



New online ice model test service

Model testing services have continued as usual despite the coronavirus pandemic. Clients can now observe ice model tests online over a secure connection, and discuss the tests and outcomes with our icebreaking specialists

Throughout spring and summer, Aker Arctic's ice model testing laboratory has continued working full-time on model testing projects. As clients have not been able to attend tests in person, a unique online video streaming service has been developed.

"Under normal circumstances, we shoot videos of all our tests using three cameras," says Topi Leiviskä, Head of Ice Model Testing. "We decided to combine the videos to an online feed which we share with customers through a secured Microsoft Teams link."

Fourth camera added

During testing, the vessel model is filmed from above, from the side and from below the vessel. A fourth camera has recently been added which shoots through the glass bottom of our model test basin below the vessel. This allows us to follow simultaneously how both the bow and the stern of the model behave in ice.

"The video footage is stitched to a four-picture composite, and customers can see all angles of the vessel model simultaneously during the entire test from the safe comfort of their own offices," Leiviskä explains. "Additionally, there is a chat feature for immediate questions, comments and response."

Safe streaming

All tests performed have been successfully streamed to customers, except in one case where the customer's firewall bounced the signal back. A solution to this is under process.

Microsoft Teams has so far proven to be a safe platform for streaming, but other options are also being discussed.

"With a higher number of viewers, we might move to a solution where we stream from our own server. Information security is our priority, so this has to be put in place first. According to our IT-experts, as many as 30 viewers at a time could easily be achieved."

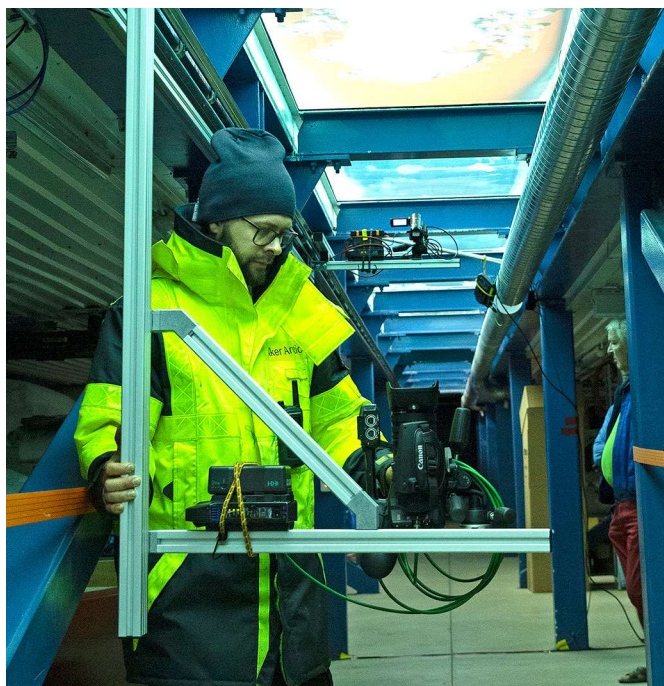
Added value

Leiviskä does not believe that the online service will completely replace onsite visits to the ice laboratory once the situation returns to normal.

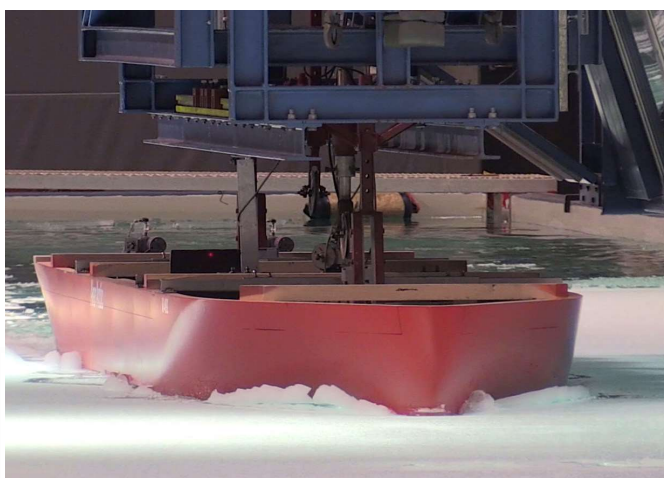
"To actually experience the cold atmosphere in the basin gives a very realistic feel to the project," he says.

However, the online service gives an added benefit to customers, who want to follow the tests from their own office and allows more people to easily see the tests.

"A few people could arrive onsite, and the rest watch online. Whatever the arrangement, it is much easier to discuss the outcomes when all participants have actually seen the tests, instead of only reading reports."



Shooting through the unique glass bottom in Aker Arctic's model testing basin, a recently-added fourth camera allows us to follow how both the bow and the rear of the model behave in ice. Toni Skogström manages the streaming.



Helsinki Shipyard was one of the first customers to utilise Aker Arctic's online streaming service of ice model tests.

Customer experiences of the online service

Aker Arctic performed ice model tests for Helsinki Shipyard this past spring when the ice capabilities of a research cruise vessel were investigated.

Due to COVID-19, visitor restrictions were in place at Aker Arctic and distance working was encouraged at Helsinki Shipyard. Therefore, the ice model tests were followed from home offices making use of Aker Arctic's newly developed online service.

"Supervising the tests remotely from the online connection worked surprisingly well," says Timo Kukkanen from Helsinki Shipyard.

Kukkanen has since suggested some improvements to the service concerning how some data could be presented, but is very positive about the overall experience.

"At Helsinki Shipyard we will definitely continue using the service into the future whenever possible, even without any pandemic restrictions. Part of the group could follow tests online and part onsite." ■



Ice-friction tests of hull coatings were performed last spring, and streamed online to both the customer and the Russian Register of Shipping (RS). The tests had to be performed at -20°C and Aker Arctic therefore developed a special measurement rig for the purpose, inspected and approved by RS.

First friction tests for icebreaker paints

Aker Arctic has developed a new method for measuring friction between ice and painted steel plate. The first class-approved tests have now been conducted.

Last year, the Russian Maritime Register of Shipping (RS) changed their regulations regarding paint for ice-going ships. Thinner steel plating on the ship hull is allowed if an approved protective hull coating is used. To qualify as an approved paint, a series of tests regarding hardness, durability and friction needs to be performed.

"The ice friction tests have to be performed with test specimens cooled down to -20°C . We have developed a special measurement rig for this purpose, inspected and approved by RS," Naval Architect Mikko Elo explains.

"Both our customer and a representative of RS followed the actual tests through our newly developed online streaming service." ■