Icebreaker Oden is one of the world's most powerful icebreakers. Even on the drawing board, this icebreaker was being prepared for research work in polar regions. Oden has continued to be adapted for research tasks, and is currently one of the premier platforms for research in polar oceans.





108 m



H

AF

16 knot

3,380 m3 =

30,000 nm

at 13 knot



31 m



11 knot

4 knot



FUEL

1.9-m-thick ice at 3 knot



≤22



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Working in cooperation since 1991, the Swedish Polar Research Secretariat and the Swedish Maritime Administration have regularly conducted research expeditions using Oden in polar regions. On 7 September 1991, the icebreaker became the first non-nuclear powered vessel to reach the North Pole, and since then, Oden has been to the North Pole on eight more occasions. This icebreaker has also served in Antarctica for five seasons under the auspices of a cooperative Swedish-American research arrangement.













The vessel has been used with great success in marine geology, oceanography, ecological research, and atmospheric research in the Arctic and Antarctica.



Efficient icebreaking

Oden is extraordinarily manoeuvrable in heavy ice, thanks to the special design, with its square bow, specific hull shape, ice knife, propellers with nozzles and oversized rudders. Thrusters at the bow sprays jets of water to reduce the vessel's friction on the ice, and a healing system for wiggling the vessel side-to-side further enhances the ability to navigate the ice.

The main machinery consists of four engines in a diesel-mechanical system that delivers an output of 24,500 hp. The two propellers with nozzles each measure 4.5 metres in diameter and are designed to cope with the ice load of polar oceans.

The Oden research platform

The scientific equipment on the icebreaker is extremely flexible, and can be customized for each research expedition. The scientific equipment includes laboratories and laboratories housed in containers, freezer storage, and storage containers. The research laboratories are prepared for water, sewage, compressed air, and electricity.



The main laboratory on the foredeck is designed to be used for various research purposes, and the fixtures and fittings can be customized based on specific needs. The permanent equipment includes fume cabinets, a clean air system, refrigerator, freezer (to -80 °C), gas lines, and seawater intake. A multi-beam echosounder enables 3D mapping of the ocean floor.

Navigational and meteorological data are collected continuously during research expeditions, stored on the vessel's computer servers, and made available to researchers during and after the expedition.

Cooperation

The Swedish Polar Research Secretariat and the Swedish Maritime Administration have, through their successful cooperative arrangement, developed the icebreaker Oden into one of the world's premier platforms for conducting research in polar regions. An ongoing cooperative agreement ensures that Oden will remain a leading research vessel for many years to come.

The Swedish Polar Research Secretariat represents the icebreaker Oden in scientific enterprises in both national and international contexts.

More information:

- Brochure about icebreaker Oden (pdf 1.3 MB, opens in new window)
- The Swedish Maritime Administration's fact sheet about Oden (pdf, opens in new window)

