Xue Long 2 in successful ice trials

Sami Saarinen from Aker Arctic spent three weeks onboard *Xue Long 2* to observe and assist with the full-scale tests in Antarctica, as well as to ensure that the vessel meets all the client's expectations.

China's new polar research icebreaker, *Xue Long 2*, was delivered at Jiangnan Shipyard in China in July 2019. Her maiden voyage took the vessel to Hobart, Australia, from where she continued on her first ice mission to Antarctica together with China's other polar research vessel, *Xue Long*, delivering equipment and supplies to the Chinese research stations.

Saarinen boarded *Xue Long 2* in Hobart on the 7th November 2019 for the two-week-long journey to Prydz Bay where the tests were performed near the Zhongshan research station. Close to Prydz Bay, where the ice conditions became more severe, *Xue Long 2* sometimes assisted *Xue Long* in ice.

Heavy ice conditions

Most of the journey was sailed in open water until a few days before arriving at the destination, when the scenery changed to an icy one with snow-covered ice fields and icebergs.

At Prydz Bay, the level ice measured 1.4 metres thick with a dense, 35 to 40-cm-thick cover of significantly packed snow. Tests in both ahead and astern directions showed that the vessel fulfils its design targets.

In addition to testing, *Xue Long 2* assisted *Xue Long* in reaching close to the research station. During previous years, this logistics operation had taken place 6 to 8 weeks later when the ice situation became







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easier. This year, with the help of the new and extremely-capable polar-research icebreaker, the operation could be performed much earlier in the season.

Capability validated

The cargo was unloaded by helicopter from *Xue Long* and, by reaching close to shore already at this time of the year, the distance was shortened. The results were improved efficiency and fuel savings.

"Our client could immediately appreciate the benefits of the new vessel," says Project Manager Kari Xue Long and Xue Long 2 in Antarctica. Photo courtesy of PRIC.

Laukia. "Xue Long 2 performed splendidly at the actual task she was designed and built for, which is an excellent validation for the vessel's operational capability."

Climate research

During the two weeks at Prydz Bay, Saarinen also had a chance to visit the Antarctic continent and the Zhongshan Station, China's second Antarctic research station opened in 1989. Zhongshan Station is a base for research into marine, glaciological, geological, and atmospheric sciences, and for expeditions inland. "The comfortable research station is equipped with impressive research equipment, such as high antennas over a large area. There are narrow roads and even an airstrip, which small planes can land on," he says.

Nearby is also the Russian research station Progress.

After the unloading and testing was finished, Saarinen returned back to Hobart onboard *Xue Long*. He reached Helsinki just in time to celebrate Christmas with his family.





State-of-the-art equipment

Xue Long 2 continued onwards along the Antarctic coast to the south of the African continent to perform ocean science measurements, another of her design missions. The team of scientists on-board have access to the most modern scientific equipment currently available.

"The laboratory and moonpool areas are remarkable. Additionally, the propulsion system with two Azipod units is exceptional for an ice-going research vessel," Saarinen adds.

The next ice-covered destination will be the Arctic area.

Successful project

"The new ship allows a new dimension of flexibility in terms of scheduling and areas of operation, as the icebreaking capability of *Xue Long 2* is much higher than that of the old vessel," Laukia highlights. "*Xue Long 2* can reach considerably closer to the research stations earlier than previously. This was the design target, which was also achieved." *Xue Long 2* additionally showed her manoeuvring capability while dislodging *Xue Long* stuck in ice en



Zhongshan Research Station is a base for research into marine, glaciological, geological, and atmospheric sciences, and for expeditions inland.



Sami Saarinen travelled six weeks from Hobart to Antarctica and back.



route, and assisting the other vessel during the cargo unloading.

"This successful project is a good base for continued cooperation with our Chinese partners," Laukia says.

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