

This is the ninth [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. The Port of Antwerp recently received one of the biggest container ships in the world and in our first item we explain how an accessibility study, which we carried out in 2005, played a role in this. Our second item deals with ongoing captive model tests which are being carried out for the ROPES project.

'Antwerp is ready for the big boys' titled one Belgian news magazine. On January 13, 2012, the Edith Maersk arrived at the Port of Antwerp. With a capacity of 15000 TEU standard size containers, a length of 398m and a beam of 56m, the Edith Maersk and her sister



vessels of the [E-class](#) are currently the largest container ships in the world. From an economic point of view, it is important that the Port of Antwerp is able to handle these vessels.

[Flanders Hydraulics Research](#) and [Ghent University – Division of Maritime Technology](#) played an important role in making this possible. A study of the accessibility of the Scheldt for 8400 and more TEU container vessels with a maximum draft of 14.5m was carried out in 2005 at the request of the Shipping Assistance Division of the Flemish Government. The study included building a dedicated mathematical prediction model for ship behaviour on the Western Scheldt. The assessment of upstream and downstream navigation was carried out with real-time simulations which revealed the possibilities and restrictions. Two series of simulations were carried out. In the first series, the container ship was steered by the pilots of the Flemish Pilotage on one full mission [ship manoeuvring simulator](#). In the second series, simulations of meeting manoeuvres were executed as realistically as possible by coupling two of the [simulators](#). The findings of the study were discussed in several publications (for example, by [Eloot and Verwilligen](#) in 2010).

The arrival of the Edith Maersk followed recently by her sisters, the Eleonora, Ebba and Emma Maersk, demonstrates that accessibility studies using [manoeuvring simulators](#) play an important role in port development.

Captive model tests are being carried out in the [towing tank for manoeuvres in shallow water](#) in the framework of [ROPES](#) (Research On Passing Effects of Ships). [ROPES](#) is a joint industry project aiming at providing the partners involved with software to compute the forces induced by a passing vessel on moored vessels. Both [Flanders Hydraulics Research](#) and [Ghent University – Division of Maritime Technology](#) joined the project and will report to the Antwerp Port Authority as the industrial partner in the project. The Antwerp Port Authority requested that the software would take account of specific situations in the harbour of Antwerp. A first request was to model the traffic in the Deurganck dock and the (yet to be built) Saeftinghe dock where large sailing container carriers interact with equally large moored container carriers. A second request was to study the setup of jetties on the river banks and in the docks to moor tankers that also will be affected by the passing ships. A third request was to study the interaction with smaller (inland) vessels.



To cope with these questions, a captive model test program is being carried out at the [towing tank for manoeuvres in shallow water](#) for different under keel clearances and dock widths. Four set-ups are tested: the interaction between a passing container vessel and two moored container vessels; the interaction between a passing container vessel and a moored tanker and inland vessel; the interaction between a swinging container vessel and up to two moored

container vessels and two container vessels meeting each other near a selection of moored ships.
[Read more.](#)

A first call for papers has now been launched for the [3rd International Conference on Ship Manoeuvring in Shallow and Confined Water: Ship Behaviour in Locks](#), which will be held in Ghent, Belgium, on 3 – 5 June 2013. Authors are invited to submit an abstract of 250 - 300 words to info@shallowwater.be before 31 August 2012. The official language of the conference is English and the abstracts will be reviewed by an international scientific committee. Once accepted, authors will be expected to write and submit a full paper, which will also be reviewed by the international scientific committee.



With respect to simulation models and numerical calculation methods to determine forces and moments due to ship behaviour in locks, the organisers would particularly welcome papers which focus on comparisons between the output of numerical models and benchmark model test data obtained at Flanders Hydraulics Research. A selection of the model test results is scheduled for publication in the proceedings of [MARSIM 2012](#) and a digital version of the data can be obtained by mailing to info@shallowwater.be.



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