Construction RV *Wim Wolff*

Progress report #3: April 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 Zeeland 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 will also have 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 late 2022

Project management

To ensure good communications and the smooth construction of the RV *Wim Wolff*, a project management team has been created with representatives from the client and the shipyard. This team will meet every two weeks, with additional technical meetings as necessary.

The project management team for the RV Wim Wolff, with Priscilla van Amerongen (left rear) and Simone Luijendijk (right rear) representing TBS and Alex Cofino (left front) and Feico Hoogeveen (right front) representing NIOZ.

Thecla Bodewes Shipyards will be represented by Priscilla van Amerongen and Simone Luijendijk.

Priscilla van Amerongen began her career as a Marine Surveyor, then went on to work as a Senior Engineer with the Ministry of Defence and then as Project Coordinator with Imtech Marine. In 2008, she moved to SMB Offshore, where she worked as a Naval Architect before being promoted to Project Manager. She continued working as a Project Manager after her transition to Thecla Bodewes Shipyards.

Simone Luijendijk began her career at Oracle, then moved on to become a Product documentation Manager at Euromate before becoming a Project Manager at ATO Sustainable Business Engineers. From there, she became Director and Project Manager at ASCC, and she has worked as Location Manager for Thecla Bodewes Shipyards in Harlingen since 2018.

The Royal Netherlands Institute for Sea Research (NIOZ) is represented by Alex Cofino and Feico Hoogeveen.

Alex Cofino started work as a Surveyor and Project Manager at DNV (Det Norske Veritas), before moving on to the position of Superintendent of New Construction at UECC, Operations Manager at TESO and then Asset Manager at Heerema Marine Contractors. He has served as the head of the National Marine Facilities (NMF) department at NIOZ since July 2019.

Feico Hoogeveen has a wealth of experience in the shipbuilding industry, having worked as Director of New Construction at De Volharding Shipyards in Harlingen, Director of Navis Naval Management & Consultancy, Director of Operations at Abis Shipping Company and Managing Director of CIG Shipbuilding. Since 2017, he has been a managing partner of Navis Naval Management & Consultancy, specialised in ship management and project management, including new construction support. Feico Hoogeveen will support NIOZ in the construction of two vessels: the RV Wim Wolff and RV Adriaen Coenen.

The project management team can also call on support from both TBS and NIOZ as needed.

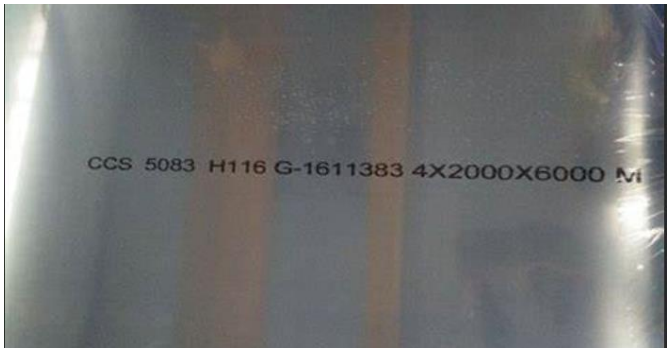
The choice for an aluminium hull

The specification for a shallow draught of 1 meter for the RV *Wim Wolff* has resulted in a construction process that saves as much weight as possible, without sacrificing functionality. Most of the vessel's displacement of 65 tonnes lies in the weight of the hull and superstructure. Using aluminium in the construction will result in a 40% **weight reduction** over the use of steel.

Aluminium is also greener and more **sustainable** than steel, as it can be recycled without loss of quality. An estimated 75% of all aluminium ever produced is still in use; even 'new' aluminium may contain up to 50% recycled metal. Aluminium also requires l**ower maintenance** costs for oceangoing vessels, as it is less prone to corrosion than steel and does not need to be painted.

The construction will not use pure aluminium, however: the vessel will be made from an aluminium alloy with small amounts of other metals. Specific alloys are available for every industrial application. The hull and superstructure of the RV Wim Wolff will use seawater-resistant marine grade aluminium 5083; a hard Al-4.5%Mg-0.7%Mn alloy that is known for its corrosion-proof characteristics.

To guarantee delivery of the right type of aluminium with the desired quality, the manufacturer stamps each aluminium product with a label indicating the production process. This allows the user to trace the origin and composition of the aluminium. Quality control is guaranteed by an independent inspection agency, which issues a Type 3.1 inspection certificate.



Sample of the production process stamp for marine grade aluminium (5083), which can be used to trace the product's origin. H116 refers to the aluminium's hardness.

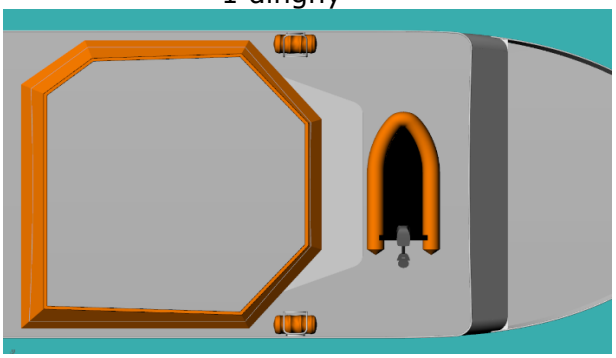
Although there is an aluminium producer in Delfzijl, The Netherlands, most of the aluminium will be produced elsewhere. There are several wholesalers that import and sell aluminium in the Netherlands, and the stamp and inspection certificate guarantee the quality of the product.

Progress in April

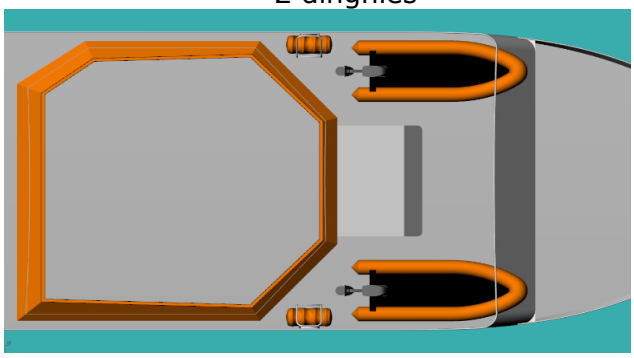
The focus so far has been on optimising the hull shape and the contract tender for the aluminium hull. This optimisation work also involves a check of the eventual lines of sight around the bridge. The illustration below shows the effects of two different options for the placement of 1 (left column) or 2 (right column) dinghies onboard, with top views and the lines of sight to the front and sides.

Top view

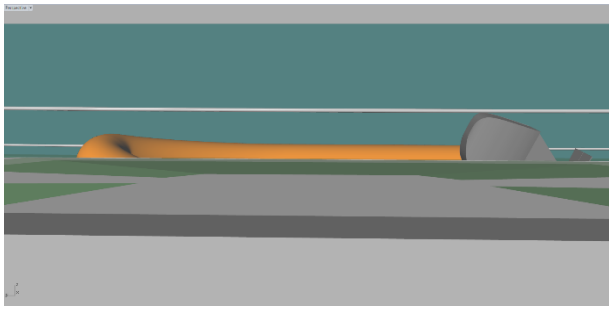
1 dinghy

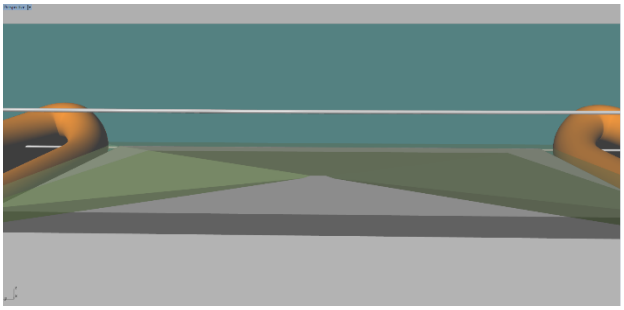


2 dinghies

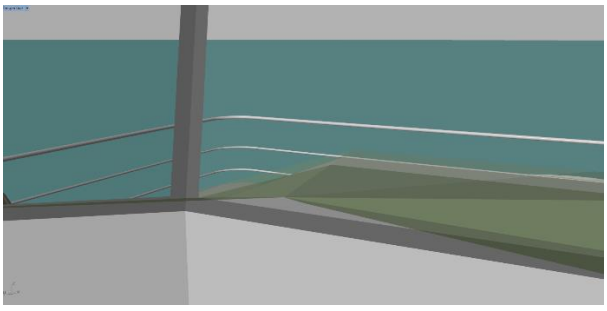


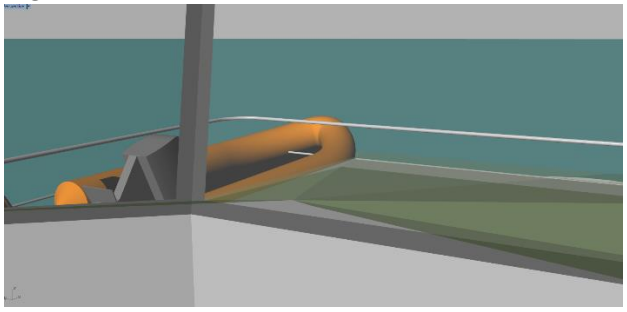
Front view





Side view





The finalised hull design and lines plan has been submitted to the classification society Bureau Veritas for approval. A model of the definitive design is currently being built to for use in model tests and tow tests at MARIN. Once the hull has been approved by Bureau Veritas, the shipyard can begin construction on the hull.

Schedule for May

The definitive contract tender for the aluminium hull at Dijkstra in Harlingen is scheduled for May, and the builder will begin purchasing items with longer delivery times, such as the motors.

More information can be found on: www.NewResearchFleet.nl

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