Powered by the wind

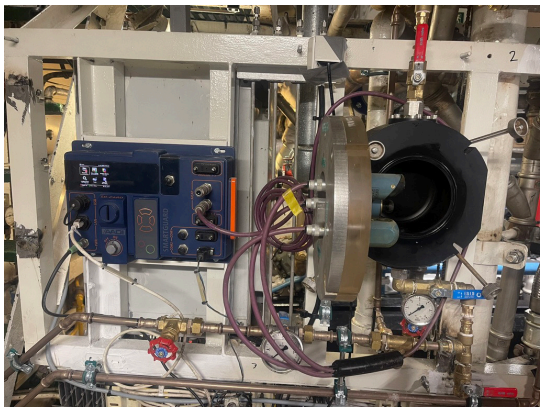
Sailing tradition meets advanced research aboard a 100+ year-old sailing ship

Sailing ships and ocean data - a tradition continues

For decades, sailing ships traversed the world's oceans, gathering crucial information about winds, currents, and weather patterns. The recorded observations, lead to the creation of routening charts that helped future generations to take safer and more efficient routes across the seas.

Statsraad Lehmkuhl, the iconic tall ship is the heart of the One Ocean expedition, carries forward this tradition. While honouring the legacy of those who sailed before, the ship now collects not only navigation and weather data but also a wide range of ecological and environmental information. Measurements that are important for understanding the changing conditions of our oceans and for spreading knowledge and engagement about our blue planet.

Statsraad Lehmkuhl navigating rough seas


FerryBox system installed in the engine room of Statsraad Lehmkuhl.

Modern Measurement Tools: From Continuous Underway Sensing to Water-Column Profiling

The equipment aboard Statsraad Lehmkuhl showcases how technology has advanced in oceanographic research. A continuous surface-water monitoring system, ferry box, tracks key parameters such as oxygen, salinity, temperature, particles and chlorophyll, providing real-time insight into water quality (Fig.1). This steady stream of observations helps scientists follow shifts in surface conditions and relate them to weather and ocean dynamics.

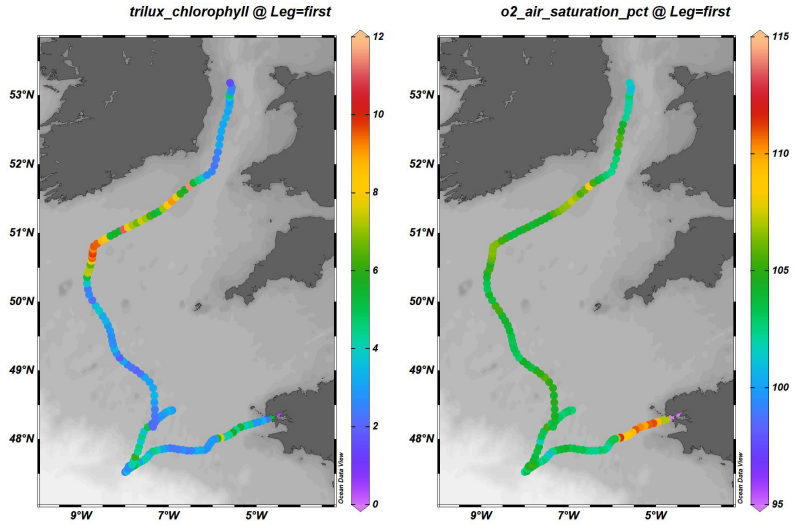


Fig.1: Combined chlorophyll (in µg/l) and air saturation (in %) measurements illustrate spatial variability associated with ongoing algal bloom activity along the transect between Brest (France) and Dublin (Ireland).

Complementing these surface measurements, an echosounder and Acoustic Doppler Current Profiling instruments (ADCP) provides information about what lies beneath the surface, mapping currents and the extent of biological layers in the water column to build a three-dimensional view of the underwater environment.

For targeted snapshots through the water column, two systems are used: a compact self-logging CastAway instrument and a cabled sensor and water sampling system deployed to 1200 m, measuring parameters similar to the FerryBox and enabling discrete water sampling for laboratory analysis (Fig. 2).

Fig 2: On-board demonstration of cabled measuring and water sampling systems.

Statsraad Lehmkuhl: Ambassador of Bergen and of Maritime Traditions

Beyond its scientific mission, Statsraad Lehmkuhl serves as a proud ambassador for Bergen, Norway. The ship has made it possible for generations of people to experience life and work aboard a tall ship, fostering an appreciation for maritime heritage. Whether through educational expeditions, with a paying crew, or research voyages, Statsraad Lehmkuhl continues to inspire new explorers and connect communities to the wonders of the sea.

During a voyage between Brest (France) and Dublin (Ireland) the crew of about 140 persons from 12 different countries experienced a variety of conditions from magic nights with stars to being hit by the storm Dave (Fig. 3) with measured wind speed above 34 m/s (66 knots).

The voyages on-board Statsraad Lehmkuhl gathers people from multiple generations, 15-70 years, with different backgrounds and talents that live and work together on watches to make the ship reach new interesting destinations.

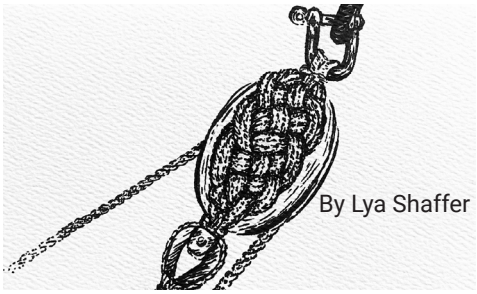


Fig 3: Rough conditions during Storm Dave, with wind speeds above 34 m/s.

Rig climbing on Statsraad Lehmkuhl during sail manoeuvres.

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