

### HMC's SafeTOW guards your safety

**SafeTOW is HMC's safety system which facilitates safe anchor handling and towing operations. This safety system is intended for all parties involved in these operations with a responsibility for safeguarding safety aspects in connection with anchor handling and towing.**

In June 2015, a terrible accident happened resulting in the sinking of a tugboat in the water near Busan in South Korea. One of the towing cables snapped and recoiled, striking one side of the tug boat. An investigation will start to find the exact cause of the accident. HMC would like to express our dismay and our grief over the victims and express our sympathy to their families. HMC has a lot of experience in transport engineering as well as maritime operations and knows that safety is always an important factor of maritime transports. Therefore we developed a method to calculate stability aspects of vessels engaged in towing and anchor handling operations. We have designed the

program SafeTOW which represents the current maximum allowable towline force. For every loading condition, the maximum allowed towline force is displayed giving the user the possibility to act in time. SafeTOW calculates the dynamic stability of the vessel in combination with the loading condition to assess the stability of the tug during an anchor handling operation. SafeTOW allows the user to safely operate an anchor handling operation within the operational limits set by SafeTOW, which indicates the maximum force on the towline. The industry urgently need to find a way of preventing further deaths. More information about SafeTOW can be obtained at [info@hmc.nl](mailto:info@hmc.nl).

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*“SafeTOW presents the maximum allowable towline force”*



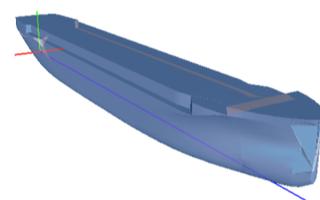
### HMC's EcoTrim, fuel savings of 2%-5% are possible

**EcoTrim is our intelligent software tool that calculates the optimal trim for a vessel aimed at reducing fuel consumption. The tool consists of a trim optimization module for all types of vessels. Fuel costs have a large impact on the economics of a ship and shipping companies and Savings of 2% - 5% are possible, which will result in significant cost savings.**

The hull of the vessel is being integrated within EcoTrim and is able to display the most efficient resistance curve by adjusting the trim based on the current loading condition. HMC's EcoTrim has the attention of International shipping companies, who are interested in obtaining the program to realize cost savings without any technical changes to the vessel. Taking into account the quantity of fuel burned daily by vessels, even a 2% saving in fuel consumption results in remarkable cost savings meaning these systems represent a significant opportunity for owners and their

operators. It is well known that environmental aspects and these fuel costs have a large impact on the economics of a ship and shipping company and we think CPC and EcoTrim is an ideal combination. EcoTrim is used to obtain the most optimal trim, route, for any given voyage and provides a quick overview of the most optimal trim and efficiency. The program shows detailed analysis of the hull and monitors your achievements on 'green shipping' For more information or a demonstration, please contact us via [info@hmc.nl](mailto:info@hmc.nl)

*“CPC with EcoTrim is the solution to reduce costs”*



### Multiaxial fatigue analysis for ships and offshore structures are highly relevant

**4D-Fatigue improves fatigue assessment and automatic screening of welded joints in ships and offshore structures which are subjected to multi-axial and variable-amplitude loading.**

Improvement of fatigue assessment has a large influence on maintenance and repair costs, operational downtime, and potential lifetime extension. It is also essential to ensure required safety levels with respect to crew, passengers, society, environment, asset, cargo and a better structural design. Fatigue is a complex and progressive form of local damage which is influenced by many factors such as magnitude, direction, phase and frequency of the loads causing cyclic stress; material imperfections and environmental conditions (cryogenic, arctic, hyperbaric, sea water). The existing multi-axial fatigue design methods can overestimate fatigue lifetime of

welded structural details by more than a factor of ten and predict lifetime of 30 years whereas the actual fatigue lifetime is three years only. Therefore, there are large interests of Dutch and International ship and offshore companies. HMC's Marine Quality Kit (MQK) is a very interesting solution to improve your fatigue assessment. Our MQK is a portable strain and fatigue measuring system and is easily installable and removable on any given structure. It is designed to measure strain and calculate fatigue life of structures like sea-fastening or project cargo, to give insight in the fatigue damage over a given period of time.

*“Our MQK is a portable strain and fatigue measuring system”*



### HMC fine-tuned ballast system of the Damen Offshore Carrier

**Damen Shipyards presents a new shipping concept to the market. The Damen Offshore Carrier (DOC) is specifically designed as a smaller heavy transport vessel suitable for offshore installations. In cooperation with Damen, HMC fine-tuned the ballast system of the DOC making it suitable for every offshore operation ranging from skid on-off, roll on-off as well as lifting operations.**

Heavy lift transportation vessels are towed or self-propelled heavy and voluminous cargo barges which are used to transport large volumes of heavy lift objects over long distances. A big advantage of these vessels is that they can be used to transport drilling semi-submersibles and jack-ups over long distances in a relatively short time. The magnificent design of the carrier is tailored to the delivery of offshore services and is a new multifunctional concept providing flexibility in heavy transport and offshore installations. The dynamic capabilities of the DOC which is designed by Damen delivers cutting edge possibilities within the renowned offshore & energy industry. Furthermore, the vessel aims to provide flexibility and year-round utilisation. To take full advantage the large cost-savings

related to such operations, the feasibility, workability and risk level have to be evaluated accurately. To this end, computer simulations of the dynamic behaviour of the total heavy lift system due to wind, waves current and hoisting/de-ballasting were performed which ensures a safe operation. HMC calculated how the DOC should be operated performing offshore related operations. HMC is very proud to be involved in the new shipbuilding concept by doing the fine-tuning of their ballast system making these complex offshore operations possible. For more information please contact our office at [info@hmc.nl](mailto:info@hmc.nl).

*“HMC is proud to be involved in the new shipbuilding concept”*

*“More information about our programs? Please contact [info@hmc.nl](mailto:info@hmc.nl)”*



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