



Nine CSL Newbuilds Eliminate Oil From Shaftline

Installed with COMPAC Seawater Lubricated Propeller Shaft Bearings

The drive for pollution free ships continues as Canadian-based ship owner, CSL Group Inc., eliminates oil from the stern tube and equip nine of their latest newbuilds with seawater lubricated propeller shaft bearings. CSL has specified non-metallic propeller shaft bearings that use seawater rather than oil to lubricate the shafts on the Trillium Class vessels built at Chengxi Shipyard and Yangfan Shipyard in China.

Following the successful retrofit and operation of Thordon water lubricated propeller shaft bearings on the *CSL Acadian* (converted in 2006), CSL will install a similar package on all of its newbuilds. These newbuilds include three Panamax (71,900 dwt) self-unloader bulk carriers, four (35,500 dwt) Great Lakes self-unloader bulk carriers and

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Installation of Thordon COMPAC seawater lubricated propeller shaft bearing on CSL bulk carrier built in China

two (36,000 dwt) Great Lakes bulk carriers. The new-builds fall under CSL's trademark Trillium Class which symbolically mirrors the three legs of CSL's sustainability philosophy as well as represents the three advantages the vessels provide, namely in the areas of Energy, Efficiency and the Environment. "The Trillium Class design includes many industry leading efficiency and pollution reduction features. Eliminating any possible source of pollution was given a high priority when designing these vessels", says Kevin Begley of CSL International.

The pollution of the world's oceans and seas has become a matter of increasing international concern for many ship owners. As stricter environmental legislation and improved pollution detection methods are becoming the norm in Canada, the United States of America, and the European Union; ship owners like CSL are looking for new ways to reduce all sources of pollution from their ships. Choosing seawater lubricated propeller shaft bearings and grease-free rudder bearings are just a few ways ship owners can ensure future compliance with any pending zero discharge legislation. **NW**

Eco-IMPACT Facts - Two Types of Leakage

There are two sources of oil discharges from propeller shaft seals:

- Operational, where oil leaks in order for the seals to work
- Accidental, where there is damage to the sealing elements, allowing oil to escape into the sea (or allow seawater to contaminate the oil)

Historically, "operational discharges" of lubricating oil have been considered normal, and as the discharges have been below the waterline in smaller quantities, many ship owners have not been concerned. This has changed over the past decade with better oil detection methods (such as satellite and aerial surveillance) and increasingly larger oil pollution fines.

Operational discharges from stern tube leakage have only recently been quantified with the first authoritative study on stern tube oil operational discharges done by Dr. Dagmar Etkin in 2010. Her research on port oil discharges from ships estimated that if the same rates of discharge occur at sea as they do in port, the estimated worldwide annual inputs of lubricants into marine waters

both in ports and at sea might amount to four times the port estimate. She estimated that total worldwide use of oil-based lubricants from operational leaks and discharges would then be about 130 million to 244 million litres (34 million to 64 million US gal.) annually. This would be equivalent to 137 individual oil spills of equal size to the Exxon Valdez disaster in 1989. **NW**

Etkin, Dagmar Schmidt. Environmental Research Consulting "Worldwide Analysis of In-Port Vessel Operational Lubricant," Arctic and Marine Oil Spill Program Technical Seminar of Environment Canada, 8 June 2010, Halifax, Canada



Aft shaft seal damage caused by fishing net caught in the propeller