# Crane ship testing: ensuring safety and operational efficiency in heavy lifting

Testing a crane ship's 1,000 ton and 200 ton hoists poses major challenges, including strong currents and complex rigging. Discover how innovative solutions like water filled pontoons ensure safe, efficient testing with minimal downtime.

As offshore cranes continue to grow in size and lifting capacity, their maintenance and testing become more complex and specialized. Commissioning and load testing are critical to confirming operational limits, ensuring safety, and maintaining efficiency. Euro-Rope Netherlands, a leading crane maintenance and lifting solutions specialist, was tasked with the recommissioning and functional testing of a 1,000 ton main hoist and a 200 ton auxiliary hoist on a crane ship. This meticulous operation was executed to ensure the vessel's lifting capabilities met stringent industry standards.

### Comprehensive planning for safety and efficiency

Euro-Rope Netherlands, in collaboration with the client, developed a structured and efficient plan to conduct the maintenance and testing with the highest safety standards. The operation was supervised by notified bodies, ensuring compliance with all regulatory requirements. To facilitate the load test, essential equipment was sourced from Safe Lifting Europe, a rental specialist in heavy lifting and offshore material solutions. Both companies are part of the MWO² Group, renowned for expertise in offshore lifting and hoisting technology.

### Technical expertise in handling crane wires

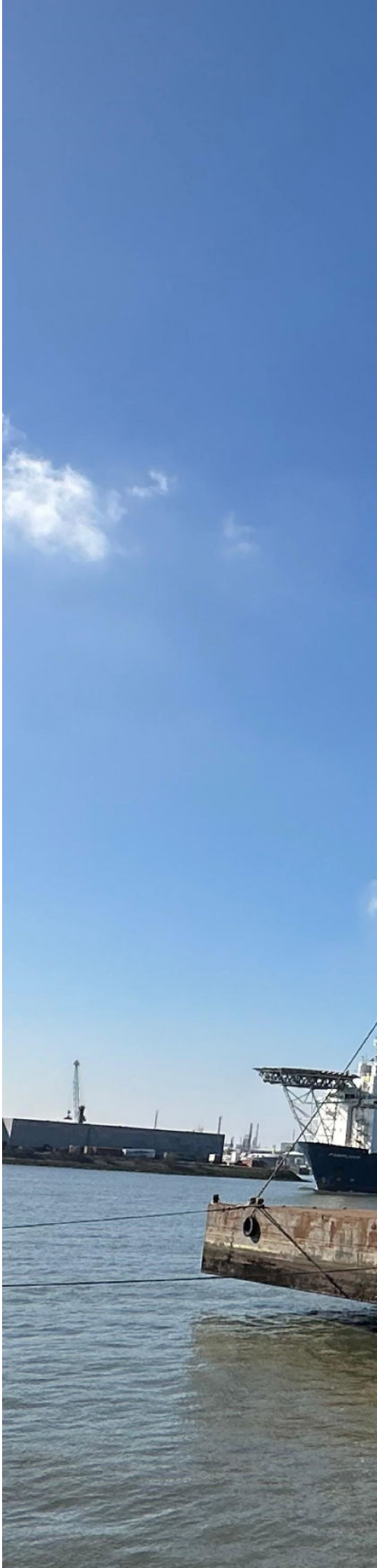
With the largest fleet of rigging and spooling machines in the sector, Euro-Rope Netherlands has developed specialized solutions to manage the largest and heaviest crane wires used in offshore lifting operations. Its expertise extends to precision spooling, tensioning and installation of high-performance crane wires, ensuring maximum safety and operational efficiency.

Its fleet includes state-of-the-art wire rope tensioning equipment capable of handling ultra heavy duty applications. Advanced machinery allows for controlled and even winding of crane wires, preventing common issues such as uneven layering and excessive wear. This ensures that crane systems on wind lift vessels remain in peak operational condition, reducing downtime and enhancing performance.

The company also provides comprehensive crane wire inspection and certification services. Their team of specialists conducts magnetic rope testing (MRT) and visual inspections to detect any internal or external flaws in the wires. This proactive maintenance approach ensures compliance with international safety standards and extends the lifespan of crane wires used in offshore and heavy lift operations.

### Part 1: testing the 1,000 ton main hoist

The first phase of testing focused on the crane's main hoist, which required a reliable and effective load test setup. A test pontoon, filled with water to precisely 1,000 tons, was selected as the load. The complete rigging configuration was preassembled at Safe Lifting Europe's

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facility and transported to the test site at Schiedam Offshore Harbour. This approach ensured a streamlined and efficient setup, reducing time on site and optimizing safety.

The rigging system incorporated a 1,250 ton load shackle with a four leg lifting arrangement using high performance Dyneema slings. They were preferred due to their superior strength-to-weight ratio, offering a safer and more efficient alternative to traditional steel grommets. The use of a test pontoon, rather than traditional road transported test weights, provided a practical and cost-effective solution for dynamic and static load testing.

The testing location presented additional challenges due to strong tidal currents from the North Sea and fluctuating inland water currents. To mitigate these challenges, a detailed tidal analysis was conducted by the crane ship's captain. Once the pontoon was filled, a tugboat was used to precisely position it under the crane, ensuring optimal test conditions.

The test itself involved multiple lifting movements in both horizontal and vertical directions to simulate real-world operations. Every movement was closely monitored to confirm that the crane could operate safely at full capacity while adhering to the highest safety protocols.

### Part 2: testing the 200 ton auxiliary hoist

For the auxiliary hoist test, a set of water bags was used as the test load. Safe Lifting Europe provided all necessary equipment, including load cells, water bags, and pumps. The use of water bags eliminates the need for heavy test weights to be transported by road, offering a more flexible and efficient testing approach.

The water bags were gradually filled above the waterline using a pump mounted on the pontoon, allowing precise control over the load during testing. As with the main hoist test, multiple lifting movements were conducted to assess the auxiliary hoist's performance under various conditions.

### Pretest planning and safety protocols

Prior to testing, Euro-Rope Netherlands facilitated multiple safety briefings and toolbox meetings with all involved parties, including the crane ship crew, engineers, safety officers, and the tugboat captain. Safety remained the top priority throughout, with all stakeholders aligned on procedures and emergency protocols.

Meticulous planning ensured that the test was executed efficiently, with minimal downtime for the crane ship. The ability to rent specialized heavy lifting equipment played a crucial role in achieving this goal by providing immediate access to high-quality, well-maintained equipment.


### Achieving the test objectives: precision, safety and efficiency

The primary objective of the test was to confirm that both the main and auxiliary hoists could safely handle their maximum rated capacities. By employing modern testing methodologies, including a water filled pontoon and water bags, the company successfully conducted the tests with minimal disruption to the vessel's operations.

The partnership with Safe Lifting Europe enabled Euro-Rope Netherlands to optimize testing efficiency, reduce logistical complexities, and ensure the availability of state-of-the-art equipment. This collaboration reinforced their shared commitment to excellence in the offshore lifting industry.

### A proven partnership in offshore lifting

This project highlighted the strong collaboration between the two businesses. Initially specializing in crane maintenance and steel wire ropes, Euro-Rope Netherlands has evolved into a full-service lifting solutions provider. Safe Lifting Europe has become a leading supplier for hiring heavy lifting equipment, with a 20,000 m² facility dedicated to offshore and heavy lift operations.

Safe Lifting Europe offers an extensive inventory of certified lifting and rigging equipment, including modular spreader beams, heavy duty slings, shackles, and water bags for load testing. The company also provides engineering support and custom lifting solutions, ensuring that every project is executed with precision and safety. Its commitment to quality control and compliance with international safety standards has made it a trusted partner for offshore lifting and construction companies worldwide. By maintaining a vast stock of high-quality lifting gear and offering rental solutions, it ensures that clients have access to the best equipment for their heavy lift operations.

Both companies, as part of the MWO² Group, have established themselves as trusted names in the maritime heavy lift and crane maintenance sectors. Their expertise in engineering, safety compliance, and operational efficiency makes them go-to partners for offshore lifting solutions.

### Conclusion: setting the benchmark for excellence

As offshore crane ships increase in scale and complexity, specialized maintenance and rigorous testing become more critical than ever. The successful recommissioning and load testing of the 1,000 ton main hoist and 200 ton auxiliary hoist demonstrated Euro-Rope Netherlands' expertise in executing high stakes offshore lifting projects.

Through meticulous planning, innovative testing solutions, and strong industry partnerships, the company sets the benchmark for excellence in offshore lifting and crane maintenance. This case study underscores its reputation as a trusted leader in the maritime industry, ensuring safety, efficiency, and operational reliability in heavy lift and offshore crane operations.

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