# New polar vessel for Argentina

The ship will transport supplies and personnel between Ushuaia, the southernmost city on the South American continent, and Argentina's thirteen Antarctic stations

Since May 2022, Aker Arctic has been working on the basic design for a new polar vessel for Argentina. The concept development began already in late 2014. The basic design, scheduled to be completed in April 2023, includes updates to comply with the newest international regulations and accommodate the latest technical features.

## Fulfil tasks independently

The Antarctic logistics vessel is intended to supply Argentina's thirteen Antarctic stations with provisions, fuel, fresh water, dry cargo and equipment. It will additionally transport research and shore facility maintenance personnel between Ushuaia on the mainland and Antarctica during the southern hemisphere's summer months.

Most of the country's research stations are located on the Antarctic Peninsula, whereas the southernmost station, Belgrano II, is located on the south shore of the Weddell Sea, with ice presence and extreme hydrometeorological conditions.

Therefore, the vessel's own capabilities must fulfil all its tasks independently: travel to and from the polar region while supporting simultaneous and sustained helicopter, boat and amphibious craft operations for embarking or landing personnel and cargo.


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Cooperation between Argentina and Finland in the maritime context has a long-standing history, dating back to the construction of A.R.A. *Almirante Irízar* at Wärtsilä Helsinki Shipyard nearly 50 years ago.

## General arrangement

The vessel has been designed to accommodate 190 persons with pantry and mess areas for each accommodation deck. The crew amounts to 118 persons, plus 60 special personnel and 12 passengers.

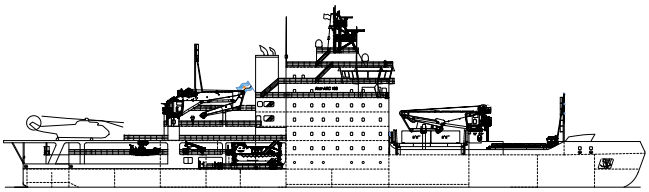
The extensive foreship cargo areas are well protected for carrying fuel with a low flashpoint. There is space for fifty 20 ft containers and two reefer containers, as well as a separate provision hold for the ship's own use.

In the stern, there are cargo holds for miscellaneous cargo, a helideck with two hangars for helicopters which are needed to transport cargo from the ship to the stations, as well as two landing craft to take cargo from the ship to the shore.

## Cost-efficient transit

The machinery consists of three main diesel generators and two electric propulsion motors of 5 MW each, driving conventional shaft lines. This solution is reliable and cost-efficient on long transport distances.

The ship is further equipped with fin stabilizers, which is a less common feature on icebreakers. However, the vessel will transit 90% of its time in open water, exposed to the South Atlantic's harsh conditions. From the port of Ushuaia on Tierra del Fuego en route to Antarctica, the vessel crosses the Drake Passage, known for its storms and heavy seas where the fin stabilizers will be an advantage.



## Technical details

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| Length: 130 m |
| Breadth: 23,9 m |
| Draught: 8 m |
| Propulsion: 2 x 5 MW |
| Speed in open water: 16 kn |
| Icebreaking capability: 2 knots in 1 m first-year level ice with 20 cm snow cover |
| Autonomy: 15,000 nautical miles |
| Service Temperatures: +35 °C to –30 °C (hull –40 °C) |

## Extra-strengthened hull

The vessel will be able to advance at a speed of 2 knots in first-year level ice, which is 1.0 m thick covered with 20 cm of snow.
"Snow-covered ice increases resistance due to higher friction," project manager Lars Snellman explains.

"The ship's ice class will officially be PC 4, according to DNV's classification, but the hull will be strengthened above and beyond that to withstand the harsh conditions encountered on the way to Belgrano II, " Snellman adds.

## Prepared for emergencies

An added special feature is the readiness for emergency situations. If needed, the vessel will have the ability to overwinter while beset in ice. While most of the personnel would be transported off the ship by helicopter, the vessel will have enough fuel and provisions for a skeleton crew to maintain the vessel until the spring thaw.

Ice model tests were performed at Aker Arctic during the concept design. Recently, open water tests, including manoeuvring and seakeeping tests, were performed at SSPA in Sweden. Full-scale ice trials will be conducted after the vessel has been built.

The plan is to upgrade Tandanor Shipyard's facilities in Buenos Aires in order to build the new polar logistics vessel in Argentina. At present, the construction schedule is not yet confirmed. ■