

Case Study

Electro Mechanical Services



Summary



Industry:	Marine
Application:	Condition Monitoring
Actual Saving:	£maintenance and Premature Failures
Payback Period:	Undisclosed



Marine Swing Up Thruster

Onboard survey involving expert Condition Monitoring staff

ISSUE

ERIKS UK are working closely with maintenance and reliability engineers within a large shipping company, specifically with their fleet of offshore diving vessels.

ERIKS UK were invited to tender along with other large condition monitoring companies to supply experience, competent and certified condition monitoring engineers to carry out Vibration Analysis, Thermal Imaging and Acoustic Emissions Surveys onboard their fleet of Diving Support Vessels (DSV) across a variety of machinery. Through our previous and documented experience, knowledge of the industry and quick response times, we were awarded the Frame Work Agreement.

The initial specification and work scope was to sail with the vessel over a two week period and detail all rotating and reciprocating machines, write a vibration analysis databases for each of the marine, deck and dive spreads and collect the vibration signature datum point. On initial data collection and analysis on one of the main drive motors for the Swing-Up Thruster it was found to have higher than expected amplitudes. Further analysis of the vibration spectral data highlighted fault frequencies associated with the drive motors DE bearing.

OUTCOME AND BENEFITS

The continued monitoring and trending of the vessels has allowed downtime to be avoided which could have large financial repercussions.

As a result of ERIKS success onboard during the monitoring period, ERIKS UK are now carrying out condition monitoring across the clients fleet and have installed an on-line vibration monitoring system on the main Propulsion Thrusters.

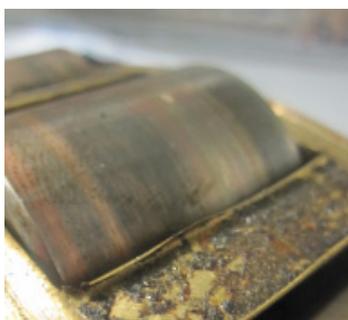


SOLUTION

Further discussions highlighted the bearing had only been replaced a matter of months ago and had previously only lasted a matter of hours after major overhaul.

It was decided to uncouple the drive motor from the Thruster for investigation, on dismantling the coupling it was found that the coupling assembly had not been carried out correctly nor had the correct amount of torque applied to the fixing bolts.

Once the coupling was re-assembled as per OEM specifications further vibration testing was carried out and highlighted a drop in overall amplitudes and fault frequencies.



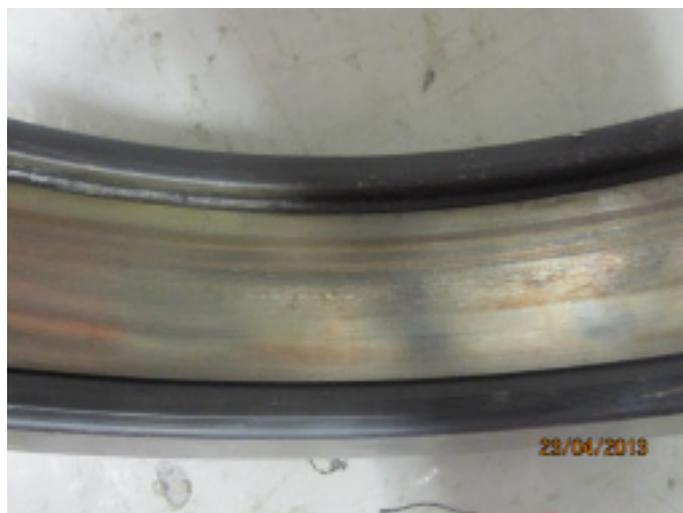
Bearing images of initial failure after a matter of hours

Since the initial survey further scheduled monitoring of the thruster has revealed that the vibration signature is remaining steady and there has been no further increase in amplitude of the fault frequencies.

Through condition monitoring and the knowledge and experience of rotating equipment through the client and ERIKS UK it prevented an unnecessary reaction to automatically replacing bearings before investigating the cause of the issue. The continued vibration monitoring and trending has allowed the condition and deterioration rate to be monitored and prolonged the life of the bearing.

By the use of the correct condition monitoring techniques and experience ERIKS UK prevented “off hire” losses which could have lead to a possible impact on reputation, unscheduled docking expenses and not to mention the cost of material and labour to replace the bearing.

“For the past eighteen months ERIKS UK has been providing condition monitoring services to our fleet of vessels under a framework agreement. The services provided include Vibration Analysis; Acoustic Emissions; and Thermography.



Throughout the period of the framework agreement, ERIKS UK has always been able to provide a Condition Monitoring Engineer on request to attend the vessels, often in remote locations and at short notice.



Vibration spectral and overall data before and after investigation and repair

A particular point of note has been their dedicated point of contact throughout both the initial set-up of the Condition Monitoring program and the ongoing data collection, analysis, trending and reporting.”

Gordon Phillip - Bibby

MORE INFORMATION

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