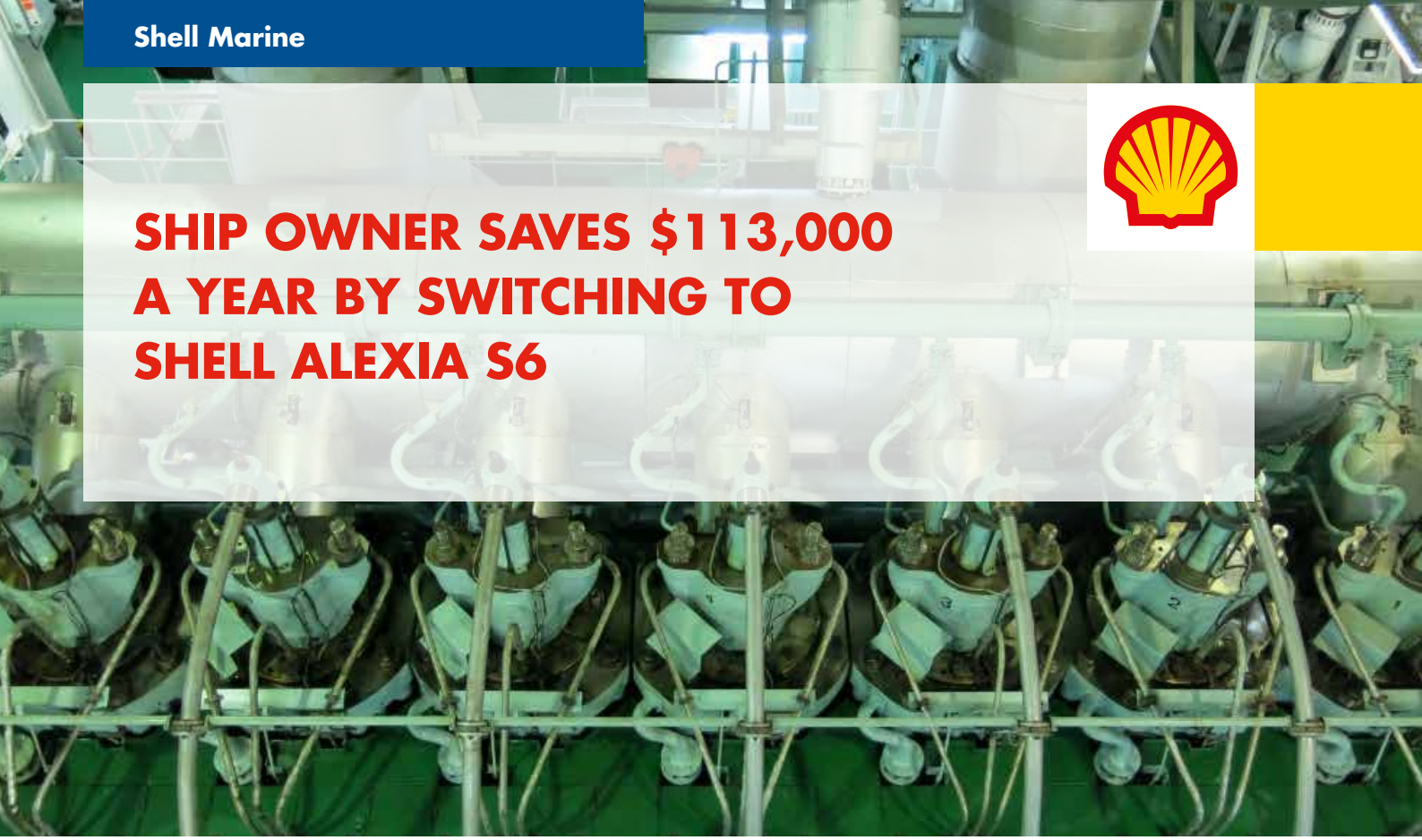

SHIP OWNER SAVES $113,000 A YEAR BY SWITCHING TO SHELL ALEXIA S6

COMPANY: Berge Bulk Maritime Pte Ltd
COUNTRY: Singapore
APPLICATION: Main engine cylinder oil
VESSEL: Bulk carrier
KEY EDGE: Shell LubeMonitor, 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 a 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.

1 CHALLENGE

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.

2 SOLUTION

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.

3 OUTCOME

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.

4 VALUE

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).[1] 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.

SHELL SERVICE	SHELL ALEXIA
Shell LubeMonitor A condition monitoring programme for two-stroke marine engine cylinders that includes access to Shell tools and advice to help you strike an acceptable balance between cylinder oil costs and wear-related cylinder maintenance expenses	The marine industry is changing rapidly as it strives to reduce fuel costs and improve environmental performance. This is increasing operational complexity and the likelihood of cold corrosion, and putting more pressure on the cylinder oils used onboard. We have designed three Shell Alexia cylinder oils to meet your changing needs and complement the wider Shell portfolio. These oils are underpinned by a rigorous scientific understanding of oil stress and their proven performance in engines.
Shell Rapid Lubricants Analysis A flexible used-oil laboratory analysis service designed to save you time and money on maintenance resulting from equipment failure. This early-warning system aims to give you peace of mind that your equipment and lubricants are in optimum working order.	
Shell LubeAdvisor This on-site support from a global team of field-based engineers includes lubrication surveys, vessel assessments, and in-depth technical and applications support when required. Back-up support is provided by telephone, fax or email.	

[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.

Contact your Shell Marine account manager to find out more or visit **www.shell.com/marine**.

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