



customer benefit study

chevron marine lubricants | asia maritime pacific

chevron expertise solves cold corrosion issues

When dry bulk shipping company Asia Maritime Pacific Shanghai turned to Chevron to help solve a cold corrosion issue on two of its ships, Chevron was able to significantly improve the operation of the main engine with its specialised approach to lubricant solutions.

Situation

Two of Asia Maritime Pacific Shanghai's sister ships, both 35,800 dwt bulk carriers, installed with MAN B&W 5S 50 ME-B Mark 9 engines, were suffering from issues related to cold corrosion. Despite trying both 70 BN and 100 BN cylinder lubricants, liner wear continued to increase and considering the cost and time issues associated with changing cylinder liners, this was not an ideal solution. In an effort to combat the corrosion problem, cylinder oil feed rates were increased, which can lead to other engine issues, as well as increasing lubrication cost. So the customer turned to the experts at Chevron.

"The vessels were still experiencing high levels of cold corrosion even with the increased feed rate. The cylinder liner was close to the wear limit, and the honing mark partly disappeared in the upper liner. Without the resistance of the honing mark, the liner surface was not able to sustain oil film," explained Mr. Michael Gu Xinjun, Fleet Manager of Asia Maritime Pacific Shanghai.

"This was a tricky problem. How to improve cylinder lubrication effectiveness was our focus, but we needed to solve not only the corrosion problem, but also how to quickly use the remaining SAE 50 viscosity, 70 BN products on-board the vessel," said Mr. Michael Gu Xinjun.

Asia Maritime Pacific reports that thanks to the use of Taro® Special HT Ultra, the condition of the cylinder liners has significantly improved.

Results

Having analyzed the problem, the technical specialists at Chevron recommended the use of Taro® Special HT Ultra. By mixing the remaining cylinder lubricant — from a competitor supplier — on-board with the 140BN Taro® Special HT Ultra, Chevron was able to achieve two things. Firstly, to increase the BN from 70BN to 100BN or higher. At the same time, overall viscosity was increased to above SAE 50, improving oil adhesion and oil film thickness, which is an effective way to reduce liner wear.

Through Chevron's personalised approach, a regionally based Chevron customer service representative liaised with Asia Maritime Pacific, along with the Chevron supply team, to identify where the vessels could lift Taro® Special HT Ultra. In October and December of 2017, operator Asia Maritime Pacific was able to take product in Singapore, to begin the changeover to the higher BN cylinder lubricant.

Following a main engine inspection, Asia Maritime Pacific reports that thanks to the use of Taro® Special HT Ultra, the condition of the cylinder liners has significantly improved.





Chevron Marine Lubricants DOT.FAST® and FAST™ services provide both on-board and on-shore analysis of drip oil, giving an accurate measurement of total iron wear, including corrosive wear.



Conclusion

A key advantage of switching to a higher BN lubricant is the associated cost savings, as the higher BN can potentially decrease feed rates, and in most cases, reduce corrosion with less product injected into the cylinder as well as increasing the liner life through optimized lubrication. DOT.FAST oil analysis is essential for monitoring wear, and in demonstrating improvements in both engine condition and the associated cost saving with moving from a low BN to a higher base number cylinder lubricant such as Taro® Special HT Ultra. Chevron Marine Lubricants DOT.FAST® and FAST™ services

provide both on-board and on-shore analysis of drip oil, giving an accurate measurement of total iron content, a view of corrosive wear and enabling feed rate reduction whilst maintaining and in most cases improving wear rates.

As shipping heads into a lower emissions future, this success story is yet another example of why a “one size fits all” approach is no longer appropriate. Chevron Marine Lubricants continue to offer a full range of cylinder lubrication products, including our 25BN Taro® Special HT LF through to the 140BN Taro® Special HT Ultra. ■