

22 May 2006: Green light for new research vessel AURORA BOREALIS

Today, the German Science Council has recommended going ahead with construction of the new research vessel Aurora Borealis. The research icebreaker, designed as a European cooperative project, will not only be equipped with state-of-the-art technology, but will also have a drilling platform. The ship is designed primarily for operation in the Arctic and will be the first of its kind capable of working in the Central Arctic Ocean during winter.

"Aurora Borealis is so important for research because, in contrast to previous research icebreakers, it will carry a new deep sea drilling system and will be able to work in the central Arctic Ocean throughout unfavourable seasons under the most extreme weather conditions", explains Prof Jörn Thiede, Director of the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven, who has been promoting the project tirelessly for years. "With Aurora Borealis it will be possible to retrieve sediments from depths down to 4000 metres and even from below a continuous ice cover." Sediment deposits from deep below the Arctic Ocean seafloor, currently unexplored, provide a key to the understanding of the region's climate history and its effects on the global environment over millions of years. Global climate change is especially noticeable in the Arctic. Over the past decades, the annual average temperature has been rising significantly. Glaciers have been moving much faster than observed previously and permafrost soils have been thawing. Aurora Borealis will contribute to the understanding of such processes, especially within a global context.

Whereas in 2002, the Science Council was not ready to make a recommendation for Aurora Borealis, the 350 million Euro project now received green light during the second round of consultations. Scientists hope for the contributing nations to quickly reach an agreement on financing and realisation of the project. Aurora Borealis will enable more efficient operation of the German research fleet in polar oceans. The ice margin vessel Maria S Merian, which was consigned to science only this year, will also be working predominantly in the Arctic. However, she not only lacks the special drilling equipment of Aurora Borealis, but is also less suitable for work in the ice. The currently most modern research ice breaker Polarstern operates alternately in the Arctic and Antarctic. After commissioning of Aurora Borealis, however, Polarstern could be used primarily in the Antarctic in order to avoid costly commuting.

Most up-to-date and innovative research vessel

The most conspicuous characteristic of Aurora Borealis is its drill tower. For the purpose of drilling, the drill gear is lowered through the so-called 'moon pool', an opening in the hull of the vessel located amidships. A heave compensation system provides stability during retrieval of the drill cores. Through 'slow motion ice-breaking', operating sideways, the vessel is able to maintain its exact position in ice-covered waters. While moving forward with a speed of 2 to 3 knots, Aurora Borealis can break a continuous sea ice cover of up to 2.5 metres thickness straight on. Other than the extraction of sediment cores, principal tasks of the new ship will include biological and oceanographic investigations, especially under winter conditions. A second moon pool enables the deployment of autonomous and remotely operated underwater vehicles.

Technical data

- Overall Length: 178 m
- Width (main deck): 40 m
- Draught: 10.2 m
- Height to main deck: 20.5 m
- Maximum speed: 15 kn - Travelling speed: 12 kn
- Max. Expedition time: 60 days
- Staff(crew + scientists): 120 total
- Diesel electric power: 50 MW

- Loading capacity: 100 container

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