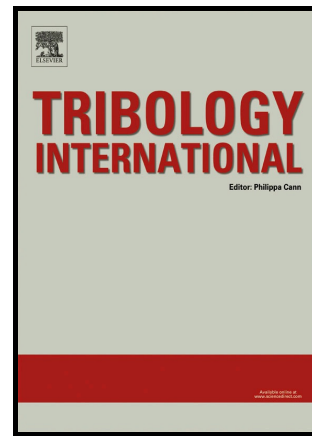


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Influence of local bush wear on water lubricated sliding bearing load carrying capacity

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Abstract (100 words)

One of main problems concerning water-lubricated bearings is their durability. There are known cases of bearings with life time measured in decades, and some, whose refurbishment was necessary just days after start-up.

Obtaining stable fluid film friction plays key role in the durability of these bearings. Unfortunately, their load-carrying capacity is limited due to water's low-viscosity.

The conducted experimental research demonstrated that in water-lubricated bearing working under fluid lubrication regime, noticeable bush wear occurred at the edges. Detailed analysis of this phenomenon made it possible to propose a method for calculating load capacity of sliding bearings which provides for local bush wear.

Keywords: water lubricated bearings, propeller shaft bearings, marine bearings, bush wear

Key words: wear, local bush wear, water lubricated bearings

1. Introduction

Water-lubricated bearings are finding increasingly wide use in various branches of industry. As such, they may also be encountered in marine propulsion systems. They are also increasingly frequently employed in bearing systems of water turbine shafts and water pumps. This rising popularity is due to a number of reasons. First of all, their simple construction has direct impact on the level of pricing which is usually quite attractive. Furthermore, this type of technology fits well into the trend of environmentally-friendly solutions since water-lubricated bearings do not constitute a source of pollution. The lubricating agent consists of water circulating in a closed system and in the simplest bearings it may even be taken directly from the surroundings.

For many years, water-lubricated sliding bearings have been a subject of both experiment-based and theoretical research in various scientific centers and R&D departments of leading companies. Synthetic rubber - NBR, was one of the first extensively tested materials employed in the

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