

# HYDREX®

## UNDERWATER TECHNOLOGY

Magazine

Number 323



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# Scrubber pipe repairs and lasting protection



**E**xhaust 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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# Editorial



**W**elcome to the last Hydrex magazine of 2023. Rest assured that we will remain ready to assist you 24/7 through the holidays and 2024, so do not hesitate to call us with your underwater repair needs, routine or emergency.

In the beginning of November, we took part in Europort 2023. As always, the four days at Europort were an ideal opportunity to meet old friends and to make new ones. Business relationships were strengthened and formed. We are looking forward to working closely with all these contacts.

Around the same time, we carried out repairs around the world, including several complex operations.

With our diving teams performing jobs and our sales team at Europort, it was a very busy period for us, but this is what we have been doing for 50 years and we love doing it.

If you need more information on any of our underwater services, do not hesitate to contact us. We are always available to answer your questions.

I wish you all the best for the Holiday Season and the coming year.

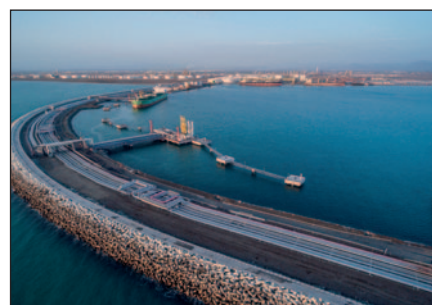
A handwritten signature in black ink, which appears to be 'BVR', followed by a long horizontal line.

Hydrex founder  
Boud Van Rompay  
[bvr@hydrex.be](mailto:bvr@hydrex.be)

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# Hydrex helps megayacht MY *Savannah* stay out of drydock and in business



**R**apid in-water repairs help keep the megayacht MY *Savannah* on charter and out of drydock.

The MY *Savannah* is an 84m luxury megayacht built in 2015 by Fead-ship, available for charter with a crew of 24 for up to twelve guests. She has the distinction of being the first hybrid superyacht and has gained numerous awards.

## Depth sounder replacement

In May 2022 while waiting for the next charter to begin, a situation arose which needed immediate handling. The *Savannah's*, captain, Chris Durham explains, "We had a situation whereby in the space of seven days we encountered quite severe issues with both depth sounders – for redundancy we have one forward and one aft. The aft one stopped transmitting completely and the forward one became very intermittent and didn't give us a solid echo. It was quite a tricky situation," adds Chris. "You're not allowed to



sail without depth readings and it's certainly not something you want to be without if you're navigating anywhere."

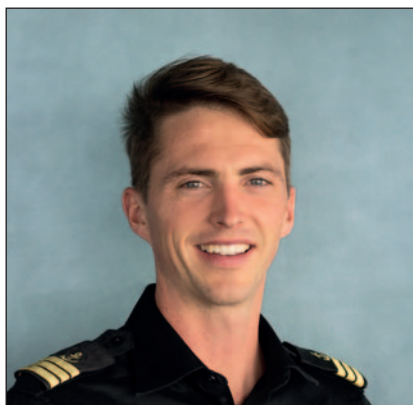
The *Savannah's* engineers found that the transducers could not be replaced from inside the yacht.

***"Time was incredibly important to us..."***

"When they told me that we couldn't repair the depth sounders without coming out of the water, I started to







Christopher Durham, Captain of the MY Savannah.

look a little further into why, and what we could do to fix that,” says Chris. He reached out to the technical advisor at their management company, Y.CO Luxury Yacht Management. “They gave us contact information for two companies who might help, one of which was Hydrex,” Chris recalls.

“When I went to the Hydrex website and saw that changing transducers was a specific service offered, I got on the phone right away. I had a really good conversation with a very knowledgeable young man at Hydrex.”

“Time was incredibly important to us as we didn’t know the exact schedule of the upcoming charter, so we were very impressed with what we were able to accomplish and organize over a weekend,” Chris continues. “Having initially reached out on Saturday, by Sunday we had arranged for a team to fly out on Tuesday, complete the job on Wednesday and fly back on Thursday. It was extremely swift correspondence late into the night on the weekend, and very helpful – solutions not problems.”

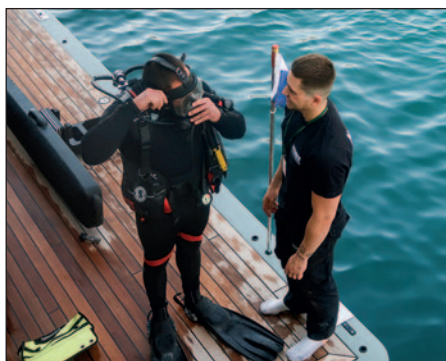
The *Savannah* was in Göcek, Turkey at the time. Chris was not familiar with the local yards and his alternative would have been to go to drydock in Genoa or Barcelona. “A rough estimate of the cost of going to drydock was an absolute minimum of 25-30,000 euro just for us to come out of the water to do the repair. As soon as it reached two, three, four or five days it would have been a lot more. And that was without taking into account the cost of getting there and back.”

The job itself went exactly according to plan. Chris says, “It was a professional experience from the get-go: from the initial correspondence to stepping on board to the post report, it was a really seamless, smooth operation. The Hydrex team arrived on time or ahead of time, a well-presented, fit, strong team,” Chris recalls. “We went over the plan and which depth sounder we were going to tackle first and we set to work. The actual work went very well. The Chief Engineer was very happy with how everything developed and progressed. We were able to successfully switch out the forward and the aft transducers and it was done safely. There was certainly a high awareness and focus on safety which is very much how we like to operate, with signage and risk assessments and procedures from the vessel side and from Hydrex. I was very happy to see a very thorough mindset for safety there.”

The total cost of the job was less than half of what it would have been if the *Savannah* had had to go to drydock.

## Anode replacement

Following the success of the transducer replacements, the Chief Engineer, Andrew Gerrard, decided a few months later, when the *Savannah* was in Antibes, to contact Hydrex and use the same approach for another problem that had been nagging and which had looked like it could only be remedied in drydock. Andy explains, “Our main sea strainers were becoming fouled very quickly and as a result the frequency of manual cleaning required had greatly increased. We were already experiencing an increase in tempera-



Depth sounder replacement by Hydrex divers.







*Andrew Gerrard, Chief Engineer of the MY Savannah.*

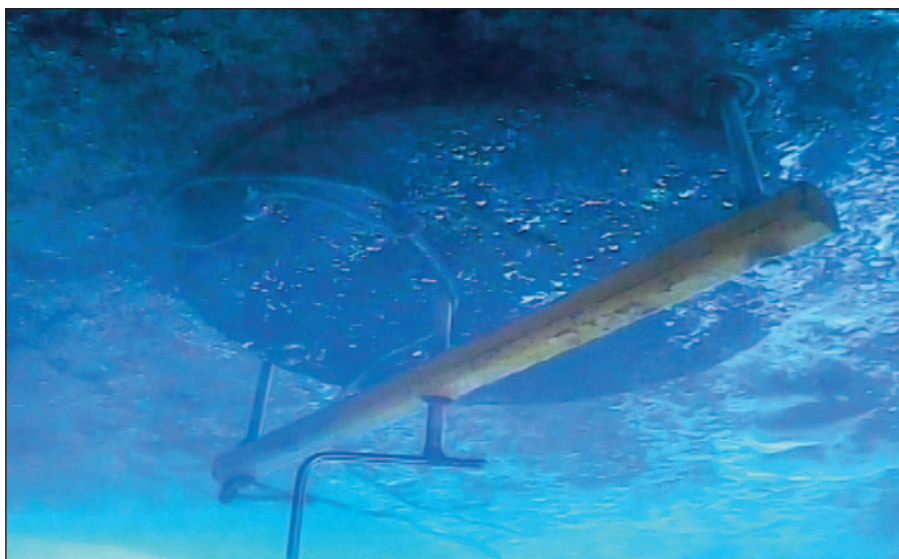


tures in our LT and HT cooling systems and the coolers required manual cleaning on a monthly rather than 6-monthly basis. This would have only increased with the amount of time ‘unprotected,’ eventually to a point where we couldn’t have kept up with the manual cleaning and it would have stopped us from sailing.”

“We were pleased with the results of the transducer job, so decided to do the anode replacement on the same basis,” says Andy. “Our contact at Hydrex was very thorough and quick to reply. I felt as though we were in safe hands from the get-go. The team mobilized very quickly which worked very well with our busy schedule.”

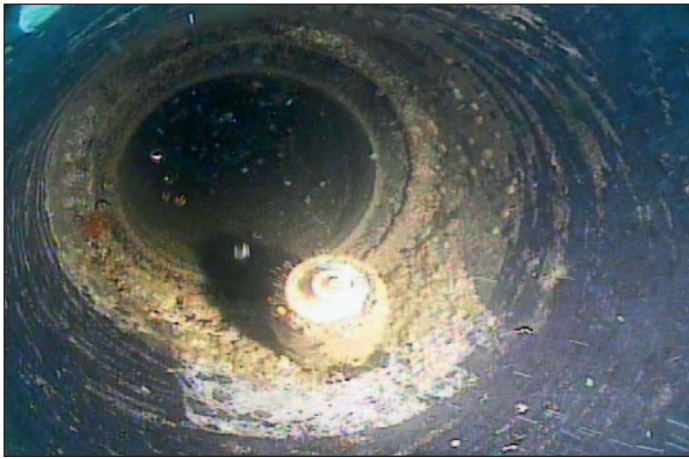
“We aren’t often in the same place for very long so it was important to be able to undertake the job without a big time window. They really fitted

around us and our schedule and were very willing to help out with all aspects of the anode replacement. The job was completed to our full



*Blanking the intake for the Marine Growth Prevention System (MGPS).*





*The old anode is removed (left) and replaced with a new one (right).*

satisfaction. The anodes are now fully functional and leak-free and it has prevented us from having to dry-dock the vessel outside our normal schedule. We are very pleased with the resolution.”

### **Summing up**

The *Savannah*’s captain concluded, “The biggest thing with these jobs, even though they were not overly complex for your team in comparison to some of the work they do, was peace of mind for us. The work has

to be done correctly. Having that expertise and competence on board with the Hydrex team who can fix something if it doesn’t quite go to plan or any issues come up with changing an anode or a transducer in the water was probably the biggest thing for us.”

He reiterates his first impression of Hydrex: “You usually have to wait for people to reply and so on. Being able to organize the job so quickly over a weekend, I was like, ‘Wow, OK! This company is obviously

well organized, well managed, well run, eager for work.’ Brilliant!”

This was business as usual for Hydrex and a perfect example of providing fast underwater and afloat service to vessels in need, so as to keep them in service and out of dry-dock. Whether it’s a 350 meter container ship or cruise ship, or an 84 meter super yacht, the same expertise and level of service is available to provide a rapid, high quality solution. ■



# New partnership between GAC Oman and Hydrex NV

**G**ulf Agency Company (GAC) Oman and Hydrex NV have signed an agreement to work together to add high quality underwater maintenance and repair to GAC Oman's large portfolio of services offered to the shipping industry in the port of Sohar and other key ports in Oman.



*Dr. Ashan Silva, Business Manager, Sohar GAC Oman.*



*Sohar Port and Freezone, in the Sultanate of Oman is one of the world's fastest growing port and freezone developments, at the center of global trade routes between Europe and Asia.*

We interviewed Dr. Ashan Silva, Business Manager, Sohar, GAC Oman following the signing of the agreement.

**H:** Please give us an overview of GAC Oman

**Dr. AS:** Established in 1972, GAC Oman is a leading provider of ship-

ping and logistics services in the Sultanate of Oman covering the country's key ports, including Muscat, Salalah, Sohar, Sur, Khasab, and Duqm.

As part of the global GAC Group, our diverse service portfolio serves a wide range of sectors including energy, events and dry bulk. We support different cargo types and vessels with ship agency, husbandry, protective agency, bunker fuel supplies, launch and dry-docking services.

Our comprehensive logistics services encompass freight services, project logistics, land transportation, international moving and contract logistics. Our fully equipped warehousing facility next to our head office in Al Khuwair, Muscat, supports these logistics operations.

GAC Oman is dedicated to a sustainable approach guided by the GAC Group's Roadmap to Sustain-



*Sohar Port and Freezone.*





*Sohar Port in the Sultanate of Oman.*

ability. This commitment focuses on "adapting, innovating, and reducing" the negative impact of our activities and encouraging stakeholders to promote a sustainable future. Our goals align with the UN Sustainable Development Goals (SDGs) and span economic, environmental and social aspects.

**H:** How will the partnership of GAC Oman and Hydrex benefit shipowners and operators who use Sohar and the key ports in Oman?

**Dr. AS:** For those seeking uncompromising quality in their port call operations in Oman, GAC stands as the premier choice, bringing value to every port call with seamless and efficient operations.

When it comes to vital underwater repairs essential for a safe voyage, Hydrex is the name of trust. With Hydrex's expertise in underwater repair services, you can rely on them to safeguard your vessel's journey.

Together, GAC Oman and Hydrex constitute a powerful duo, providing comprehensive quality services in a

single, accessible location. It's your one-stop destination for top-notch port call and underwater repair solutions.

**H:** Why did GAC Oman choose to work with Hydrex specifically?

**Dr. AS:** At GAC, our dedication to quality service extends to the partnerships we form with premier service providers. We nurture enduring relationships with our principals, founded on the consistent delivery of exceptional services.

Our confidence in Hydrex is based on the lasting quality demonstrated in the many successful operations they have conducted in the waters of Sohar. They have consistently provided exceptional services to vessel owners.

That impressive track record drove us to work with Hydrex to extend this same standard of excellence to our principals.

### **About Dr. Ashan Silva**

Dr. Ashan Bimal Silva boasts over

30 years of extensive experience in the international shipping industry. His journey commenced as a senior officer in the merchant navy, after which he came ashore to work as a navigation lecturer for nautical campuses and in managerial roles in the shipping industry.

Today, Dr. Ashan is Business Manager for GAC Oman's Sohar Office. He heads an experienced team and together they spearhead the provision of top-tier shipping, logistics, and marine services in the port, upholding the highest standards of quality and excellence in all operations. His wealth of experience and expertise ensures customers receive unparalleled services, underscoring GAC's commitment to their success.

At Hydrex we are looking forward to a long and productive partnership with GAC Oman which will result in consistently excellent and efficient service delivered to ship owners and ship managers requiring assistance at any of the key ports of Oman. ■



# Underwater re

## Seal repairs

We have developed a reliable technology that enables the underwater replacement of all types and sizes of shaft seals.



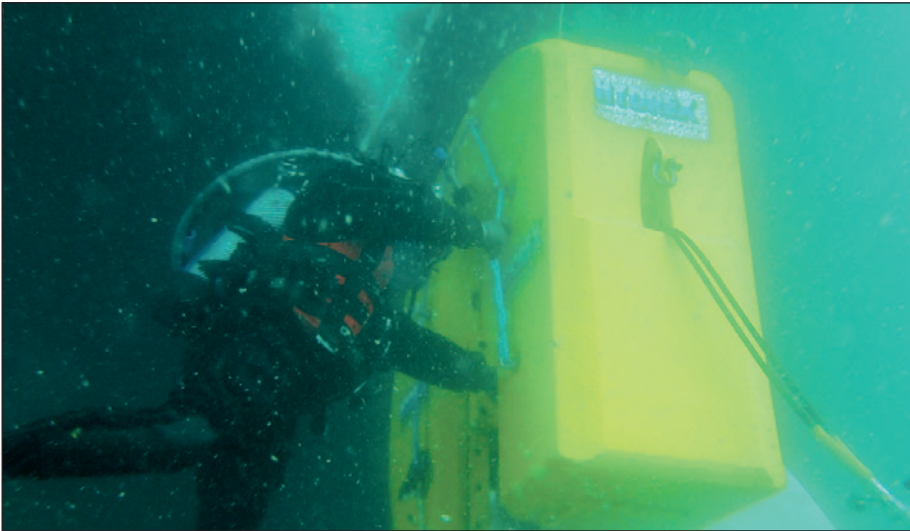
## Thruster repairs

We can assist shipowners with almost any



## Propeller repairs

When damage to propellers occurs due to impact with ice and other debris we can fix these, even if the damage is extensive.



## Rudder repairs

We can perform permanent repairs on any damage caused by impact with ice and other debris at anchorage and cargo operations continuing.



# Underwater maintenance

## Inspections

We offer a full range of hull monitoring services including IWS and class inspections. This gives owners total control of their ship's hull condition.

## Propeller buffing

We developed an efficient technology to enhance propeller blade surfaces underwater and achieve surface conditions never seen before.

## Anode installation

We can install both ICCP and sacrificial anodes. If needed we can supply the anodes.



# Repair solutions

any problem encountered with thrusters.



any type of rudder while the vessel remains  
ue.



## Transducer installation

Our teams can very quickly replace or install speedlogs and echosounders without any hindrance to a ship's schedule.

## Hull repairs

Our on-site hull repair services include the renewal of both small and large areas of damaged hull plating.



## Scrubber repairs

We can assist shipowners at moment's notice when a scrubber pipe corrodes and needs replacing.



## Blanking

We can blank overboard valves, inlets, seachests or any other underwater opening to allow for onboard repairs. This is done very quickly and on-site.

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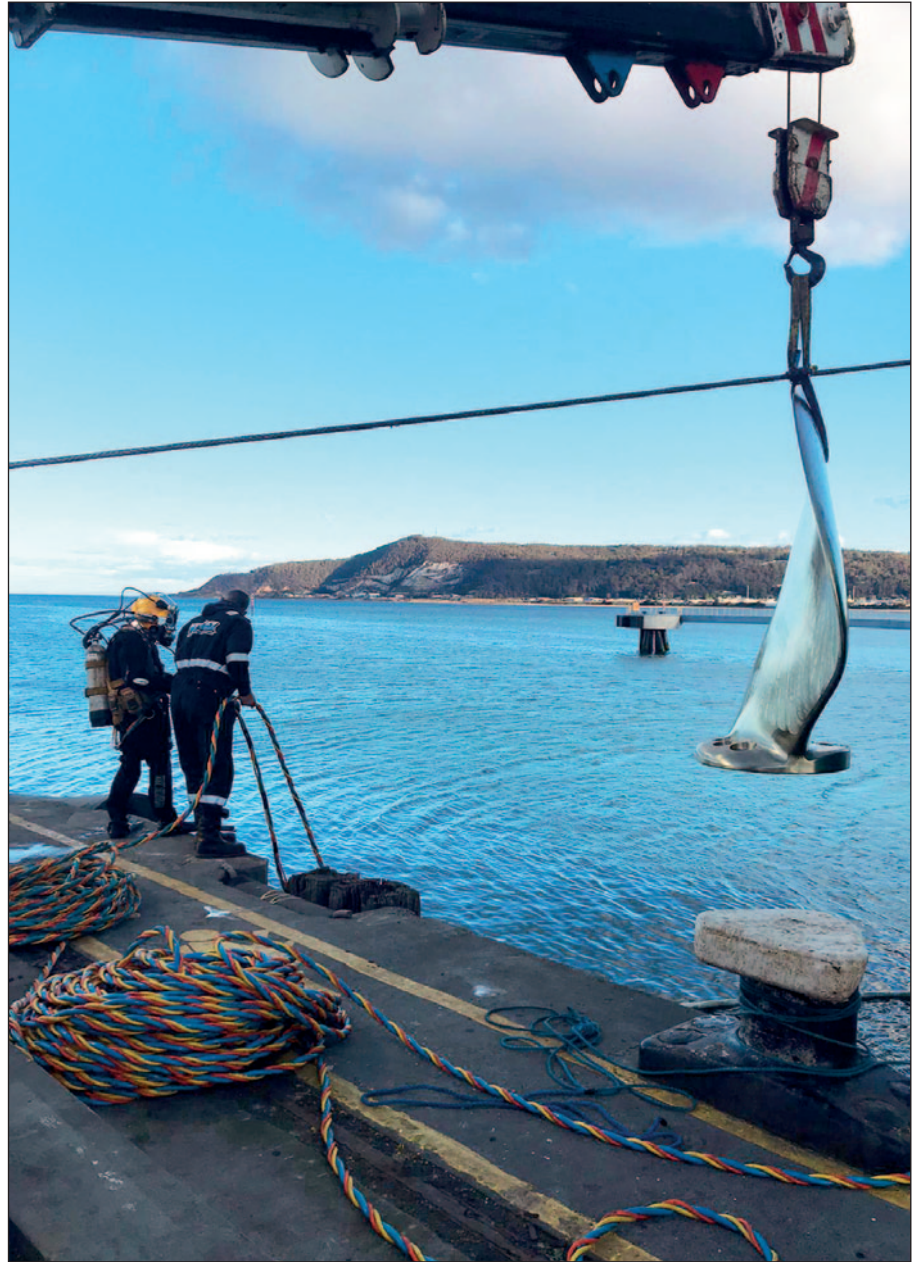
# Propeller repairs restore efficiency and save money

**W**hen damage to propellers occurs due to impact with ice and other debris, we will help you, even if the damage is quite extensive.

A ship with bent or cracked propeller blades might experience severe vibrations while sailing. The classification society might demand a repair before the vessel is allowed to sail on. By straightening the blades or cropping them, we can restore the propeller's balance, resulting in a green light from the class.

A propeller modification can easily be combined with any other maintenance or repair operation that needs to be carried out on the vessel. Thanks to the flexibility of our teams this allows a vessel to keep its schedule.

Prior to a propeller repair a detailed underwater inspection is carried out by our divers. They are certified to make a full assessment of the condition of the propeller. The exact dimensions and position of the damage can then be communicated to the technical department supervising the operation. This is essential because the calculations need to be perfectly accurate to achieve an ideal result with the repair. Hydrex team members have experience in dealing with many different situations and circumstances. They are trained to think with the staff in the technical department. As diver/technician experts, they can assist in working out the best solution and have the skill and experience needed



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

to implement the solutions that have been worked out.

## **Propeller blade straightening and cropping**

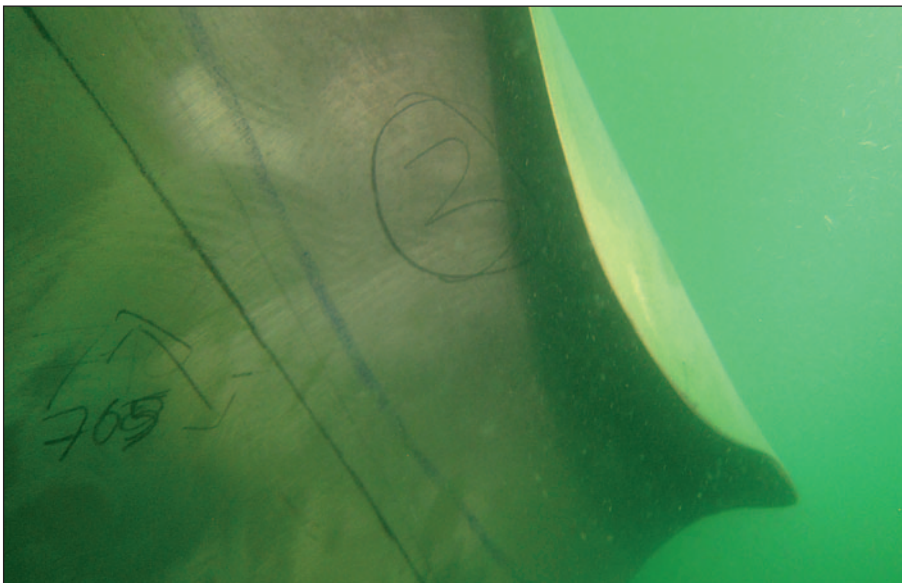
By taking advantage of the in-house developed cold straightening technique, damaged blades can be straightened underwater, allowing the ship

to return to commercial operations without the need to drydock. Optimum efficiency of the propellers can be restored by bringing the blades back close to their original form. The cold straightening machine has been in use for quite some time now but our research department has been looking into ways to improve the technique even further.





*One of our divers guiding a new propeller blade during installation.*



*Severely bent propeller blades like this can be cropped to restore efficiency.*



*We have developed our propeller cold straightening machine in-house.*

## **Permanent in-water rudder repairs now possible without drydocking**



**H**ydrex 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.

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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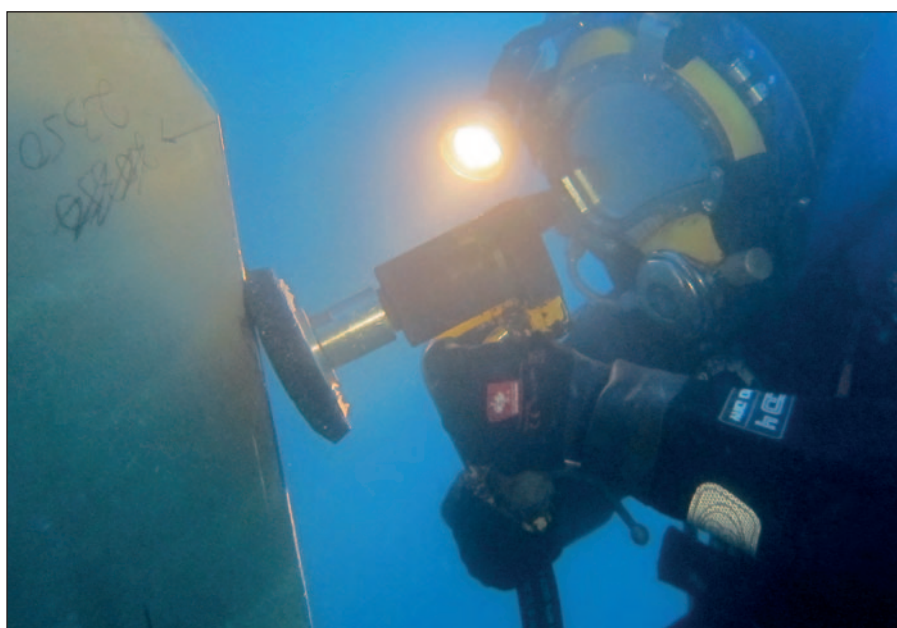
*Both propeller blade straightening and cropping can be done underwater or on a trimmed vessel.*

A new model of the straightening machine was recently put into service. It is compatible with the existing model and is used to restore more severely bent propeller blades.

If straightening is not an option, the affected area on the blade will be cropped. This is done to achieve the greatest possible efficiency. This kind of repair is carried out with our propeller blade cutting equipment. First a detailed underwater inspection is performed by a Hydrex diver/

technician team to obtain the exact extent of the damage which is then used for a detailed calculation of the ideal cutting line. This allows the customer to know in advance what the result of the operation will be.

We also have the tools to carry out detailed crack inspections on propeller blades. An informed decision can then be made concerning any required follow-up action. Catching problems early can save much time and money.



*One of our divers grinding the edge of a cropped blade.*

## Restoring optimum propeller performance

Aside from our repair services we can also help customers when they have the need for preventative or other special custom projects. For example, preventative modifications were made in Bremerhaven to the blades of three ice-going ships. When several of this customer's vessels suffered damage and the propellers needed cropping after the winter, the owner wanted to find a way to prevent this from occurring to his other container vessels. When the next winter promised to be equally harsh, he wanted to give the blades extra strength and make them less susceptible to damage from ice or other debris. This was done by modifying the blades to a very specific design that made them less prone to damage while keeping the performance of the propeller as close to optimum as possible. The operation was performed in close communication with the manufacturer of the propellers.

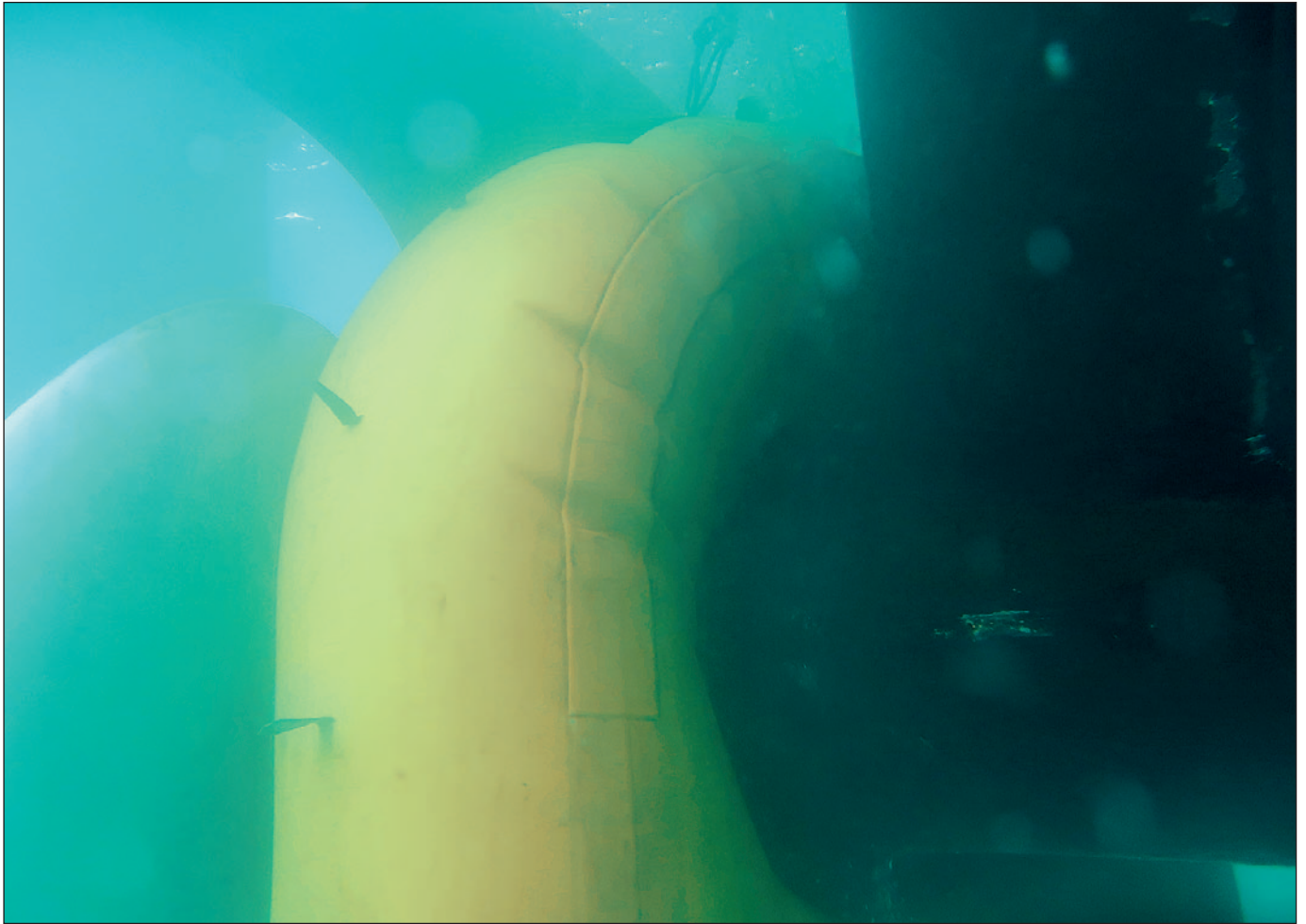
By performing these repair and maintenance operations underwater and on-site Hydrex saves ship owners precious time and money. It allows ships to return to commercial operations without the need for dry-docking. ■

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You can  
contact us at:  
**hydrex@hydrex.be**  
or at  
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# Stern tube seal repairs



**U**sing our flexible modock 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.

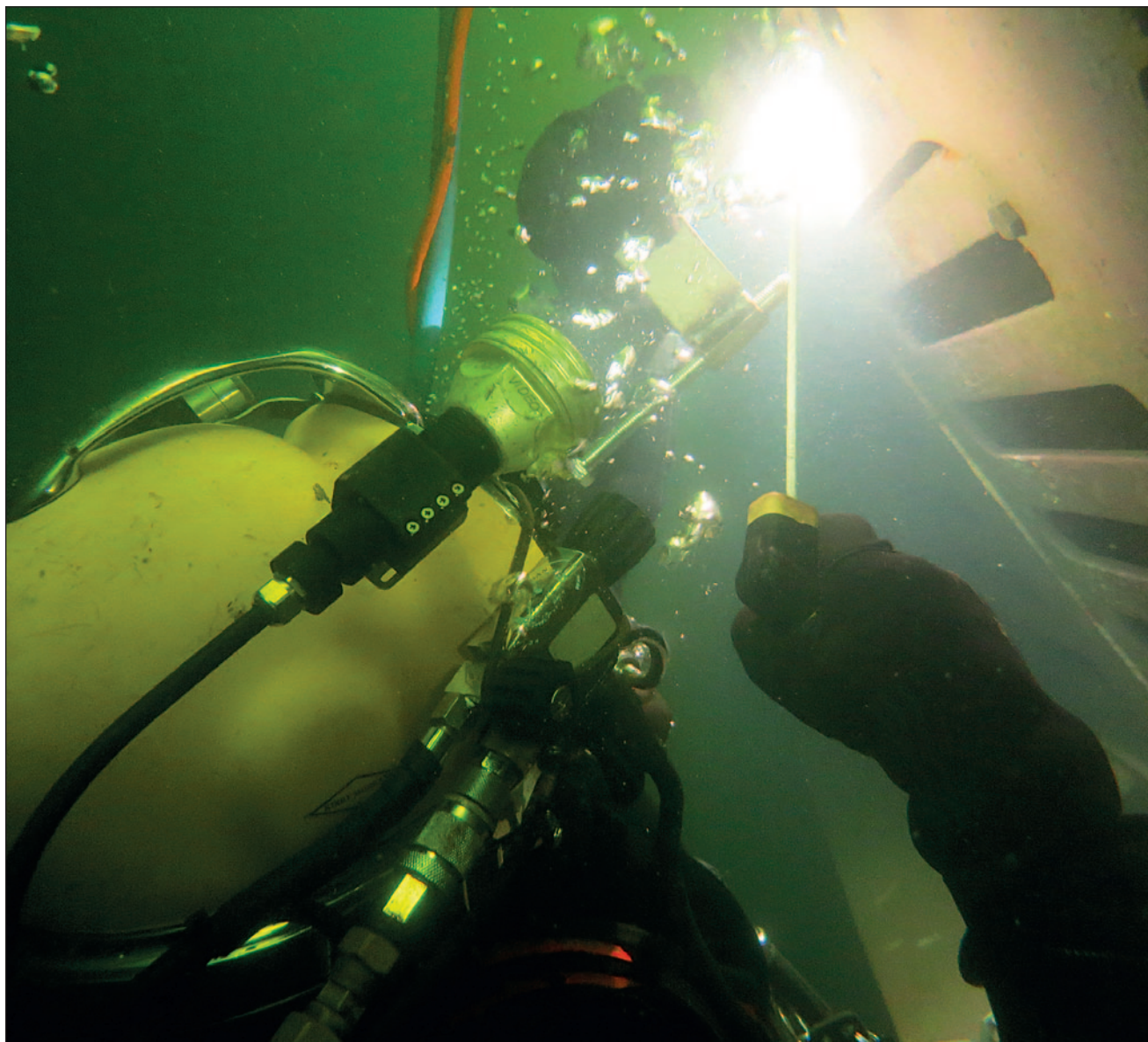
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