reports—help detect issues early, preventing expensive repairs down the line.

With over 50 years of experience in maintenance and repairs, we can swiftly handle any necessary follow-up work, eliminating unnecessary scheduling delays. Our diver/technicians are fully trained to conduct repairs on the spot.

If damage is anticipated, we ensure the necessary equipment is pre-mobilized. If an unexpected issue

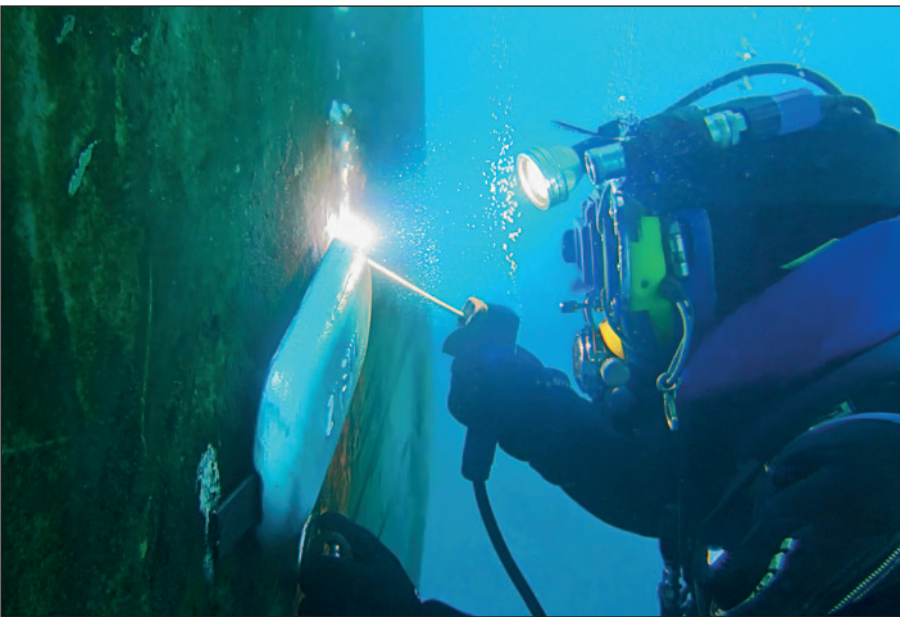


Team leader following underwater operation inside monitoring station.





Any type of anodes can be installed very quickly and on-site.



Hydrex diver welding an anode.



Any type of transducer can be installed or replaced afloat.

arises, we can transport the required gear immediately from our fast-response centers, which maintain a ready stock. A prime example of this efficiency was when a routine inspection revealed a loose rope guard. Our team secured it without delay, avoiding unnecessary downtime for the shipowner, and saving him the cost of a separate mobilization and repair.

Anode installation

When an oceanographic research vessel required 52 sacrificial anodes, we deployed a diving team to Dunkirk to install them underwater.

After receiving the necessary details from the customer, our technical department made the required preparations. The equipment was then transported to the vessel's location from our fast-response center.

In this instance, we also supplied the anodes, sparing the shipowner the hassle of arranging the delivery himself.

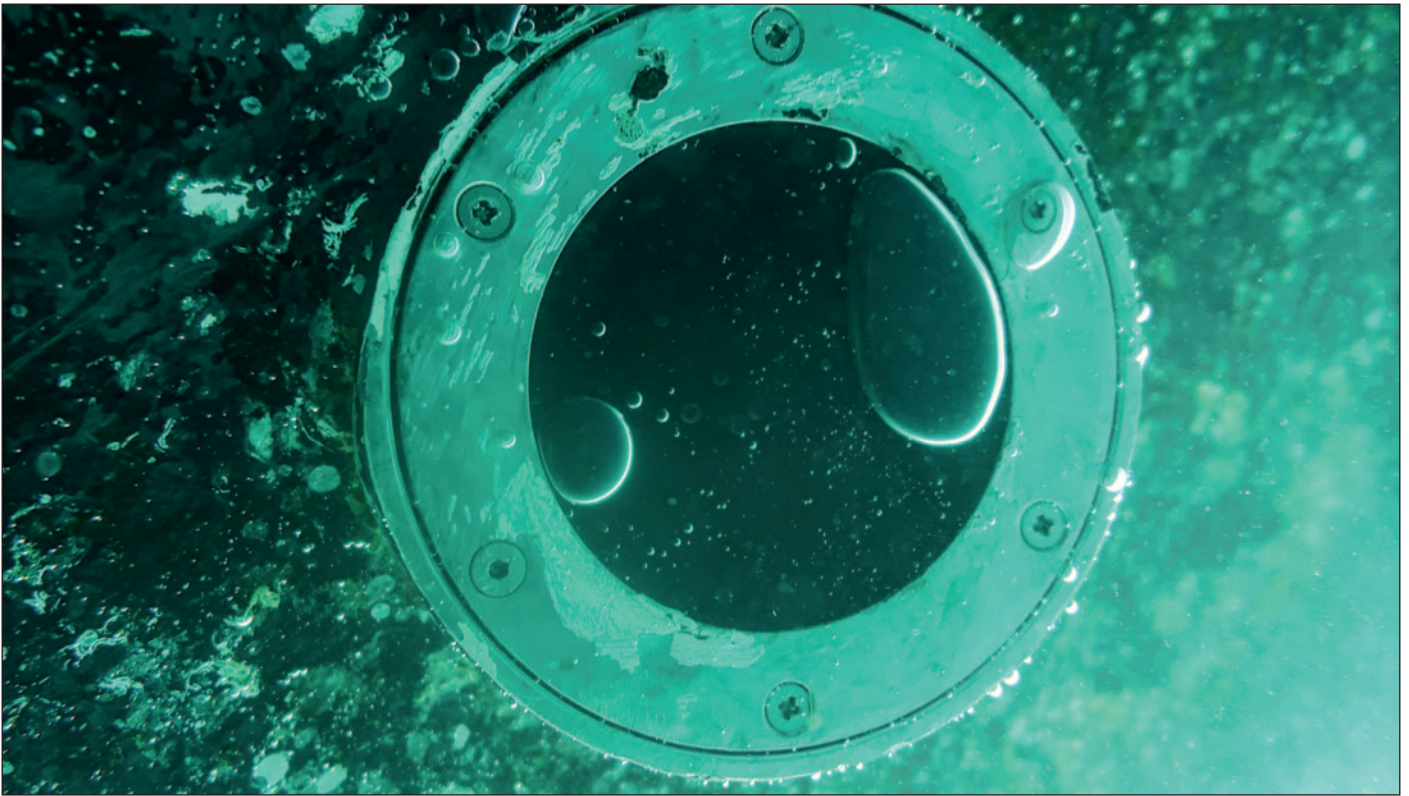
Our welder/divers installed the anodes, ensuring the vessel was fully protected against corrosion.

Blanking operations

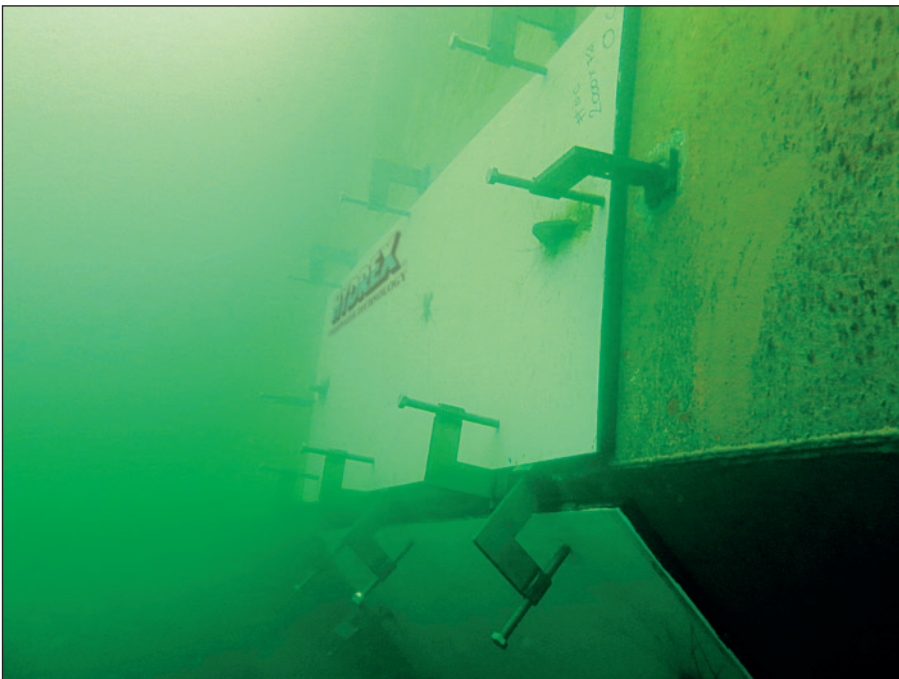
Over four weeks, our diver/welder teams blanked all underwater openings on four offshore vessels in Dunkirk, France.

These included two hydrographic survey vessels, an oceanographic vessel, and an offshore installation vessel—all of which were laid up for an extended period. Ensuring their safety during this time was crucial.

Given the corrosive effects of seawater, additional protective measures were necessary. Our team devised a



New depth sounder after installation by our divers.



Blankings can be used to close off any underwater aperture.

fast and effective solution to seal all underwater openings, including sea chests, overboard valves, and box coolers. Each ship required 30 to 40 blanks, ranging in size from small 10x10 cm plates to larger 4x4 meter panels, all expertly installed by our diver/technicians.

Transducer installation

Our teams can swiftly replace or install any type of transducer without disrupting a ship's schedule. This was the case when two general cargo ships required speed log installations while docked in Antwerp.

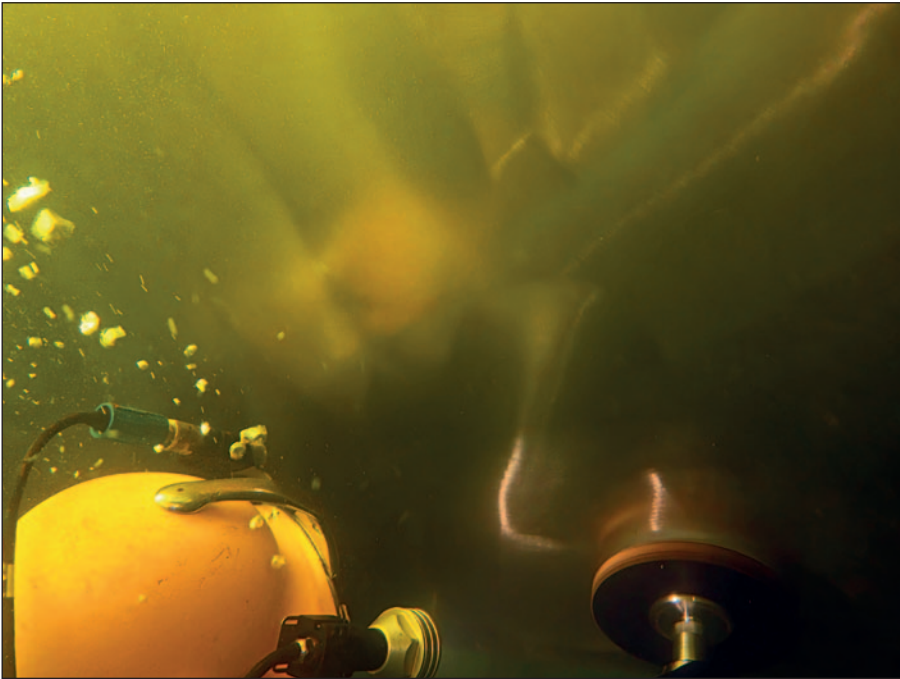
First, our divers conducted an inspection to determine the best installation point. After marking the designated spot, they secured a cofferdam in place, creating a dry space for the operation.

Onboard the ship, team members cut an opening in the hull to precise specifications, installed the speed log housing, and sealed it with an oil ring to prevent water ingress. Simultaneously, the remaining team members ran the electrical wiring.

Once the cofferdam was removed, the system was connected, providing the vessels with fully operational speed logs—installed efficiently without requiring drydock time.

Propeller cleaning

We have pioneered a new approach to propeller cleaning that optimizes efficiency while minimizing damage and environmental impact.



Hydrex diver using our propeller cleaning technology.

Traditionally, propellers accumulate fouling and calcareous buildup, requiring periodic polishing—either underwater or in drydock—using grinding disks. However, this method often removes metal, alters the shape of the blade, and increases friction instead of reducing it. Additionally, it contributes significantly to marine pollution, which many ports now seek to control.

Our method involves frequent, light

cleaning using a gentler tool that prevents calcareous buildup from forming. This approach delivers fuel savings of 5% or more, significantly outweighing the cost of cleaning. Since the propeller is maintained in an ultra-smooth condition, efficiency is maximized without causing damage.

Many of our clients have noted remarkable improvements in fuel efficiency. One chief engineer even

remarked, “You can immediately feel the difference in a ship’s performance after Hydrex has done its thing.”

Easy to combine with other operations

Our teams are highly trained and experienced, enabling them to identify issues beyond the immediate task at hand. If we detect an additional problem, we will immediately communicate this to you so that we can follow up without delay if needed.

Minor maintenance jobs like those detailed here can easily be combined with other maintenance or repair work. This approach helps ship-owners avoid multiple mobilizations, minimizing both costs and scheduling disruptions.

No matter the size of the issue, resolving it quickly and efficiently is our top priority. If you need maintenance services, feel free to contact us—we are available 24/7 and can mobilize very rapidly. ■

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We have dedicated workboats ready for immediate mobilization.

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
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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.

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