Construction RV *Wim Wolff*

Progress report #7: August 2021

The RV *Wim Wolff* is a new shipbuilding project for the Dutch national research fleet. The fleet is owned and operated by the National Marine Facilities (NMF), a department of the Royal Netherlands Institute for Sea Research (NIOZ). The NMF fleet consists of three vessels capable of conducting research from the shallow coastal waters out into the open ocean.

The RV *Wim Wolff* is intended to replace the Wadden Sea research vessel RV *Navicula*, and with its shallow draught of 1 meter it is specifically designed for overnight voyages for research in the Wadden Sea, the Zealand delta or the coastal zone.

With a permanent crew of four, the RV *Wim Wolff* will offer state-of-the-art facilities for a maximum of 12 passengers, and is equipped with onboard dry and wet lab facilities. The vessel also has room for two customised lab containers.

The RV *Wim Wolff* will be built by Thecla Bodewes Shipyards in Harlingen, and is scheduled for delivery in 2023.

Sea handling tests at MARIN

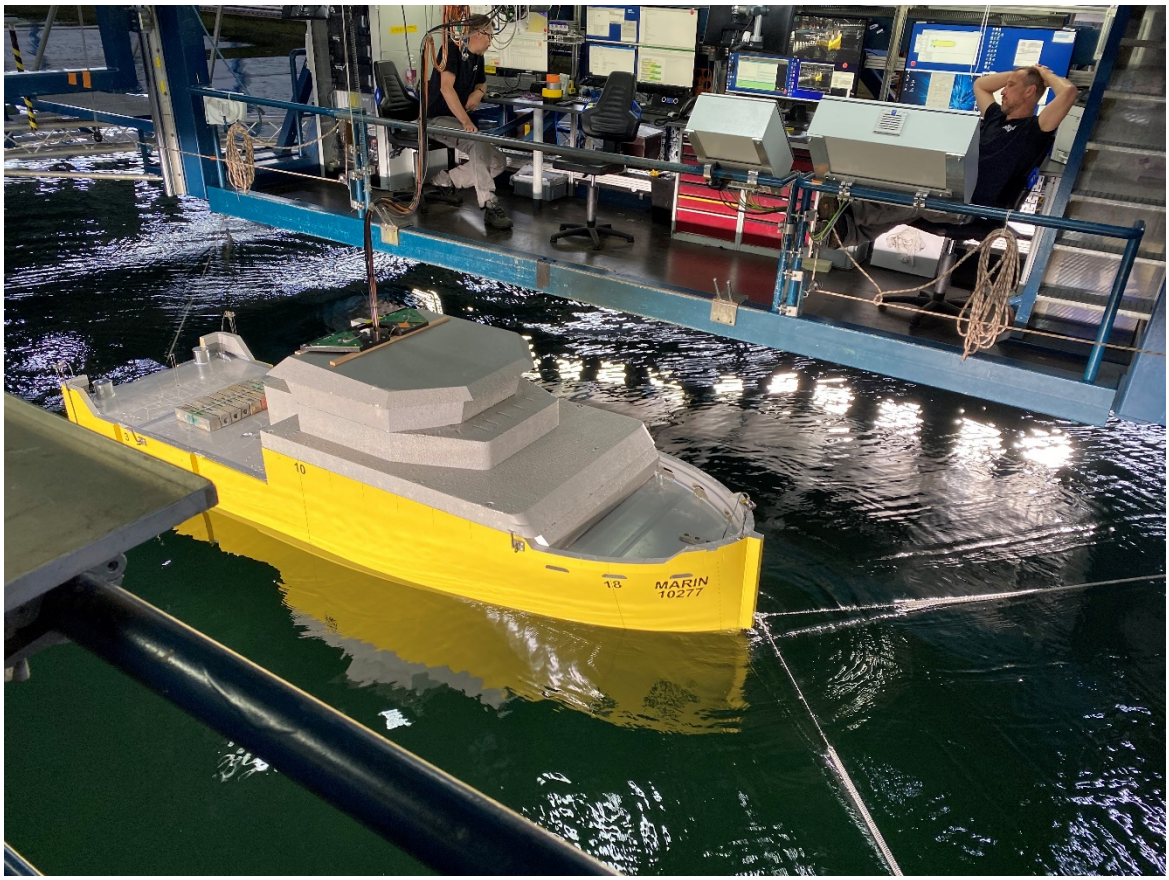
After the speed tests, the second series of model tests were intended to monitor the RV *Wim Wolff*'s sea handling. A specially designed 6-meter model of the vessel tested two different aspects of sea handling under the influence of wave force and direction:
[1] green water on deck;
[2] vessel drift.
MARIN conducted these tests in a special basin where moveable wall panels replicate waves of different forces and directions.

MARIN sea handling test basin. The moveable wall panels that generate waves can be seen at the right. The yellow test model of the RV Wim Wolff can be seen in the middle of the drag tank, below the 'train'; the frame used to operate the measurement instruments and a viewing platform.

[1] Green water on deck;

To conduct the 'green water on deck' test, the model is placed in the middle of the basin and attached on both sides to the 'train' suspended over the basin. The model is then subjected to waves of various sizes and directions generated from the sides of the basin. The objective is to determine whether the vessel holds water under various circumstances, especially on the aft deck. Each test lasts for a few minutes, with interruptions of no more than 15 minutes to allow the water to stabilise.

The definitive test results have yet to be released, but visual observations did not indicate that the model would become flooded during the tests.



Scale model of the RV Wim Wolff in the test basin, attached to the 'train' with all of the test instruments.

[2] vessel drift.

To test the drift, the model is detached from the 'train'. The model has its own propulsion and screws to move about the basin under its own power. Sensors mounted to the model are connected to the 'train', which follows the model during the tests to measure its leeway drift.

A MARIN technician uses a rubber boat to disconnect the model from the 'train' to allow it to sail under its own power. A second technician on the 'train' holds the model in place with a boat hook.

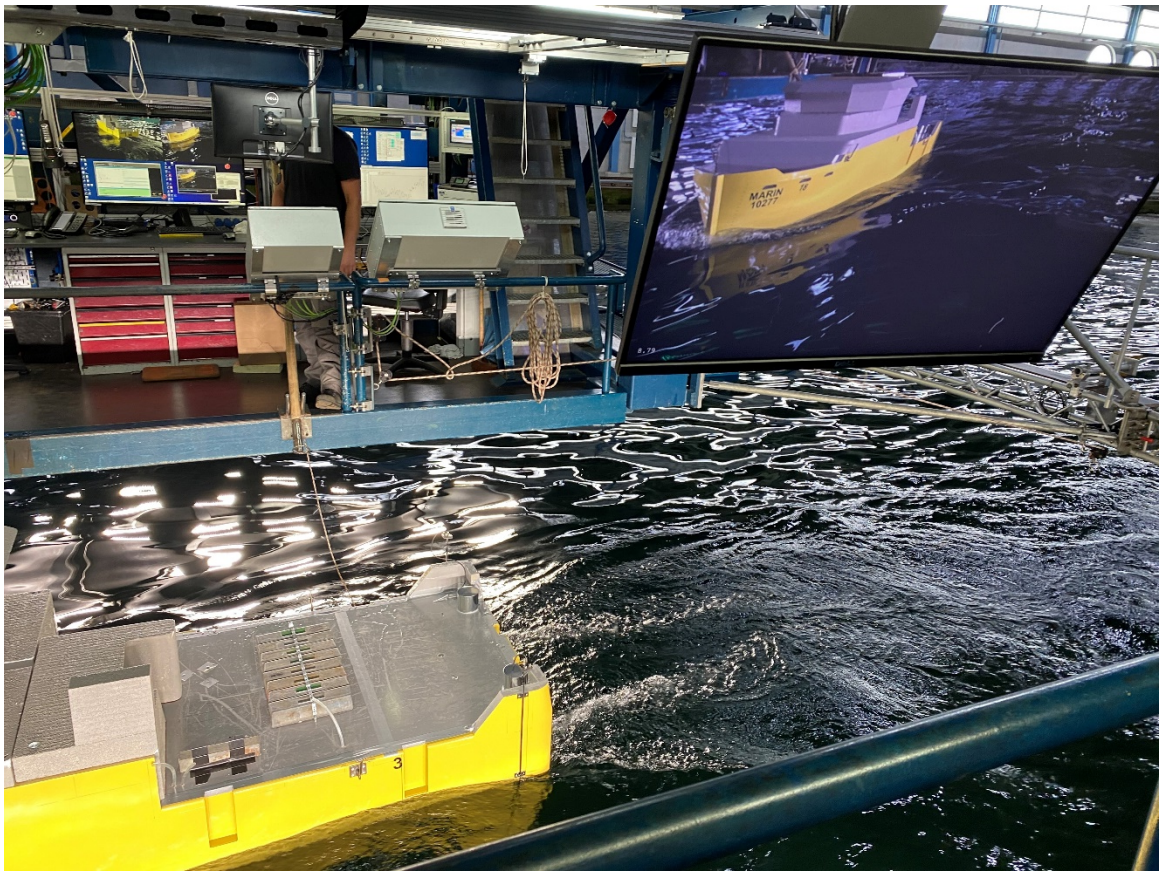
These tests are otherwise identical to those for measuring water on board. In a series of tests, waves of different heights and directions are generated as the model sails through the basin at different speeds to measure its leeward drift.

The model is held in position under the 'train' using boat hooks to drag it to the start of the tank. The model then moves about under its own power until it stops at the end of the tank, first by deactivating the propulsion and then by slowing the model manually using boat hooks.

The model is held in place with boat hooks until it reaches the desired speed under its own power.

During the tests, the model immediately transmits all of the relevant measurement data to the 'train' above the model. The progress of the tests can be monitored via direct observation and several other instruments.

The sideways movement of the 'train' also gives a good impression of the degree of leeward drift.



A drift test being conducted. The model's own propulsion can be clearly seen, along with the monitor showing the model's bow.

MARIN's report with the definitive test results is expected sometime next month.

In the meantime, progress is being made on the hull engineering. All of the blueprints and construction plans must be finalised and approved before builders can begin construction on the hull. The approval of this basic design is expected to be provided next month. Part of this approval involves the final recalculation of the hull and total displacement to ensure that the maximum draught of 1 meter is not exceeded.

For more information, please visit: www.NewResearchFleet.nl

Henk W. van der Veer
Alex Cofino