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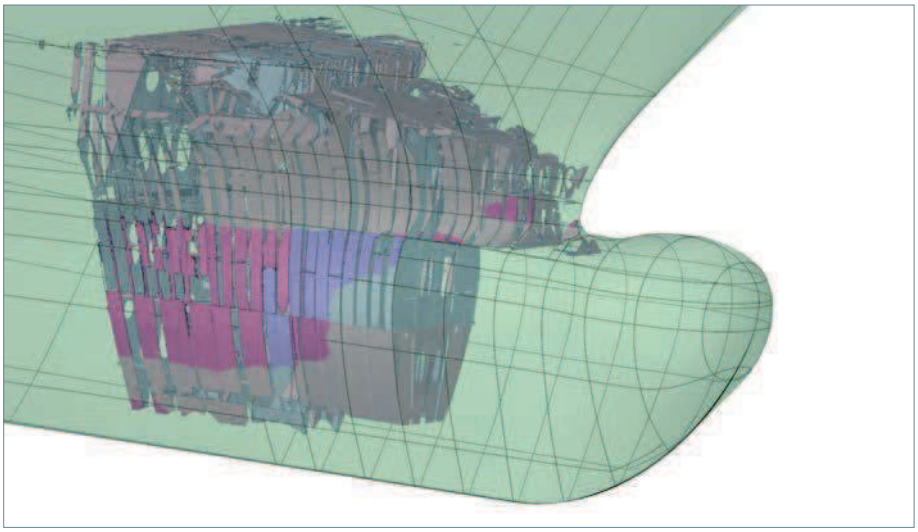
3D technology in Danish ship design

SCANNER | Naval architects at Copenhagen-based OSK-ShipTech AS are now offering 3D laser scanning to minimise risk and assist in the precision design process for vessel modifications and retrofits. The company's recently acquired scanner, which has a range of 150m and an accuracy of 1mm, will enable new opportunities in fast ship conversions, OSK-ShipTech says, with a minimum of downtime and a reduced margin of error.

Anders Ørgård, the company's chief commercial officer, explained that owners are constantly looking at ways to reduce risk, time and error. The new scanner, he said, will make way for a new service whereby the inside of a ship's hull, for example, can be scanned while the vessel is still in operation.



3D-scanning technology may also be combined with virtual reality Illustration: OSK-ShipTech

"We've already used the scanner in connection with bulb optimisation projects on RoPax vessels," Ørgård revealed. "While in service, we scanned the inside of the hull and several sections of the vessel's front and then provided the yard with the best possible and most accurate production drawings, drastically reducing the yard's schedule and the risk of errors. Next up is a 3D-scan of a vessel in China for a Danish shipowner."

The firm is also pairing the 3D-scanning technology with virtual reality which, it says, is the "next big thing in ship design and ship interiors". This is likely to prove particularly useful in projects relating to passenger ships and cruise vessels.

"Vessel designs must be flexible and adaptable to suit the trends in travelling and to keep passengers returning. With scanning and virtual reality technology, we can quickly help owners visualise and understand the proposed interiors and layouts when they move around inside the simulated designs. This can be done before the vessel is even put into production or conversions have begun – saving owners millions on costly design mistakes," Ørgård added.

Underwater rudder repairs offer competitive option

MOBDOCK | A new and redesigned version of Mobdock, first introduced to the market by Hydrex Underwater Technologies in 2002, now enables permanent in-water rudder repairs to be carried out as an alternative to drydocking. This new option can save shipowners thousands of dollars in emergency drydocking costs, according to Dave Bleyenberg, the company' production executive, who revealed that the new equipment has been in constant use since it was launched recently.

Hydrex's new Mobdock takes the drydock out of the rudder repair equation

"The equipment can be mobilised to any port in the world," he explained, "enabling us to expedite permanent rudder repairs at a moment's notice. Major rudder defects often result in unscheduled, emergency drydocking, but class-approved, permanent repairs are now possible in situ. Engineering, welding and inspection teams can now perform their tasks underwater in a clean, dry environment, reducing maintenance and repair costs without the loss of time and money associated with drydocking and without disruption to a vessel's operational profile."

A recent rudder repair on a 200m-long pure car and truck carrier in the Port of Antwerp provides a good example. Shipboard engineers had discovered that the rudder was not properly balanced and the Mobdock was therefore deployed to allow rudder specialists to carry out inspections in drydock-like conditions prior to the completion of permanent repairs.

"The existing seal was tightened and incorrectly-sized rings on the upper and lower casing of the rudder seal replaced with new, correctly-machined ones before reassembling the components," Bleyenberg explained. "Such a repair was hitherto impossible without a stint in drydock," he added.