

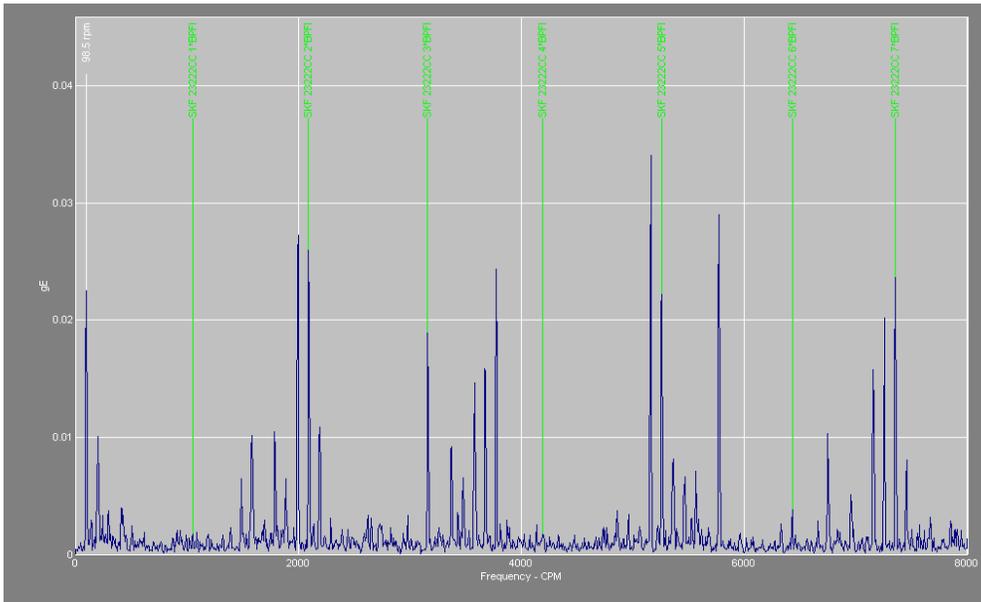


Bearing Preloading



Coal Mine in Operation

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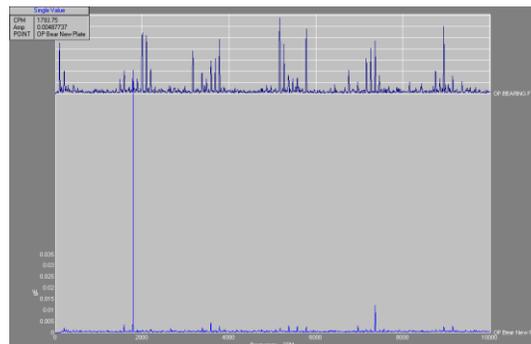


- Early warning signs of broken gear teeth are subtle but can be found with the right tools.
- Replacing parts that are about to fail saves everyone from unnecessary headaches.

Case History 300 SL Bearing Pre-Loading

During 2000, while checking vibration on a rebuilt gear case at the repair facility. We found a definite bearing problem on the output bearing. The spectrum at the top of the page shows bearing inner race defects with sidebands of running speed. The sidebands are an indication of a serious problem. This problem was found in an Enveloped Gs spectrum. We did not find any problems using the velocity or acceleration readings.

The bearing was removed and it was found that only a glazing was visible on the inner race. The bearing cover plate was examined and found to be too thick. It was removed and machined to give additional clearance. It was determined that pre-loading was affecting the bearing. The bearing was replaced and the machined cover installed.



The spectrum waterfall above shows the before and after spectrums. Notice that only running speed and its' harmonics are evident on the follow up spectrum.

I have found, during previous inspections, where pre-loading of a bearing can cause inner race defects or outer race defects. During the previous inspections, the problem could not be found using velocity and acceleration readings. The use of the SKF Enveloped Gs spectrum is a powerful tool in the diagnostic health care of rotating equipment. This also provides us more reliability and a better look at the health condition of the units tested, under no load conditions.

This is one of many examples of vibration analysis uncovering a problem before the unit is shipped and installed.

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

Any questions feel free to contact Larry Massey
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