SHIP OWNER SAVES $113,000 A YEAR BY SWITCHING TO SHELL ALEXIA S6

Berge Bulk Maritime Pte Ltd, one of the world’s leading, independent dry bulk carrier owners, operates and manages more than 40 safe and fuel-efficient vessels ranging in size from 34,000 to 388,000 deadweight tonnage.

In 2014, Berge Bulk Maritime informed Shell that there were indications of cold corrosion on the surfaces of the cylinder liners of four of its vessels, which were using a BN 60 cylinder oil in their Wärtsilä RT-Flex 84 TD engines. The company was also keen to reduce the consumption of cylinder oil to lower its operating costs.

Shell suggested trialling Shell Alexia S6 (BN 100) cylinder oil on the four vessels, as this engine design is known to be sensitive to cold corrosion, so a higher base number cylinder oil is recommended to address this issue. An average base feed rate (1.05 g/kWh) was determined for the BN 60 cylinder oil for all four vessels in order to validate the outcome of the Shell Alexia S6 trial. This value was deemed as the lowest one that would not compromise engine performance.

The trial showed that cylinder oil consumption had fallen significantly from an average of 520 l/d for the BN 60 cylinder oil to about 370 l/d for Shell Alexia S6 for two of the vessels. The vessels were all able to maintain a feed rate of 0.80–0.85 g/kWh. The piston underside inspections revealed the condition of the cylinder liners was significantly better. The operational benefits included lower cylinder oil consumption and wear rates through better corrosion control.
Berge Bulk Maritime revealed to Shell there were indications of cold corrosion on the surfaces of the cylinder liners of four of its vessels when using a BN 60 cylinder oil. This engine design is known to be sensitive to cold corrosion problems, so a higher base number cylinder oil is recommended to address this issue. The company was also keen to reduce the consumption of cylinder oil for lower operating costs.

Shell suggested changing the cylinder oil to Shell Alexia S6 in close collaboration with the vessel crew and the vessel manager, and using the Shell LubeMonitor programme to monitor cylinder and oil condition. Throughout the trial, the vessels’ crews received regular scavenge drain oil analyses and advice and recommendations on cylinder oil feed rate.

After the trial, the cylinder oil consumption had fallen significantly from an average of 520 l/d for the BN 60 cylinder oil to about 370 l/d for Shell Alexia S6 for two of the vessels. The vessels were all able to maintain a feed rate of 0.80–0.85 g/kWh. The piston underside inspections revealed the condition of the cylinder liners was significantly better.

Based on approximately 280 sailing days a year, Berge Bulk Maritime estimates the annual savings at about 14.2% or $113,000 for the four vessels by switching from a BN 60 cylinder oil to Shell Alexia S6 (BN 100). In addition, the wear rates for the piston rings and cylinder liners are controlled, which translates to longer periods between overhauls and thus maintenance cost savings.

**1 The calculation was based on information in the logbooks that the chief engineers provided weekly and the price of cylinder oil averaged over 2015 in Singapore, as vessels had lifted only in Singapore.**