# Construction RV *Anna Weber-van Bosse*


## Progress report #6: August 2023

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## INTRODUCTION

When it is complete, the RV *Anna Weber-van Bosse* will serve as the ocean-going research vessel for the Netherlands' 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.

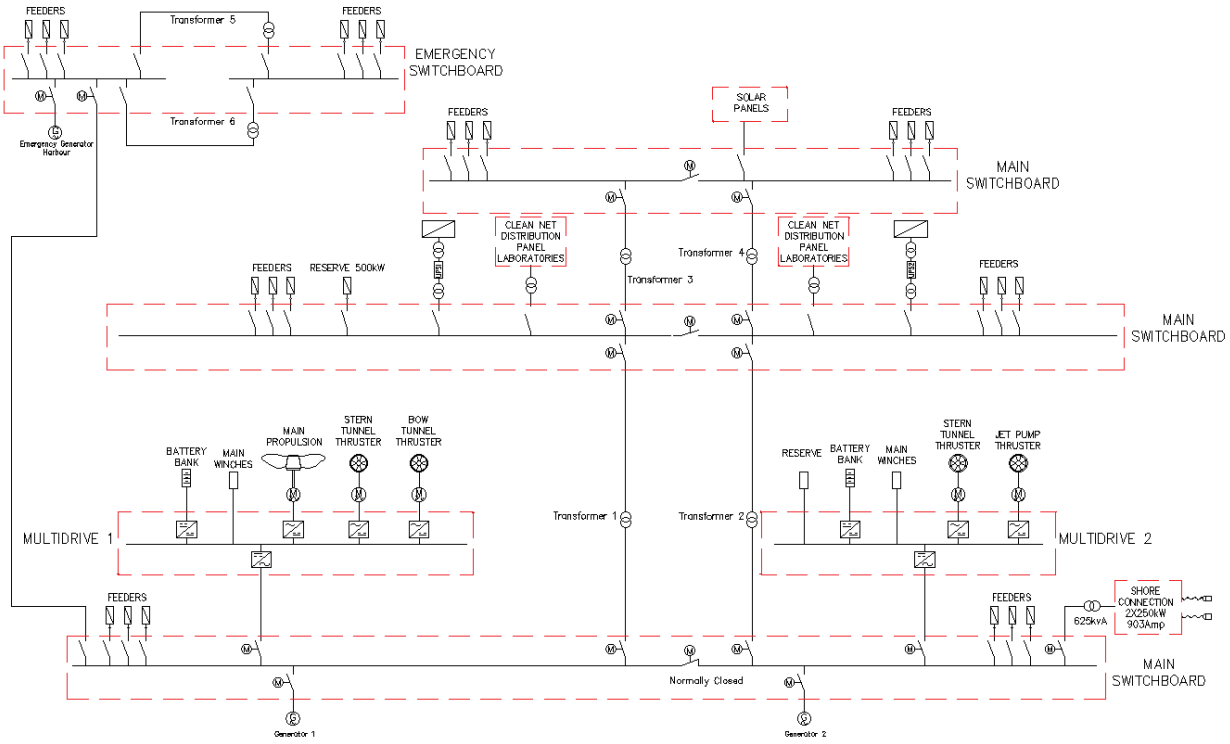
As we explained in last month's progress report, each month we will explain part of the vessel's technical components until construction actually begins on the vessel. Last month, we provided a brief overview of the vessel's manoeuvring systems. This month, we will describe how the energy generation and distribution installations will be fitted aboard the vessel.

As we explained last month, the *Anna Weber*-van Bosse will be equipped with a diesel-hybrid propulsion system. A diesel engine will power an electric generator that provides electricity for the propulsion systems via distribution boxes. One of the reasons for choosing a diesel-electric system is to minimise the amount of noise emitted under water. Several other components need electrical power alongside the propulsion and manoeuvring systems. These include the cabins for the crew and passengers.

The vessel will be equipped with two generators that produce a total of 2800 kW. The *Anna Weber-van Bosse* will have one 1200 kW generator set, and another that generates 1600 kW. A load balance has been drawn up for the various operational profiles to ensure that sufficient electrical power is available at all times to perform the necessary tasks. In addition to the two generators, the vessel will be equipped with two battery packs that can supply potential peaks in power demand. That will also make it possible to use a single diesel generator for Dynamic Positioning operations, with one battery pack serving as an active backup. This will help reduce fuel consumption and the number of operating hours. Connecting the generators, batteries and propulsion systems to two combined DC distribution boxes will reduce the number of components needed, while improving energy efficiency. When in port, the vessel will have the option of choosing to receive shore power or using the on-board harbour generator. At sea, the harbour generator will serve as an emergency generator.

The vessel will also be equipped with a wide range of scientific research facilities so that in the future alternative (temporary) electrical supplies, such as fuel cells, can be installed on board. Several solar panels will serve as complementary sources of energy for the vessel.

The main and supplemental distribution boxes will be arranged to provide redundancies at all times. That means when a malfunction occurs in one side of the system, the other can take over automatically. This is required for Dynamic Positioning operations (DP2), for example when working near offshore windmills.




## A LOOK BACK OVER THE PAST MONTH

Armon is currently working on the 3D modelling of the vessel based on the approved blueprints. Armon and the NIOZ have held several meetings to discuss the potential implementation of a methanol rating for the vessel. The parties have decided that the shipyard will add the requested methanol rating. That means Bureau Veritas will evaluate the complete engineering package as if the vessel were fully prepared for methanol-powered operations. This will prevent potential disputes with the classification society if the vessel is converted to running on methanol in the future. The development of the necessary technologies and methanol supply chain will be the determining factor in that decision. To allow for the full inspection of the engineering by the classification society, the NIOZ has approved a delay of 21 days.

The parties have decided to design the *Anna Weber-van Bosse's* funnel detached from the wheelhouse, to simplify the flow of exhaust gases. The routing as chosen in the submitted design was considered to be too complex, and not sufficiently reliable over the long term. This will have consequences for the original concept of a culture setup on the aft deck, which will have to be moved to the foredeck due to the potential shade from the separate funnel.

The last model tests have since been complete at MARIN. The test of the propeller design is the last work MARIN completed at the location in Ede. The NIOZ has evaluated the majority of the MARIN reports, and identified a few issues that require the shipyard's attention.

## PROGRESS

The blueprints and schematics are generally progressing according to schedule, and there are no major deviations. The shipyard has indicated that they would like to extend the completion of the basic design phase into late September. The discussions regarding the methanol requirements are complex and very time-consuming. A second meeting was held with Bureau Veritas in week 34, and several issues were clarified. The completion of some secondary blueprints is still behind schedule, but this is not expected to have an impact on the progress of the rest of the work.

Construction is still scheduled to begin on 11 October. An official ceremony will be held at the shipyard in Vigo to mark the start of construction. The yard will then begin manufacturing the first sections of the vessel.

## SCHEDULE FOR THE MONTH AHEAD

The next month will see the completion of the basic design phase. There are still some items that the shipyard must deal with before the NIOZ can grant approval. The NIOZ will host a Science Day in the Netherlands on 26 September, where scientific stakeholders can provide input on the vessel design and the latest changes will be presented. These include the layout of the various laboratories, and the placement of sensors and winches. The event will also feature presentations of the equipment provided for the vessel by the firms Kongsberg, Nortek and Ibersica.

A visit to Kongsberg Norway is planned to discuss the entire navigation and communication scope and to deal with the open items on the agenda. The vessel will be equipped with some fairly complex and expansive systems that will require considerable input from the user.

In the meantime, work will continue on the schematics, blueprints and layout drawings. Along with the engineering work, the purchasing specifications will have to be submitted to the NIOZ for approval.

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