Bearing Outer Race Defects

Single Value
CPM | 17962.5
Amp | 0.0344335
Date | 04-Jan-00 11:02:17
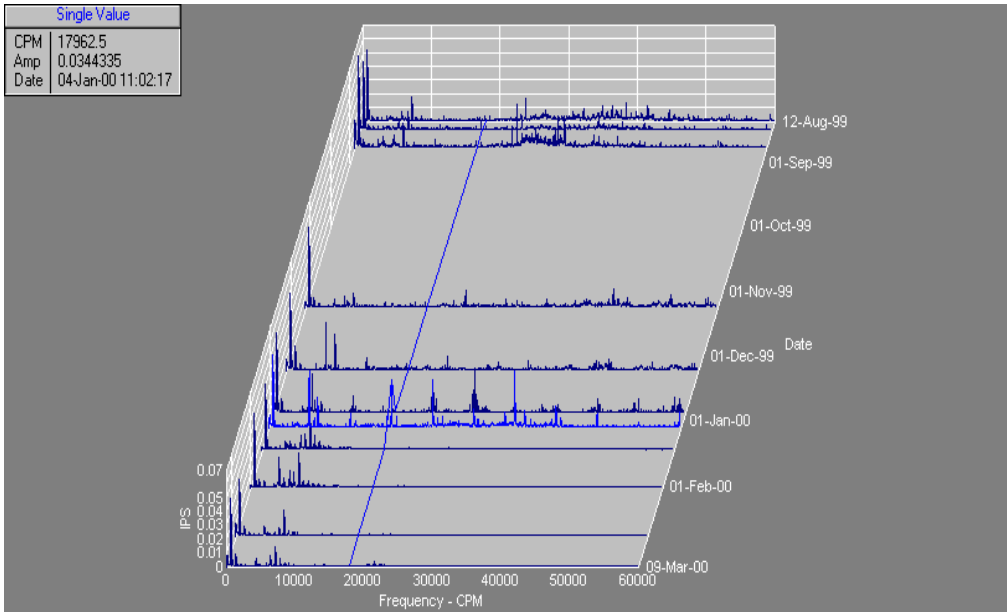

- *Early warning signs of broken gear teeth are subtle but can be found with the right tools.*

- *Replacing parts that are about to fail saves everyone from unnecessary headaches.*

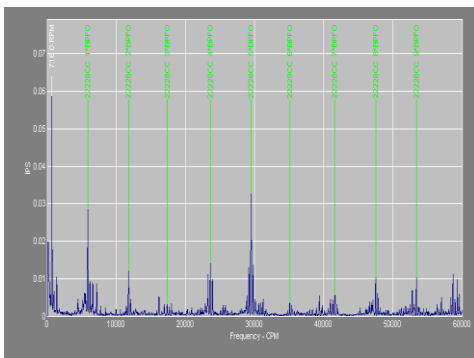*Spend a little money now to save big money later.*

Case History Ventilation Fan Bearing

During January 2000, while completing our monthly vibration check on a 1000 HP ventilation fan we found definite held bearing outer race defect frequencies. We rechecked the vibration in two weeks, and found the same readings. The ventilation fan's vibration system had not shown any excessive increase in vibration. The spectrum of the held bearing is shown below with outer race defects and sidebands at running speed. When the sidebands were present, which is an indication of a serious problem, we recommended replacement of the bearing. Management decided based on the waterfall trending and our recommendation to schedule a bearing change.
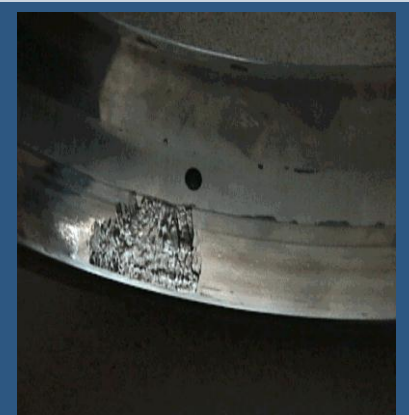
The waterfall trend diagram at the top of the page shows the bearing outer race defect and the spectrums after replacement of the bearing.

The bearing was removed and a spalled area about 40mm long was found on the outer race. If the bearing had not been replaced it is possible the spalled area would have increased in size and caused to bearing to fail , which would lead to possible catastrophic failure of the ventilation fan.

This is one of many examples of vibration analysis uncovering a problem before the unit is near failure and giving management the time to schedule preventative maintenance work. In the next newsletter I will illustrate a different case study of vibration analysis, which detects a problem and verification of the problem when investigated. If you have any questions please contact us. Feedback is very important to us, and our mission to our customers.

Above is the actual outer ring that was damaged

Any questions feel free to contact Larry Massey
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