This is the 26th 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 is completely dedicated to the 4th MASHCON conference, which was held in Hamburg from 23 to 25 May 2016 and which was organized in co-operation with the Federal Waterways Engineering and Research Institute (BAW).

After editions paying special attention to bank effects (Antwerp, 2009), ship – ship interaction (Trondheim, 2011) and lock effects (Ghent, 2013), the emphasis of the 4th MASHCON conference was on ship interaction with the bottom. This topic was chosen because of the increasing interest in the phenomena occurring in the gap between the keel of a ship and the bottom of a waterway. One important driver for this is the possibility of reducing the required under keel clearance. Another important issue concerns the problematic definition of the boundary between bottom and water.

The keynote speech was given by Capt. Wolfgang Hintzsche of the German Shipowners' Association and provided a shipowners' perspective on port and waterway management and approach channel restrictions. Klemens Uliczka of BAW subsequently presented the first paper of the conference, dealing with the measurement techniques that were used in the research project on ship-induced sediment transport in coastal waterways (SeST). In the framework of this joint research project, Sebastian Niehüser of the University of Siegen presented the results of a field campaign in the Kiel Canal. In addition, BAW co-authored a paper by Ivan Shevchuk of the University of Rostock, who presented a numerical analysis of the flow in the gap between the ship hull and the fairway bottom in extremely shallow water. Philipp Mucha of BAW and the University of Duisburg-Essen presented a validation study on numerical prediction of ship squat and resistance in shallow water.

The Knowledge Centre presented five papers. Marc Vantorre presented a state of the art of ship manoeuvring in muddy navigation areas. The concept of the nautical bottom, the determination of the physical characteristics of mud and the manoeuvring behaviour in such areas were discussed. Guillaume Delefortrie presented a manoeuvring model in 6 degrees of freedom that is specifically developed for shallow water. The benchmark ship KVLCC2 was used as an example for discussion of the model. In addition, he gave an overview of the capabilities of the towing tank for manoeuvres in shallow water at Flanders Hydraulics Research. Evert Lataire presented a paper discussing the impact of banks on ship squat. Based on an extensive series of model test experiments, he demonstrated that the squat is also dependent on the slope and type of the bank.

Evert Lataire also presented the benchmark data of the DTC container carrier that were specially prepared for this conference. The presentation was then followed by a session of 4 papers that used these open access data on interaction with the bottom to validate different numerical codes. The numerical simulation of the ship bottom interaction of DTC container carrier was studied by the Huazhong University of Science and Technology for different keel clearances in pure sway motion using an overset grid technique. Yi Liu of Shanghai Jiao Tong University presented RANS-based simulations of static drift and pure sway tests at 20% under keel clearance and two forward speeds. Zhu-Ming Yuan of Strathclyde University used a potential flow method to investigate ship – bank, ship – bottom and ship – ship interactions. Ganbo Deng of METHRIC presented CFD simulations of the 4 different pure yaw and pure sway test cases in shallow water using a finite volume RANS solver.

The Knowledge Centre also co-authored two papers dealing with ship - bottom interaction and squat. Rene Barth of Wiertsema and Partners presented the results of a full scale field test in the Port of Delfzijl to study manoeuvring with negative under keel clearance. Tim Gourlay of Curtin University compared different potential flow methods to study ship squat for different canal widths. The collaboration with researchers from different institutions to advance the knowledge of manoeuvring in shallow and confined water is important for the Knowledge Centre, as these two papers demonstrate.

One of the main objectives of the MASHCON conferences is to discuss progress in scientific research and to stimulate mutual contacts between experts in the field. With 34 papers and a keynote speech that were presented to more than 100 participants from 20 countries, accompanied by some lively discussions, we believe this edition was a success. We wish to thank our colleagues at BAW for their tremendous efforts as local organizers, the authors, the participants, the International Scientific Committee and the supporting organizations.

The conference proceedings are available online and the four sets of experimental benchmark data are available upon request. The conference was closed by Marc Vantorre with the announcement that the 5th MASHCON conference will be held in 2019 in Ostend, Belgium.

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