

# **Rotordynamic Influence on Rolling Element Bearing Selection and Operation**

by

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Key words: Rotordynamics, bearing selection, shaft vibration, bearing loads, balancing.

## **ABSTRACT**

Three case studies are presented that illustrate the importance of dynamic considerations in the design of machinery supported by rolling element bearings. The first case concerns a milling spindle that experienced internal rubs and high bearing loads, and required retrofit of an additional damped bearing. The second case deals with a small high-speed generator that suffered high vibration due to flexible mounting. The third case is a propulsion fan simulator rig whose bearings failed catastrophically due to improper bearing installation (which resulted in inadequate dynamic bearing stiffness) and lack of health monitoring instrumentation.