

**International Conference on Ship Manoeuvring  
in Shallow and Confined Water: Bank Effects  
13-15 May 2009  
Antwerp, Belgium**

# Conference proceedings

# **INTERNATIONAL CONFERENCE ON SHIP MANOEUVRING IN SHALLOW AND CONFINED WATER: BANK EFFECTS**

13 – 15 May 2009

Editor

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# **INTERNATIONAL CONFERENCE ON SHIP MANOEUVRING IN SHALLOW AND CONFINED WATER: BANK EFFECTS**

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## PREFACE

Most ships are designed and optimised for operation at full ocean, to cover large distances from port to port, following a straight course at an economic speed. However, almost every ship will inevitably leave her natural habitat from time to time to berth in a harbour, that can only be reached by channels with restrictions in both depth and width. Speed has to be slowed down, bends have to be taken, external effects such as wind and current on the ship's track will become increasingly important. The distance between the vessel and the bottom, the banks of the waterway and other shipping traffic is significantly reduced, so that hydrodynamic interaction forces will disturb the ship's controllability.

An increased interest in ship behaviour in shallow and restricted water can be observed on an international scale. As a matter of fact, the importance of the maritime transport for global economy does not allow any weak links that may jeopardise the entire chain; just as all the other links, the connection port-sea has to be covered in a safe and efficient way, at an acceptable price to the local and international society. Especially the last decade, a spectacular increase of the overall dimensions of several ship types can be observed, while for port and waterway authorities it is not straightforward or even impossible to increase the dimensions of access channels and harbour areas at the same rate. As a result, a better knowledge of interaction effects will be essential on several levels: for the pilots and tug masters who are confronted with these effects on a daily base, for waterways authorities who have to judge whether ships with given dimensions can make use of their fairways in a safe and smooth way and decide upon capital investments, for port authorities and terminal operators who need to know the opportunities and limitations of their facilities, for waterway designers who must decide upon the dimensions of existing and future access channels, for simulator developers and users who apply their tools for research, design and training. Not only the maritime industry is challenged in this way; also for all stakeholders in inland shipping there is an increasing need for reliable information about the behaviour of push convoys and inland vessels in order to fulfil optimally their role in contributing to a solution for the mobility problem.

The Knowledge Centre "Manoeuvring in Shallow and Confined Water", established by Flanders Hydraulics Research in partnership with the Maritime Technology Division of Ghent University, intends to increase the understanding of phenomena that dominate the behaviour of ships in restricted navigation areas by creating an additional forum for all parties interested in this field. The International Conference on Ship Manoeuvring in Shallow and Confined Water that is organised in association with the Royal Institution of Naval Architects, aims to offer a new opportunity for communication and discussion, with the non-exclusive focus on: ship-bank interaction effects or, in short, *bank effects*. The organisers express their hope that this Conference will be the first event in a periodic series, to be organised in the future in co-operation with other institutions.

The 16 papers that will be presented during this Conference cover a wide variety of aspects and viewpoints. Although focused on ship-bank interaction, related topics – the most important being squat – will be dealt with as well. The opportunities of

theoretical, numerical, experimental and empirical research techniques will be discussed, but several authors will also present their – sometimes many years’ – practical experience in the field. In this way, the programme offers all elements to stimulate fruitful and inspiring discussions.

The organisers are extremely pleased with the international character of the Conference: the authors of the papers represent 13 countries from four continents: Australia, Belgium, Bulgaria, China, France, Germany, Japan, Korea, Malaysia, the Netherlands, Norway, the United Kingdom, and the United States of America. This illustrates once more the worldwide interest in ship behaviour in shallow and confined water. The initial list was still longer, but unfortunately due to different factors – among which the present global economic situation – some authors could, much to their and our regret, not make their commitments.

It will be hard to find a venue for a conference on bank effects that is more suitable. Not only for obvious reasons, being located on the right bank of the river Scheldt, but also because this location has a nearly symbolic meaning. In a historical perspective, the accessibility of the port of Antwerp through this river has proved to be the main and even the only condition for the prosperity of the city and the country. Although in history the main concern for the accessibility has not been hydrodynamics, the latter is of increasing importance due to recent evolutions in the shipping world. The awareness of the maritime community for the accessibility of the harbours is illustrated by the presence of Mr. Marc Van Peel, Alderman of the Port of Antwerp and Chairman of the Port Authority, and is also proved by the impressive response on the organisers’ request for sponsoring. The sponsors of this event represent harbour authorities, waterway authorities, maritime services, ship owners, port terminal operators, tugboat companies, water dependent industries and engineering companies.

On behalf of Flanders Hydraulics Research, the Maritime Technology Division of Ghent University and the Royal Institution of Naval Architects, the organising committee wishes the delegates a rewarding conference and a pleasant stay in Antwerp, and hopes this Conference on Manoeuvring in Shallow and Confined Water will be the first of a long series.

Antwerp, May 2009

Prof. Marc Vantorre  
Organizing committee



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