Unprecedented repair in Dunkirk in 1991/1992

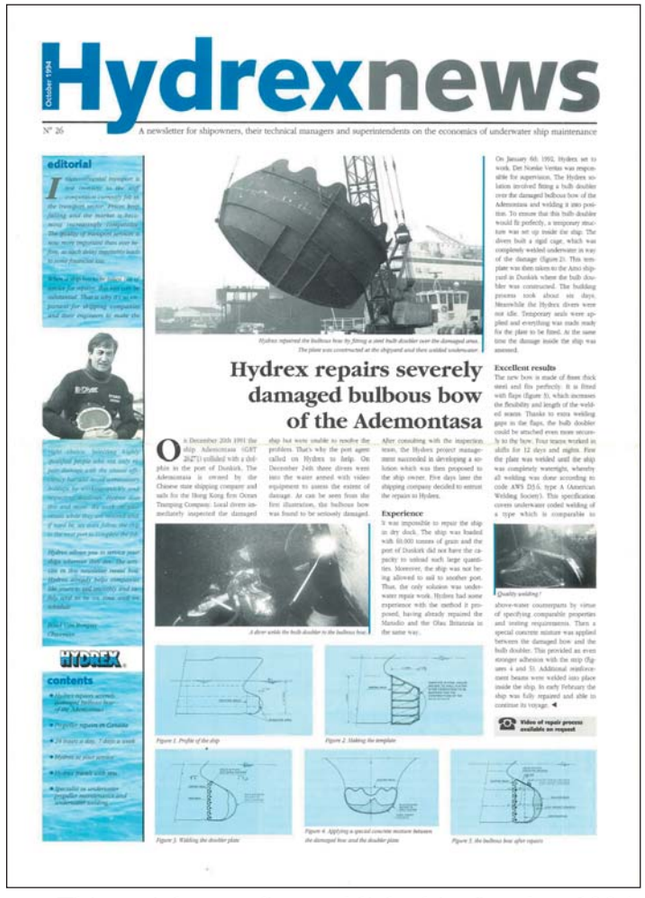
Since Hydrex was founded in 1974, we have always found ways to carry out on-site repairs not deemed possible. Sometimes by developing a new technology which then becomes the standard, sometimes by finding tailor-made solutions for very specific problems.

For our 45th anniversary we will be traveling back in time to some of the operations that amazed the customer, the class and all parties involved. This month we will be looking back at a very complex repair performed by our diver/technicians in Dunkirk in December 1991-February 1992.

After sustaining extensive damage to her bulbous bow, a large vessel needed temporary repairs to get back to her home base. The ship was about to sail for China when she ran into a breakwater in the port of Dunkirk and severely damaged her bulbous bow.

We took on the job of designing and constructing a shell to cover the damaged bulbous bow and then make it a watertight fit so the vessel could sail from Europe to China. The temporary bulbous bow was around 100 square meters.

This operation was the biggest underwater welding operation of its kind ever done at that time. ■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editorial

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Hydrex repairs severely damaged bulbous bow of the Ademontasa

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Hydrex repairs severely damaged bulbous bow of the *Ademontasa*

On December 20th, 1991 the bulker *Ademontasa* (GRT 2671) collided with a breakwater in the port of Dunkirk. At that time the *Ademontasa* was owned by the Chinese state shipping company and sailed for Hong Kong. Local divers immediately inspected the damaged ship but were unable to resolve the problem. That's why the port agent called on Hydrex to help.

On December 24th, three divers went into the water armed with video equipment to assess the extent of damage. The bulbous bow was found to be seriously damaged.

After consulting with the inspection team, our project management succeeded in developing a solution which was then proposed to the shipowner. Five days later the shipping company decided to entrust us with the repairs.

Hydrex took on the job of designing and constructing a shell to cover the damaged bulbous bow.

Four teams worked in shifts for 12 days and nights.

Hydrex took on the job of designing and constructing a shell to cover the damaged bulbous bow.

Experience

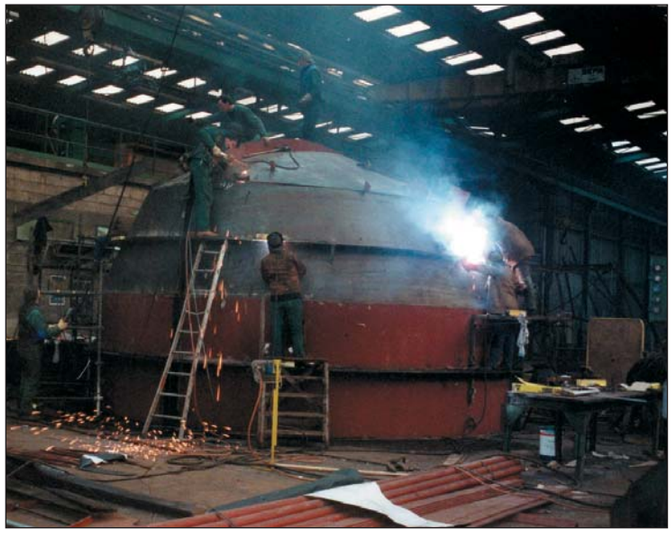
It was impossible to repair the ship in drydock. The ship was loaded with 60.000 tonnes of grain and the port of Dunkirk did not have the capacity to unload such large quantities. Moreover, it was not allowed to sail to another port. The only solution was underwater repair work. Hydrex had some experience with the method it proposed, having already repaired the *Marudio* and the *Olau Britannia* in a similar way.

On January 6th, 1992, our divers set to work. Det Norske Veritas was responsible for the supervision.

Our solution involved fitting a bulb doubler over the damaged bulbous bow of the *Ademontasa* and welding it into position. To ensure that this bulb doubler would fit perfectly, a temporary structure was set up inside the ship.

The divers built a rigid cage underwater which was welded over the damage. This template was then taken to the Arno shipyard in Dunkirk where the doubler was constructed. The building process took about six days.

Meanwhile the Hydrex divers were not idle. Temporary seals were applied and everything was made ready for the plate to be fitted. At the same



Constructing the replacement bulbous bow.

Additional reinforcement beams were welded into place.

Putting it in place.

time the damage inside the ship was assessed.

Excellent results

The new bow was made of 8mm thick steel and fitted with flaps to increase the flexibility and length of the welded seams. Thanks to the extra welding gaps in the flaps, the bulb doubler could be attached even more securely to the bow.

Four teams worked in shifts for 12 days and nights. First the plate was welded until the ship was completely watertight. Then a special concrete mixture was applied between the damaged bow and the bulb doubler. Finally, additional reinforcement beams were welded into place inside the ship.

In early February the ship was fully repaired and able to continue her voyage. ■