

# Cylmate® Diesel Engine Performance Monitoring system successfully installed in M/V Malmö Link, Sweden

ABB's Cylmate® Diesel Engine Performance Monitoring system is the most advanced system for continuous diesel engine performance monitoring. A unique combination of measurements of cylinder pressure and crankshaft position plus advanced mathematical modeling of the engine provides very accurate, real-time data for monitoring and diagnostic analysis. The quality of the data ensures very significant benefits from improved reliability and reduction in operating costs.

## M/V Malmö Link – Cooling of fuel valve

The jumbo carrier M/V Malmö Link had a problem with cylinder no 5 on the starboard main engine. For all loads, except for fuel load, the cylinder-no5-pressure was significantly lower than in the other cylinders. After having changed the fuel valve, initially the pressure was OK, but after about eight hours the problem with the low pressure was back...

With a portable, non-continuous system, you normally carry through the measurement at full load. In this case, when the problem occurred at low load, it is very hard to detect and analyze the problem and trace the source of error. But, with the continuously monitoring Cylmate System the crew just about immediately could identify the problem. It derived from a blocked up cooling tube, see **Picture 1**. After the tube was changed the engine went back to normal and kept running smoothly.



Picture 1



Picture 2

Taking a look at the corresponding **Picture 2**. Here the Cylmate Operator Station shows the trend data for a 9-hour trip between Travemünde, Germany and Malmö, Sweden. The data displayed is the engine speed and the pmax for cylinder no 4, 5 and 6. The red graph (cylinder 5) indicates that, at low engine speeds, there is a great risk for imperfect combustion due to bad cooling of the fuel valves. The changing of the cooling tube eliminated the source of error.

We can take the pressure – continuously

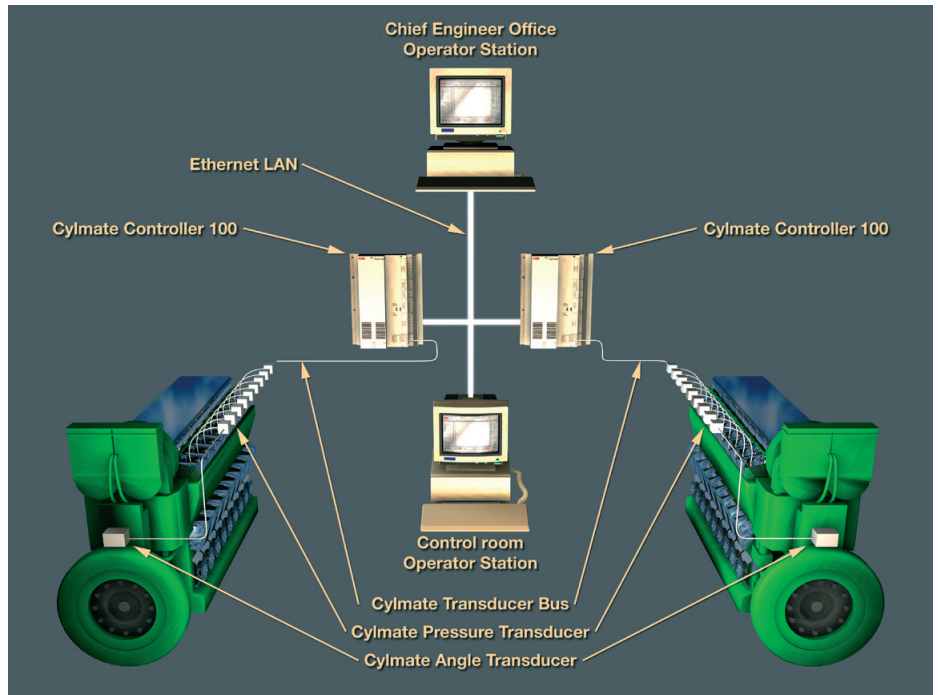
## The Cylmate® System raises the quality of the performance data and analysis to a completely new level with:

- Increased operational safety
- Better maintenance planning
- Ease of technical reporting
- Longer life of components
- Early detection of faults
- Higher fuel efficiency

### Configuration overview of the Cylmate® System, installed in M/V Malmö Link

This Cylmate retrofit installation, effected during a few days voyage, was made very simple due to the concept of fieldbus and multidrop connection.

The Cylmate Controllers, which take care of the engine monitoring, are fully independent of each other. Only the PC-based operator Station is common for both engines.



### A proven concept: Freight-ferries between Sweden and Germany

Since 1982 the Swedish shipping company "Rederi AB Nordö Link", have maintained a successful cargo service between Malmö in Sweden and Lübeck-Travemünde in Germany. Eight departures a day form the basis of a reliable and punctual service between Sweden and the European Continent. The day and nighttime departures for lorries, trailers, containers, wagons and combined traffic make the Nordö Link shipping company a competent partner for many international clients.

The jumbo carriers "Malmö-Link" and "Lübeck-Link" can load about 2,700 lane meters for all kinds of different roro cargo. Lorries, trailers, containers, swap bodies or wagons can be loaded via ramps on a total of four decks – quickly and competent. From the year of 2003 the vessels "Finnarrow" and "Finnsailor" are the third and fourth vessels in this traffic.

During the harbor time of only three hours there are only 54 seconds per unit available for handling. Precision and a qualified staff are indispensable in the modern Baltic ferry traffic. Nordö-Link – for safe and fast transports.

Contact us

#### ABB AB

Force Measurement  
S-721 59 Västerås, Sweden  
Phone: +46 21 32 50 00  
Fax: +46 21 34 00 05