

## Service with passion.



**ON THE LINE:** Both repair and new building competences

**SPOTLIGHT:** Germany gears up for SMM

**MECHANICAL MATTERS:** World-first containership conversion



## FAST PROPELLER REPAIR

Recently a team of Hydrex diver/technicians performed a propeller blade cropping on a 190m container bulker berthed in Hamburg. Two parts of the tip of one of the four propeller blades were damaged and needed to be cropped to restore the propeller's efficiency.

Having developed different procedures for different kinds of damage, Hydrex teams are equipped and trained to make the best out of a bent or broken propeller. Ideally, the in-house developed cold straightening technique is used. This procedure enables Hydrex technicians to straighten damaged blades in-water, allowing commercial operations to continue without the need to drydock.

In the following example, cropping was the only option as the type of damage to the propeller blade did not allow cold straightening. This kind of repair is carried out with the propeller blade cutting equipment developed by the Hydrex research department. In cases like this, where there is an even number of blades, an identical piece will be cropped from the opposite blade to restore the hydrodynamic balance of the propeller. By doing so, the best possible efficiency is obtained.

One of the four blades of the bulker had lost two parts of its tip. An on-site solution was needed to restore the propeller's balance and efficiency. A team was therefore mobilised from the company's headquarters in Antwerp to the ship's location in Germany.

After the equipment arrived at the vessel's location, the team started the operation with a detailed survey of the affected propeller blade. The team then used the information acquired during the inspection to calculate and determine the correct measurements needed to modify the trailing edges of the propeller blade. Next the divers cropped the blade and ground its edge to give it the correct radius. The opposing blade was modified using the exact same cutting line, to give

the propeller back its balance.

When the cropping was complete, the Hydrex technicians buffed the blades to make sure that any remaining loss of efficiency would be minimal.

In this case, the repair took less than a day, avoided a drydocking, and prevented any unwelcome delay to the vessel's schedule.

## LARGE DREDGER REPAIR

The Dredging International vessel *Ambiorix* called into Colombo for layup and drydock repairs, including Special Survey, during May to June 2016. At 7,973 grt, the cutter suction dredger is one of the biggest in the DEME fleet.

Colombo has been successfully providing repair facilities to DEME and many other international dredger owners over the past three decades. The business had been secured as a result of the Colombo Dockyard's proven track record as a reliable shipyard which delivers quality repairs with a focus on timely completion. DEME carried out a yard capacity / safety audit prior to arrival of the vessel in Colombo. During this call the vessel was accommodated at South Repair pier; initially for afloat repairs, and then accommodated it in Drydock No. 04 (125,000 DWT), which is ideally suited to handle the dredger.

The major repair scope during this call consisted of cutter shield repairs, which required precession welding to be carried out on the cutter shield base plate using wear resistant welding electrodes. Cutter ladder internal blasting and painting was also carried out, and the cutter ladder internal brackets were renewed and cracks were repaired. The side wire tumbling sheave was overhauled and reconditioned, requiring precision machining. Routine drydock related repairs were also attended to during the call.

The strategic geographical location of Colombo Dockyard, close to major dredging hot spots, makes the yard an ideal location for dredgers repairs in the region. Colombo's professional approach



From top to bottom:  
*The Hydrex team and equipment arriving on site; Cutting the opposite blade of the damaged propeller to keep the balance; The cropped and buffed blade*

and speedy service was appreciated by the owners/managers, as the repair project was re-delivered on schedule, meeting owner's requirements. The project team was headed by Ship Manager Ajith Kariapperuma, who was well supported by all the production departments.

The owner's interests were looked after by DEME team headed by Stijn Vanderbeken, Technical Superintendent - Docking Team Leader, Gert Kleinlugtenbelt, Superintendent, Ate van der Veen, Tech Superintendent, Adrien Cole,