

Full-scale trials for R/V Sikuliaq



Last winter, AKAC performed full-scale trials of the research vessel Sikuliaq in the Bering Sea to conduct ice operational training of the officers and to identify the ice operational performance and limits of the vessel. Juha Varis, an experienced Finnish icebreaker captain, assisted with the hands-on training.

The Sikuliaq has a suite of on-board sensors and equipment to allow it to perform a number of science missions in ice.

Sikuliaq is a research vessel based in Alaska. It is owned by the National Science Foundation and is operated by the School of Fisheries and Ocean Science at the University of Alaska Fairbanks. Its intended area of operation is year-round in the Bering Sea, and seasonal operations in the Beaufort and Chukchi Seas. It is designed to break 76 cm (2½ ft) thick first year winter ice continuously at 2 knots.

Prior to the full-scale trials, AKAC developed an Ice Operations Manual for the vessel, which included developing guidelines for conducting science operations in ice including towing operations and deployment science equipment over the side in ice. The operational experience and performance data obtained from the trials was used to revise the manual.

Part of design group

"We were also part of the design group for the vessel long before it was built," says Mike Neville, head of AKAC's St. John's office in Canada.

"It was AKAC's responsibility to develop the design for the purposes of enhancing its operational capabilities in ice. During the design process, the Sikuliaq was model tested several times, including in 2002 at Kvaerner Masa-Yards Arctic Technology Centre (prior Aker Arctic facility) and also in 2009 by Aker Arctic's new test facility."

Another part of AKAC's role was also to introduce new arctic marine technologies and methods to achieve an independent capability to conduct various science missions in ice. The vessel uses advanced azimuth thruster technologies, which increase its ability to operate

independently in ice, and applies azimuth thruster wake to expand its science capabilities in the presence of ice.

Main dimensions

Length Overall	79.7 m
Maximum Beam	15.8 m
Draft	5.8 m
Displacement	4,066 tons
Propulsive Power	2 × 2,238 kW Wärtsila Icepod thrusters

Meet Mike Neville

Mike Neville is a Naval Architect with AKAC (Aker Arctic Canada). Having worked with AKAC during his undergraduate degree in 2006 and 2007, Mike started working fulltime with AKAC in 2010 as head of the St. John's NL office. Since receiving his Bachelor's Degree in Ocean and Naval Architectural Engineering at Memorial University in

Canada, he has worked exclusively on arctic marine and ice offshore related projects, including technical feasibility and concept design studies, ice model tests, full scale trials and ice management operations.

In his free time, Mike likes to spend time outdoors camping, fishing and hunting. He also enjoys travelling.

