

This is the third [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 contains a summary of our recent research activities concerning inland navigation and the effects of a nautical bottom.

Our research activities with regards to inland navigation involve several projects. One project is to simulate the manoeuvring behaviour of inland navigation vessels based on the data acquired by extensive model testing.



A mathematical model has been developed to predict the behaviour of a vessel of class Va. This model has also been scaled to predict the behaviour of class IV vessels. Fast-time model testing with both vessel types has been carried out for two different loading conditions, whereby interpolated conditions in both draft and under keel clearance have been studied. These results will be used to evaluate the manoeuvring behaviour in restricted areas and rivers with real-time simulations. Another project was the development of two purpose-built simulators for inland navigation. Both the in-house simulator as the simulator which was developed for [LENA](#) are now in use for educational and research purposes.

[Read more](#)

Further work has been done on the effects of a nautical bottom, whereby the physical characteristics of the surrounding fluid reach a critical limit beyond which contact with a ship's keel causes either damage or unacceptable effects on controllability and manoeuvrability. In particular, experiments have been carried out to study the behavior of bow thrusters in muddy conditions. Captive model tests were carried out at scale 1/75 of a 350m long container vessel with a bow thruster of 2500kW and a 400m long container vessel with two thrusters of 1750kW. The tests were carried out for three different underkeel clearances and for three different fluid densities. These data were then used to adapt the simulator model and to conduct real-time simulations representing manoeuvring in the Port of Zeebrugge. Based on these simulations, it was concluded that the actual criteria for minimum underkeel clearance can be upheld. [Read more](#)

We would like to remind our readers of the 2nd International Conference on Ship Manoeuvring in Shallow and Confined Water which will be held in Trondheim on 18-20 May 2011. A [second call for abstracts](#) was posted and the response has been very good. Authors may still submit an abstract until 8 August 2010. In addition, a workshop on "Inland Navigation" will be held in November or December at our premises. There is an opportunity to participate in a round table discussion. Please do not hesitate to send us an [e-mail](#) if you are interested.



*Knowledge Centre
Manoeuvring in Shallow and
Confined Water*

Berchemlei 115
2140 Antwerp
Belgium
T +32 (0) 3 224 60 35
E info@shallowwater.be

Although this newsletter is written with care Flanders Hydraulics Research nor Ghent University are responsible for typos or errors in the content. You are receiving this email because you are subscribed to the Knowledge Centre newsletter. We care for your privacy, this newsletter is sent to you without displaying your e-mail details.

You can [unsubscribe](#) to the newsletter, [subscribe](#) or [invite a friend](#).

www.shallowwater.be