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Lubricated propeller shaft bearing arrangements	
Reference:	CONARINA Class

Lubricated propeller shaft bearing arrangements

A new study highlights the commercial and environmental benefits of seawater lubricated propeller shaft bearing arrangements. Substantial operational savings can be made by switching from oil lubricated shafts.

The study was carried out in response to the increase in oil and oil-based Environmentally Acceptable Lubricant (EAL) lubricated stern tube bearing failures, which are placing an additional and unnecessary financial, burden on shipowners.

Over 95% of all new commercial ships continue to be built with oil lubricated propeller shafts – a system that is not only operationally expensive but environmentally questionable.

The case for water lubrication is a commercially and technically viable way of increasing profits while achieving corporate sustainability goals.

The financial advantage is lost once the vessel enters the water, due to the costs associated with purchasing lubricating oils, regular maintenance and unscheduled drydockings required to repair or replace faulty shaft seals.

While emergency seal repairs alone can cost anywhere from \$150,000 to \$300,000, excluding drydock costs, the constant topping up of an oil-lubricated system, combined with the regularity of aft seal failure, can cost shipowners in excess of \$6.5 billion over a twenty-five-year period.

For a typical single screw bulk carrier turning a 650mm shaft, the total cost of operating an oil-lubricated system over 25 years (including capital investment) is \$605,925 against \$370,000 for a seawater-lubricated arrangement.

Although part of the cost of operating an oil-lubricated system is dependent on oil price fluctuations and does not take into account the use of more expensive EALs, the use of seawater as the lubricating medium is obviously free of cost.

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