

HMC Newsletter

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Study: development in a new way of constructing and installing of windmills at sea

Multiple offshore windfarms at the North Sea, in both the Netherlands and the rest of Europe, contain engineering flaws which causes increased damage to the construction. Because of this, replacing or repairing the supporting structure of the wind turbines is necessary in an earlier stage than initially engineered. Our trainee, Mr. Efdée, successfully started a study how to accomplish more durability.

The costs of these operations will be billions of Euros. To solve this problem, examination of new construction- or installation methods are required. The current technique in offshore engineering has not reached a sufficient level to accomplish "lifelong" durability within offshore windmills. This results in replacing or repairing activities which must be

completed to keep the windfarms producing energy. Expected is, if the current situation will not be solved to maintain a longer durability, it will not be profitable to exploit offshore windfarms anymore because of future legislation and regulations. HMC were regularly involved in the preparation of operations, the design of sea fastening and transport engineering.



"Windmills have to accomplish lifelong durability"

Free loading instrument for educational purposes

To support industry wide innovation and safeguard the continuity and quality of education, HMC aims to support education and sharing her knowledge on naval architecture and transport engineering with educational institutes. Our sector is very globally oriented, and education is of great importance.

Use of software packages as HMC's CPC and the exchange between educational institutes and schools are important. HMC's educational edition of CPC 2.0 is designed for future maritime officers, to help prepare them for their maritime career. The program is ideal for students who need a fundamental introduction to maritime business applications. CPC 2.0 is HMC's latest and modernized, totally rebuilt version of the loading instrument CPC. The latter was installed on over 2000 ships during the last 25 years. The latest

version is adapted to optimize the user interface and reduce the effort needed to calculate a ship's stability and plan on different loading conditions. The training of graduate and post-graduate students is impossible without chances to actually know how to deal with the nowadays possibilities on software packages and the interaction within the maritime industry. Maritime institutes who are interested in obtaining an educational license could contact our office at info@hmc.nl



"Free educational version of HMC's loading instrument"

How to deal with the rules of stability of European inland vessels

Common stability requirements for inland vessels currently do not exist. Existing stability regulations for inland vessels comprise only basic criteria, valid for all vessels within the scope of application of rules. There are specific requirements for particular ship types: container vessels, passenger vessels, river-sea ships and so on. Safety requirements depend on the vessel type and the navigation zone.

Although it is considered that inland navigation in Europe has a good safety record, stability related accidents do happen. In general, the stability hazards of inland vessels are recognized by the numerous safety regulations presently utilized in Europe. However, the stability rules often rely on doubtful approximations and oversimplified methods. As a consequence, in some cases, the regulations fail to provide sufficient level of safety. At HMC we think it is

very important to look at a solution for stability. Our loading instrument CPC is recommended for inland shipping and may lower your insurance when used in your vessel. The best probabilistic approach would enable not to learn from the accidents but to avoid them and diminish the risks for vessel, cargo, crew and environment. Source: paper of Igor Bačkalov about Stability of European Inland vessel: deterministic regulations vs. Probabilistic approach.



"Think about your stability, accidents do happen"

Accurate calculation of required bollard pull contributes to the safety of operations

Incidents in anchor handling and towing are often due to insufficient capacity of tugs deployed in the operation. Enough bollard pull capacity is of utmost importance, also consideration should be given for risk analyses to assure that a tow is safe in multi tug towages. The objectives of IMO Guide Lines are to ensure safety at sea, prevention of human injury or loss of life.

The most important performance indicator of a tug is its maximum bollard pull. It is therefore important that the prediction of bollard pull receives considerable attention during the various stages of design. Large components, such as monopiles or jacket structures, are often transported on a barge towed by a tug. In order to select a suitable tug for the job, it is necessary to determine the required bollard pull. The three main environmental forces required for the

bollard pull calculation are Wind, Current and Wave Drift forces. HMC researched and developed a method to implement these factors in its bollard pull calculations. An accurate prediction of the resistance and the speed loss in waves would require physical model tests. HMC can calculate the necessary bollard pull with sufficient accuracy to select the right tug. For more bollard pull calculations contact our office via info@hmc.nl



"Accurate BP calculation ensures safety at sea"



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