

# Installation of the Wärtsilä Airguard stern tube seal system

## CASE STUDY



In late 2016, Wärtsilä Shaft Line Solutions received an urgent request to install a new stern tube seal system for the 'Amazon Conqueror'. This was to ensure the vessel was compliant with the Environmental Protection Agency's Clean Water Act so it could work in US waters. Therefore, a seal system with Vessel General Permit (VGP) was required.

Then in early 2019, we overhauled its sister ship, the 'Amazon Warrior'. Which means we've now fitted seven out of eight of Shearwater's vessels, all of which are seismic vessels that do research in environmentally sensitive waters. All seven vessels have been fitted with the Wärtsilä Airguard system to enable them to operate in sensitive waters.



### THE ANALYSIS

Since the Amazon Conqueror's vibration was affecting the efficiency of the existing seals, it was decided to install the Wärtsilä Airguard system, which is VGP certified and able to withstand vibration. The Wärtsilä Airguard is an anti-pollution lip type seal, which is especially designed for applications where extra security against the leakage of oil into the seawater is required. It completely separates the stern tube oil from the seawater by an air barrier. Any seawater and/or oil entering the air barrier chamber is automatically drained inboard without leaking outboard or entering the stern tube.

## Installation of the Wärtsilä Airguard stern tube seal system



### THE CHALLENGE

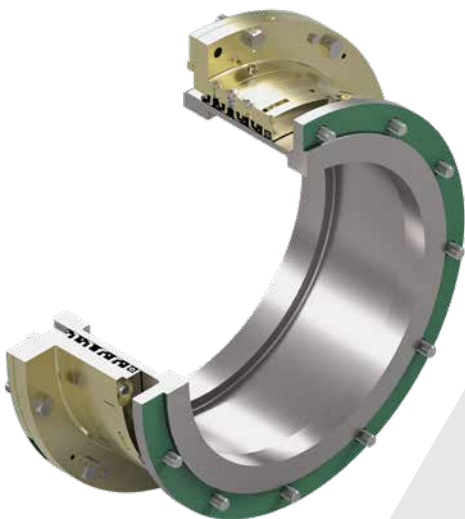
The vessel had a limited docking window of just 5 to 6 days, meaning that the upgrade needed to be completed within that time. Precise planning was therefore required in order to meet this demanding schedule. At the same time, the logistics for delivery of the needed parts had to be exact as delivery of all upgrade equipment was required following a direct passage between pre survey in Gibraltar and the docking in Singapore.

### CONCLUSION

While 6 days had been reserved for this work, it was completed in only 4½ days. The Wärtsilä Airguard solution solved the customer's issue with the existing seals, thus allowing the ship to operate without restrictions in US waters. The Wärtsilä Airguard seal system is in full compliance with environmental legislation since the stern tube oil is safely protected from leaking into the sea.

### FEEDBACK

The customer was extremely satisfied and impressed with Wärtsilä's efficient handling of this challenging task. Since installation, the Wärtsilä Airguard system has operated without incident.



### OVERHAULING THE AMAZON WARRIOR

After a visual inspection of the sister ship to the Amazon Conqueror, we noticed that the liner had severe grooving. This required it to be reworked in a short timeframe. Our engineers performed machining and polishing of the propeller shaft, extending its lifecycle a further 10 years, as well as saving time and money for the customer. An integrated pump unit was also installed and was compatible with the existing Wärtsilä Airguard system. A quick installation, along with mineral oil rather than bio oil, meant even greater cost savings for the customer.

[wartsila.com/shaft-line-solutions](https://www.wartsila.com/shaft-line-solutions)

WÄRTSILÄ® is a registered trademark. Copyright © 2020 Wärtsilä Corporation. Specifications are subject to change without prior notice.

07 / 2020



WÄRTSILÄ