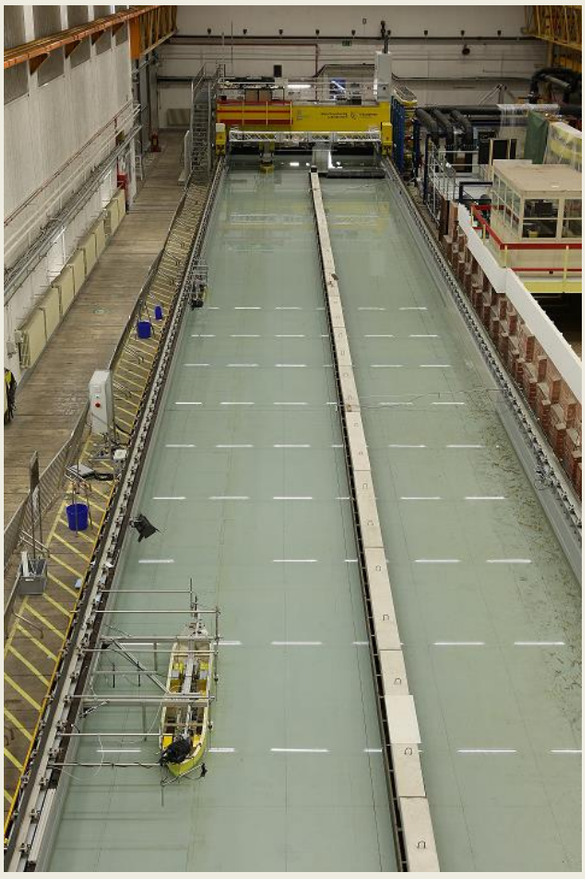
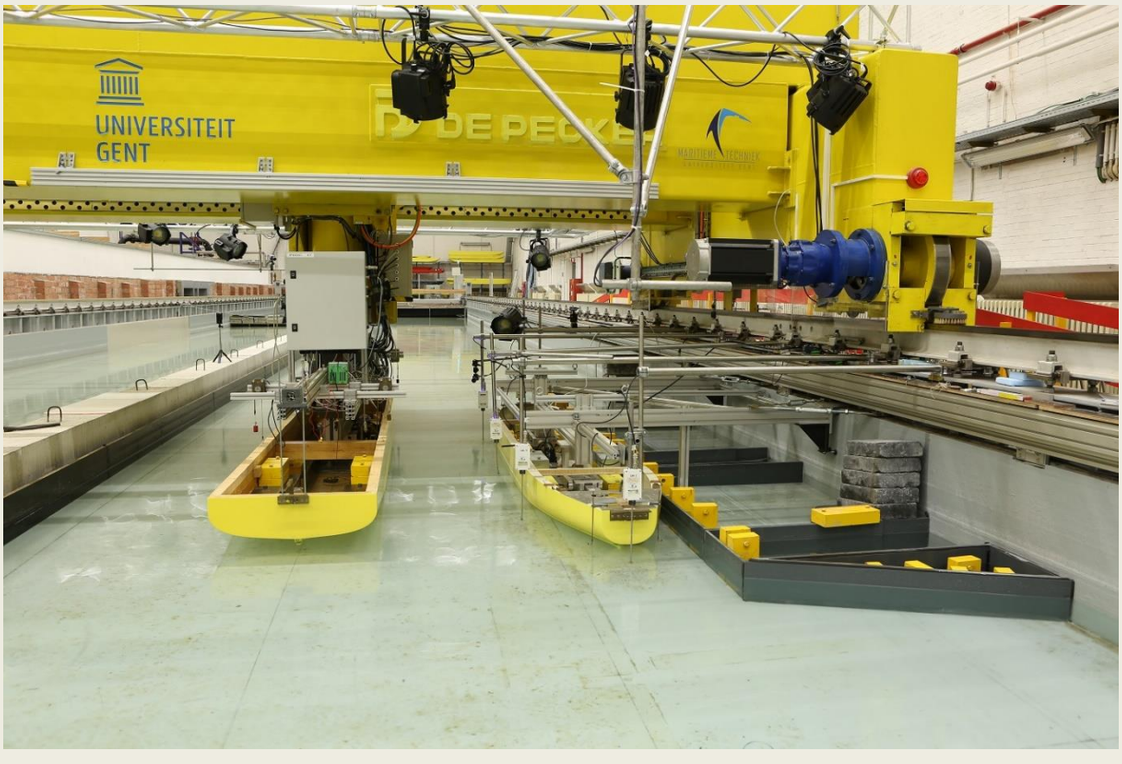
This is the 40th newsletter of the *Knowledge Centre Manoeuvring in Shallow and Confined Water*, which aims to consolidate, extend and disseminate knowledge on the behaviour of ships in shallow and confined water. This newsletter presents an item on an experimental research project that has been carried out to study the effect of passing ships on moored vessels when the blockage is very high.



Between March and August 2019, experiments were carried out in the Towing Tank for Manoeuvres in Confined Water at Flanders Hydraulics Research. The experiments are part of the PESCA project (Passing Effects in Shallow and Confined navigation Areas), which studies the effect of passing ships on moored vessels when the blockage is very high. The project follows up on the joint-industry ROPES (Research On Passing Effects of Ships), where the behaviour of moored ships under the effect of passing ships was investigated. The latter, however, did not consider very high blockage factors, i.e. when the cross-sectional area of the waterway is very small in relation to the cross-sectional area of the submerged part of the ship.

Since the planning and execution of the ROPES model tests in 2012, ship sizes have increased significantly. The capacity of the largest container ships, for example, has surpassed the 20,000 TEU mark over the last couple of years. This means that the relative size of the existing infrastructure, such as access channels, decreases. The focus of the PESCA project is to study the effect of parallel ship passages in high blockages at high passing speeds and close passing distances.



In the experiments, the blockage factor ranges from a situation in which the full tank width is used and 50% under keel clearance is present to a situation where the channel width is equal to four times the breadth of the passing ship with only 10% under keel clearance.

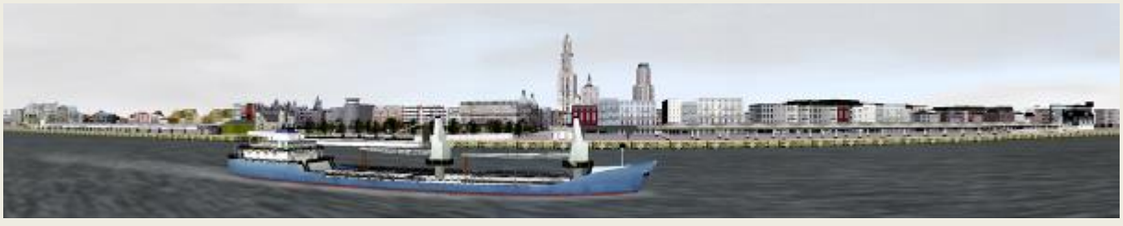
Inland navigation vessels encounter even larger blockage factors. Terminals are often located along the waterway and passing vessels may induce forces that have large effects on moored ships. Model tests have been performed when the width of the waterway is equal to three times the breadth of the ship.

New in these experiments is the addition of a fully automated camera system to further investigate the measured time signals.

Researchers associated with the Knowledge Centre attended the 11th International Workshop on Ship and Marine Hydrodynamics, which was held in Hamburg, Germany, from 22 to 25 September 2019. Thibaut Van Zwijnsvoorde presented "A mooring arrangement optimisation tool" and Changyuan Chen presented "An energy-efficient adaptive course control system for ocean surface ships". Luca Donatini presented "Experimental and numerical evaluation of the added wave resistance for an Ultra Large Container Ship in shallow water", for which he won a Best Student Paper Award.

Marc Vantorre participated in the Workshop on "RIVER-SEA TRANSPORT" in the context of Market Observation activities, which was organized by the Central Commission for the Navigation of the Rhine (CCNR) and which was held in Duisburg on 11 September 2019. He presented "The Special Case Of Inland Navigation Vessels Navigating At Sea. Opportunities And Obstacles".

On September 19, the tender for the design, construction, delivery and installation of the new towing tank carriage, the rails and the safety system for the Towing Tank of Manoeuvres in Shallow Water at Flanders Maritime Laboratory in Ostend has been published. The tendering procedure takes place in different stages. The present first stage is a selection phase which checks the suitability of the interested companies. The selected parties will then be able to consult the complete tender. An overview of the characteristics of the new towing carriage will be presented at the upcoming AMT conference.



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