

Shaft alignment keeps cruise liners in operation



Three cruise liners belonging to MSC Cruises began to experience some serious issues regarding overheating and stern tube bearing wear as a result of shaft line misalignment. However, thanks to the Wärtsilä Seals & Bearings team - who provided alignment services and new composite bearings - the cruise vessels are now back in operation. “In my opinion, the most important benefits are that the vessels are in operation serving our passengers and keeping the schedules,” says Vincenzo Cirillo, Superintendent, Engine Technical Department at MSC Cruisetech.

The Mediterranean Shipping Company (MSC) was founded in 1970. Since then, MSC has grown to become a world leader in global container shipping, operating a fleet of over 465 vessels. In 1988, MSC entered the cruise business and is now the fourth largest cruise line and largest privately-owned cruise company in the world, as well as a market leader in the Mediterranean, South America and South Africa. MSC Cruises is a

Swiss-based Italian company operating a global fleet of 12 cruise liners, with four more under construction and an additional six already ordered. The company employs 15,000 staff around the world and is present in 45 countries.

OVERHEATING IN BEARINGS DELAYS CRUISE LINERS

The technical crew of the vessels Fantasia and Splendida started to

CHALLENGE

- Eliminating overheating issues from the stern tube bearings
- Improving the vessel's safety, reliability and passenger comfort

SOLUTION

- Installation of Wärtsilä Sternsafe oil-lubricated composite stern tube bearings and shaft alignment by in-situ machining of the new bearings.

BENEFITS

- No high temperatures, stress or vibrations in the stern tube bearings
- Higher reliability and safety
- Higher passenger comfort level

“THE WORK WAS COMPLETED WITHIN THE DOCKING SCHEDULE AND WÄRTSILÄ’S PEOPLE DID A GOOD JOB.”



notice constant high temperatures in the stern tube bearings. This affected the operations and had consequences for the schedules.

– When the overheating occurred, the vessels had to reduce the rpm on the shaft. The vessels were, however, able to continue their voyages, but it was very hard to keep to the schedules. Sometimes there were also delays, which of course affected the passengers, says Mr Cirillo.

Alignment issues can be hard to detect, and can often go unnoticed for long periods of time. If not promptly dealt with, the stress and vibrations caused by misaligned rotating equipment can lead to wear and breakdowns in the shaft assembly. In the MSC Cruises case, the misalignment caused overheating and wear on the bearings.

SHAFT ALIGNMENT AND BEARING INSTALLATION

MSC Cruises contacted Wärtsilä and were offered alignment measurements and in-situ machining

services to solve the bearing overheating issues. Eventually the vessels Fantasia and Splendida were dry-docked at the Fincantieri shipyard in Palermo, Sicily and new bearings could be installed.

Wärtsilä’s scope of delivery for MSC Cruises consisted of removing the propeller and the shaft, including shaft alignment services conducted using patented gyro laser technology. The alignment work and installation of the new bearings all went according to plan.

– There were no problems with the alignment work or changing the bearings. The work was completed within the docking schedule and Wärtsilä’s people did a good job, says Vincenzo Cirillo.

Wärtsilä replaced the old stern tube bearings with new Wärtsilä Sternsafe oil-lubricated composite bearings. The bearings were supplied

semi-finished and were aligned by in-situ machining. For MSC Divina, the problem was already discovered and fixed in the building phase during the sea trials.

In conclusion, Vincenzo Cirillo says that MSC Cruises has had only good experiences with the work done by Wärtsilä. Everything has worked as promised.

– For us it is important to have satisfied passengers. Now when the vessels are back in normal operation and are able to keep their schedules, we can ensure that. Therefore, I would gladly recommend others with similar kinds of problems to contact Wärtsilä.

Get in touch and check if your propeller shaft is aligned. Contact us at sealsandbearings@wartsila.com