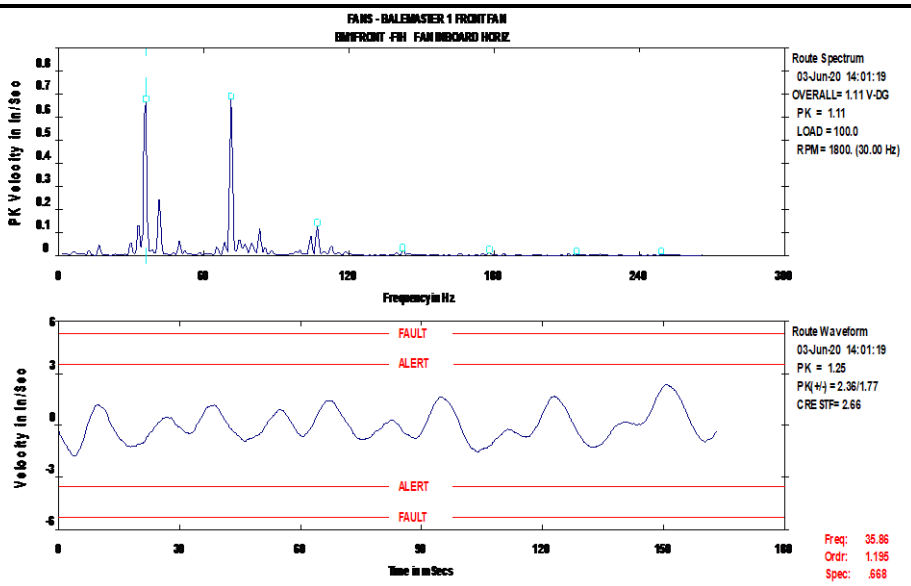
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ADM Flour Milling	**Survey Date**	6-3-2020
Location	Jackson, TN	**Report Date**	6-4-2020
Machine	Bailer 1 Fan (Near fan unit)	**QMS No.**	142569
Component	Fan	**Analyst**	DEWS

Defect Rating for this machine	**Class III**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data



Analysis

Harmonic peaks dominate the spectrum.

Discussion / Repair recommendations

Vibration data indicates an issue with the fan shaft and components. Check for shaft run out, misalignment and sheave/belt wear. Check the structure for cracks**. Rated a Class III Defect.**

Trend Data

HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ADM Flour Milling	**Survey Date**	6-3-2020
Location	Jackson, TN	**Report Date**	6-4-2020
Machine	Hammer Mill Fan	**QMS No.**	142569
Component		**Analyst**	DEWS

Defect Rating for this machine	**Class III**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
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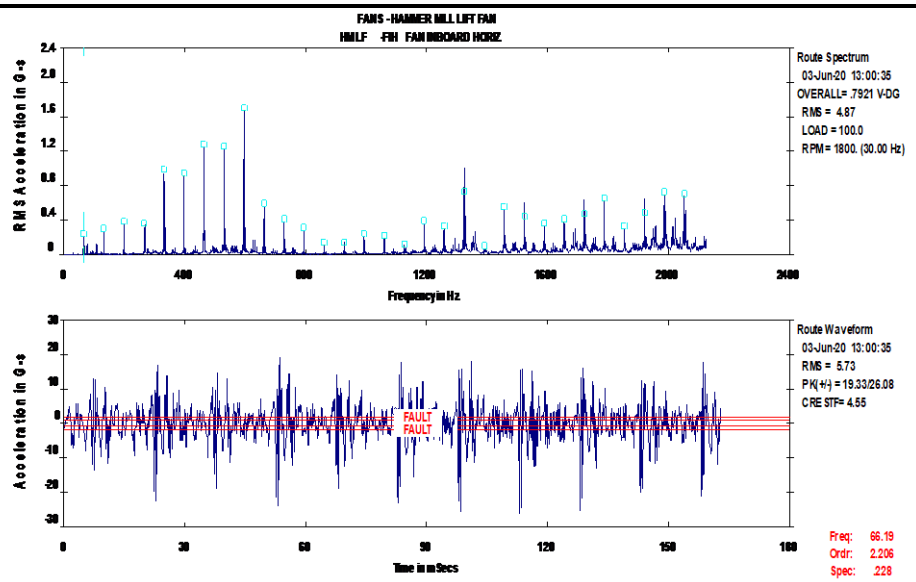
Vibration Data



Analysis

Harmonics of 66 Hz dominate the spectrum and time waveform.

Discussion / Repair recommendations

Data for the sheave end fan bearing suggests mechanical looseness. There are also other possibilities. The bearings will most likely need to be changed. The motor bearing are also showing signs of distress. Inspect the full drive train for defects and wear. Check the sheave alignment too. Acceleration is almost 5 g's RMS. **Rated a Class III Defect.**

Trend Data

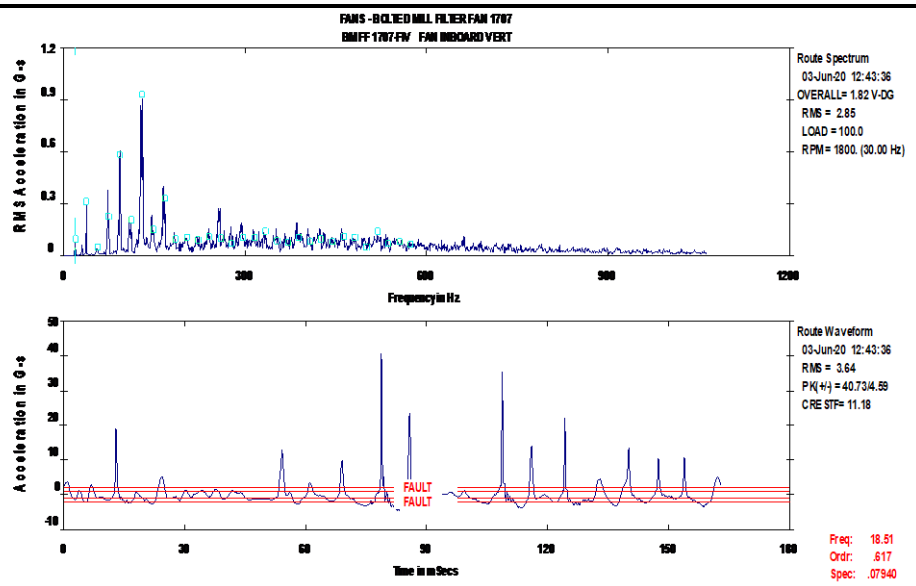
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ADM Flour Milling	**Survey Date**	6-3-2020
Location	Jackson, TN	**Report Date**	6-4-2020
Machine	Bolted Mill Filter Fan 1707	**QMS No.**	142569
Component	Bearing	**Analyst**	DEWS

Defect Rating for this machine	**Class IV**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data



Analysis

Large acceleration peaks in the acceleration spectrum and asymmetrical peaks in the acceleration time waveform.

Discussion / Repair recommendations

Strong harmonics in the spectrum and impacting in the time domain of the inboard fan bearing indicate severe component distress. Inspect the bearings and all associated components as soon as possible to avoid secondary damage. **Rated a Class IV Defect.**

Trend Data

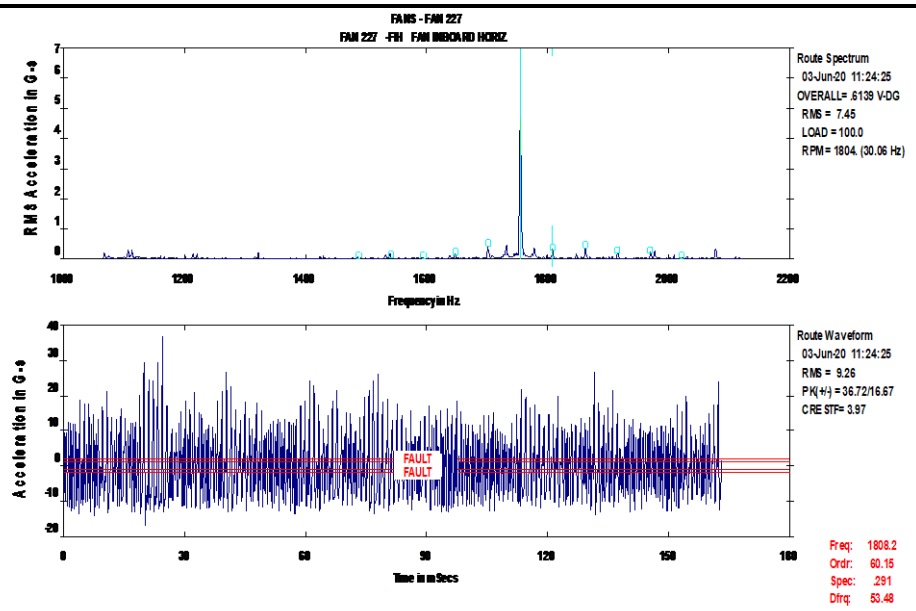
HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ADM Flour Milling	**Survey Date**	6-3-2020
Location	Jackson, TN	**Report Date**	6-4-2020
Machine	Fan 227	**QMS No.**	142569
Component	Bearings	**Analyst**	DEWS

Defect Rating for this machine	**Class IV**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data



Analysis

Large vibration peak with sidebands. Asymmetrical vibration peaks in the time domain.

Discussion / Repair recommendations

Data indicates the bearings are in poor shape. Replace the bearings and any other components worn during repairs. **Rated a Class IV Defect.**

Trend Data

HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ADM Flour Milling	**Survey Date**	6-3-2020
Location	Jackson, TN	**Report Date**	6-4-2020
Machine	Bin 26 Fan	**QMS No.**	142569
Component	Frame	**Analyst**	DEWS

Defect Rating for this machine	**Class IV**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
Class II: Defect (s) present that may cause problem in long term (2-6 mos.). Repair during normal maintenance scheduling. Continue to monitor.	**Class IV;** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. ***Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs.***

Vibration Data

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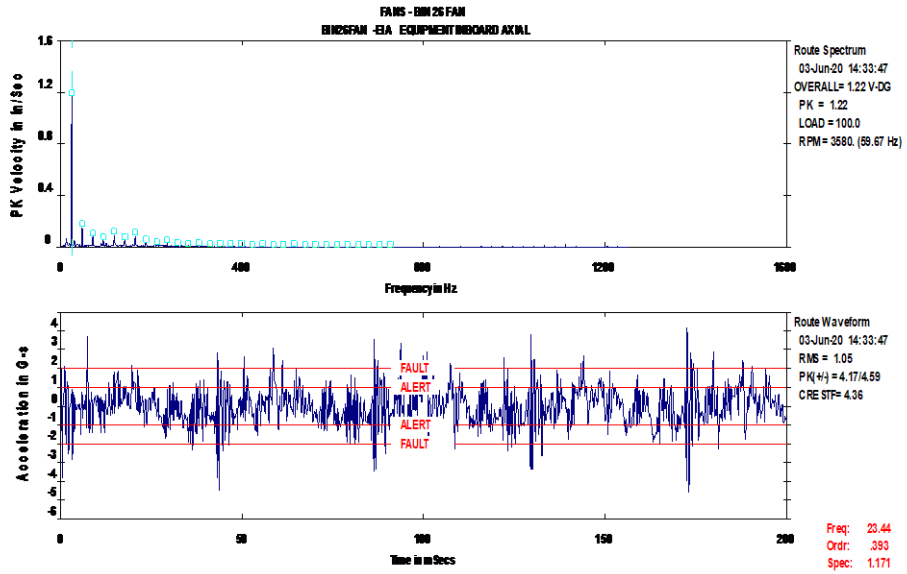

Analysis

Large 1x fan rpm vibration for the fan axial.

Discussion / Repair recommendations

High axial vibration data indicated an issue with fan shaft, but we found a large through crack in the bearing support leg. There could some wear in the bearings though too. Fix the crack now and monitor the bearing as time allows. **Rated a Class IV Defect.**

Trend Data

HI-SPEED PREDICTIVE MAINTENANCE

Machinery Vibration Report

Client	ADM Flour Milling	**Survey Date**	6-3-2020
Location	Jackson, TN	**Report Date**	6-4-2020
Machine	South Line Shaft Bearing 1	**QMS No.**	142569
Component	Bearing	**Analyst**	DEWS

Defect Rating for this machine	**Class III**
Defect Rating System	
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue normal monitoring.	**Class III;** Defect (s) present that may cause failure in short term (less than 2 mos.). Should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.
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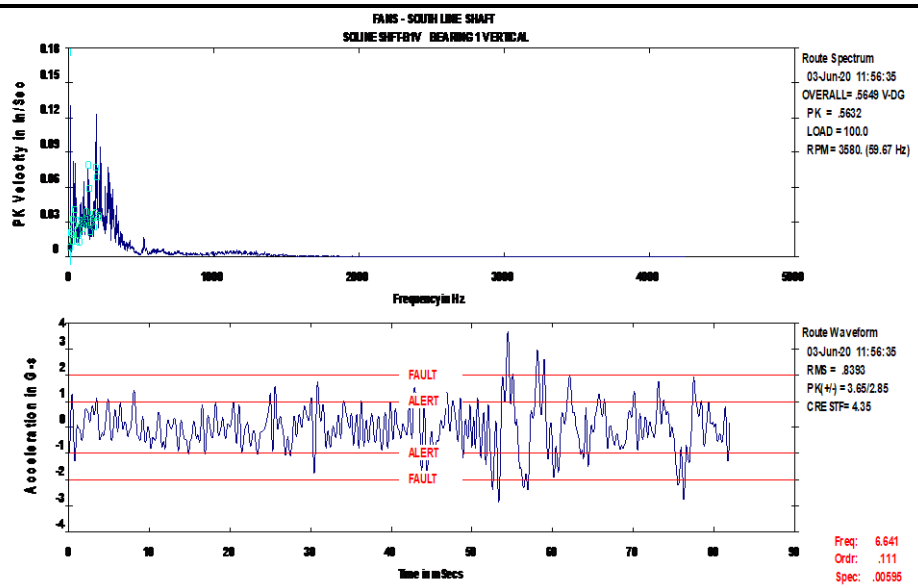
Vibration Data



Analysis

Random noise in the first bearing.

Discussion / Repair recommendations

The first bearing, next to the motor appears to be in distress due to the randomness of the vibrations seen in the data. The motor sheaves and belts could also be an issue, but we believe the bearing is trashed. Inspect the bearing being prepared to replace the internals. Make sure the housings are mot too worn for continued use.
Rated a Class III Defect.

Trend Data