

# Used oil analysis helps extend piston overhaul interval to reduce costs

"K" Line Ship Management (Singapore) | MAN K98ME | M/V Hamburg Bridge

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Scrape down oil analysis, in combination with Mobilgard™ 560 VS cylinder oil, extended the engine's piston overhaul period to more than 20,000 hours. This type of result can support reduced overall operating costs and associated downtime.

## Situation

The MAN K98ME engine in "K" Line Shipping's vessel M/V Hamburg Bridge was operating under very challenging continuous ultra-slow steaming conditions at a load ranging from 14-48% Maximum Continuous Rating (MCR). The average sulphur content of the bunkered fuel was 2.5%.

## Recommendation

ExxonMobil helped "K" Line Shipping implement Mobil Serv<sup>SM</sup> Cylinder Condition Monitoring scrape down oil analysis in combination with Mobilgard 560 VS, a 60 BN cylinder oil designed to provide outstanding performance in crosshead engines running fuel with sulphur content of between 0.5-4.0%.

To monitor the condition of the engine's cylinders, engineers regularly collected scrape down oil samples, which were comprehensively tested and analysed at ExxonMobil's Mobil Serv<sup>SM</sup> Lubricant Analysis laboratory. Onboard test equipment and analytical tools were leveraged to monitor the condition of the engine's cylinders.

## Impact

After 20,000 hours the engine's pistons and piston rings were free of deposits and exhibited negligible wear. This was achieved with a fixed cylinder oil feed rate of 0.90g/kWh. "K" Line Ship Management safely extended the M/V Hamburg Bridge's piston overhaul period by 25% more than the manufacturer's 16,000 hour recommendation, which helped reduce maintenance costs and associated downtime.

Piston overhaul period extended  
by 25%



After 18,833 running hours without ever having a piston overhaul, this Kawasaki-MAN B&W 12-cylinder K98ME engine's pistons and piston rings were free of deposits and exhibited negligible wear.